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

Environmental data report September 1995 to October 1998

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Summary

The UN/ECE international co-operative programme of effects on materials is an international project that has been running for eight years at 39 test sites in 14 countries from 1987 to 1995. A second phase of the project started in 1997 with an adjusted numbers of test sites and countries participating. In the second phase 30 test sites and 19 countries participate. During the interim period 1995 to 1997 trend analysis for metal corrosion and exposure of the two materials glass and plastic continued. Norwegian Institute for Air Research has been sub-centre and responsible for the environmental data storing, reporting and evaluation during the whole programme.

This report presents the database for the period 1995 to 1998 of environmental measurements obtained in the ECE-ICP on materials programme. Data for the whole period is only reported for the 21 sites belonging to the first phase of the project. Some of the new sites have reported data from 1995 on, but the environmental data for the new sites are mandatory only from 1997. The yearly average values have been calculated according to the exposure period. Up to the autumn 1997 the average values are given for the period September to August since the material exposure started in September. Phase two started later and from 1997 the yearly average values have been calculated from November to October. The monthly values for the whole period are reported in Appendix B.

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 for the first phase of the programme. During the interim period the amount of data collected has been less predictable. For some sites almost no data was reported and several sites have gaps in their files. From 1997 improvement has been observed but even today there are sites that have very long delay in their reporting routines. Sites belonging to the EMEP net of sites or to national surveillance programme have the best regularity.

To obtain a good database for dose-response evaluation it is important to have a spread in the data for the most important parameters. The data obtained so far indicates that we have a good spread in the data for all important gases as well as for the most important meteorological data.

By comparing the yearly values for the year 1987/88 with the year 1997/98, a trend analysis for the gas pollutants has been carried out. For SO_2 reduced concentrations are observed on almost all sites. The total trend is that the concentration reduction is 75% in the database. For NO_2 a reduction is also observed, mainly in the highest polluted areas. Possibly this is caused more by local regulation of the traffic around the test sites than by a general reduction in the traffic. How much the introduction of catalysts in the exhaust system for cars have effected the result is unknown. However, for the NO_2-data as a whole, a reduction of 40% can be seen. For O_3 no trend is observed.

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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 was started in September 1987 and has involved exposure at 39 test sites in 12 European countries and in the United States and Canada. The first phase of the exposure programme finished in 1995. However during the eight years where the exposure programme has been carried out, a large change in the pollution situation in Europe has been observed. In the final environmental data report for the period 1987 to 1995 (Henriksen et al., 1997), the same trend has been observed for most of the 39 test sites. The SO_2 concentrations have been drastically reduced while the change in the NO_2 and O_3 levels has been minor. This new pollution situation where the importance of NO_2 and O_3 were in focus, led to a proposal of a second phase of the programme. The new 4 years exposure project was launched in the fall 1997 with redefined environmental measuring programme, a better combination of test sites for field exposure and with several new countries as partners in the projects (Swedish Corrosion Institute rev. 1993). For the period 1995 to 1997 the on-going activities were; exposure of polymeric and glass materials as well as trend analysis.

The aim of the new programme is to perform a quantitative evaluation of the effect NO_x and other pollutants like ozone and sulphur pollutants in combination with 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 organising the programme with Sweden as lead country and 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:

- Steel and zinc for trend analyses (Sub-centre responsible for evaluation: SVUOM Praha a.s., Prague, Czech Republic),
- Zinc for 4 year's of exposure (EMPA Corrosion/Surface Protection, Dübendorf, Switzerland)

- Copper and cast bronze (Bayerisches Landesamt für Denkmalpflege, Munich, Germany).

Stone materials, Portland limestone (Building Research Establishment Ltd., Department of Environment, Waterford, United Kingdom).

Paint coatings, steel with silicon alkyd paint (Norwegian Institute for Air Research, Kjeller, Norway).

Glass materials, Two types of glass M1 and M3 (Institute of Chemistry, Academy of Fine Arts, Vienna, Austria)

Norwegian Institute for Air Research has been the sub-centre for the environmental database through the whole programme.

The exposure programme has fewer materials than in the first phase, mainly because we have to use materials, which is sensitive enough for having sufficient reaction within 4 years of exposure.

2 The measuring programme

The measuring programme includes a normal environmental programme and an extended programme, as shown in Table 1.

Table 1: The measuring programme

Components to be measured		
Normal programme	Gas Precipitation Climate	SO_2, O_3, NO_2 mm, pH, SO_4-S, NO_3-N, Cl^-, conductivity Temperature, relative humidity and sun radiation
Extended programme	Gas Precipitation Particulates	HNO_3 NH_4-N, Na, Ca, Mg, K, Total amount

The data are to be reported to the environmental sub-centre as monthly mean values, except for sun radiation and mm precipitation, which are reported as the sums. The data are presented as monthly and yearly values for the project period.

3 Data from the monitoring test sites

The data are sent to the environmental sub-centre as excel data files on diskette or as E-mail.

All data presented by the environmental sub-centre are given with the same accuracy as in the reporting forms agreed upon. 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.

4 Monthly mean concentrations

The average monthly data for September 1995 to August 1996, September 1996 to August 1997 and November 1997 to October 1998 are given in Appendix B. The participating countries are reporting data on a monthly base and are responsible for the quality control of their own data.

5 Calculation of monthly values

For their own test sites the participants shall calculate the mean values in accordance with the following equations.

- Mean temperature (T_M)

$$T_M = \frac{\sum_1^i T_i}{i}$$

T_i = measured values

i = number of records

- Mean relative humidity (RH_M)

$$RH_M = \frac{\sum_1^i RH_i}{i}$$

- Sun radiation (sun) (for incomplete data sets see chapter 6.2)

$$sh = \sum_1^i sh_i$$

If sunshine hours are reported as a substitute for sun radiation, sunshine hours shall report the number of hours where the test panels have been exposed to sunlight. A special designed program has been developed for transferring yearly values for sunshine hour to sun radiation.

- Mean gas concentrations G_M

$$G_M = \frac{\sum_1^i G_i}{i}$$

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

$$G_M = \sum_1^i \frac{(n_i \cdot G_i)}{\sum_1^i n_i}$$

n_i = sampling period

- Precipitation (for incomplete data sets, see chapter 6.2)

$$mm = \sum_1^i mm_i$$

- Weighted mean pH (pH_M)

$$pH_M = \div \log \frac{\sum_1^i \left[mm_i \cdot \left(10^{-pH_i} \right) \right]}{\sum_1^i mm_i}$$

- Weighted mean values for cations, anions and conductivity (C_M)

$$C_M = \frac{\sum_1^i \left(mm_i \cdot C_i \right)}{\sum_1^i mm_i}$$

6 Yearly mean concentrations

6.1 Yearly mean values

All values given for yearly mean values are calculated from the available monthly values. In Appendix A the available yearly values are listed. The periods listed for the different test sites depend on, when the site has been included in the exposure programme. For the old sites that have been a part of the programme for both first and second phase yearly data is given from 1987. For the new test sites yearly data shall be reported from 1997 or earlier if data exist.

The calculation of the yearly values follows the procedure as for the monthly data. The quality of the yearly mean values depends on the amount of monthly values available. For the reported yearly values for gases and precipitation ions the following rules has been adopted:

- A yearly mean value for observations including 75% of the monthly values or more is accepted without any remarks
- A yearly mean value including between 50% and 75% of monthly data is accepted with an asterisk (*)
- A yearly value including less than 50% is reported with a (X) and is not recommended to be used for further statistical evaluations.

Temperature and relative humidity data will have seasonal variations and need a complete set of data. To complete the yearly results estimated values will be introduced in the same way as for sun radiation and amount of precipitation. See chapter 6.2

6.2 Sun radiation and amount of precipitation

Sun radiation 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 might be used. The estimated values can be formed by comparing similar sites, by looking at reported values for other months from the same season or from meteorological statistics. Only 4 estimated values are accepted for each parameter,

and the estimated values shall be 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.

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

7 Results

The reported environmental data in the ECE-ICP on materials programme has been collected since August 1987. From 1987 to 1995 data from 39 sites has been collected. For second phase, the period 1995 to 2001, the programme was redefined and the number of sites with reporting data are 30. A list of all the test sites for phase one and two is given in Table 2. Based on the experience from the first phase of the programme the environmental parameters given in Table 1 were selected for the second phase. The main difference between data collected in the first and second phase is that Time of Wetness (TOW) should not be reported, that solar radiation should be reported instead of hours with sun and that ozone should be reported on all sites. It was also decided that all data should be reported to the environmental sub-centre as monthly values. The option of using passive samplers on a monthly base for measuring the gaseous pollutants was also introduced.

For the analysis of the material damages of the exposed samples a database for the environmental yearly mean values following the same periods as for the exposure periods was created and it is presented in Appendix A. The start of the second phase was for most test sites in October and November. For the 1997-1998 the yearly values are calculated for the months November 1997 to October 1998, while the yearly values for the previous years were calculated from September to August.

Table 2: List of test sites of exposure programme.

Test site no.	Test site name	Country	Location	Measuring period
1	Prague-Letnany	The Czech Republic	Urban	1987→
2	Kasperske Hory	"	Rural	1987-1995
3	Kopisty	"	Industry	1987→
4	Espoo	Finland	Urban	1987-1995
5	Ähtäri	"	Rural	1987→
6	Helsinki-Vallila	"	Industry	1987-1995
7	Waldhof-Langenbrügge	Federal Republic of Germany	Rural	1987→
8	Aschaffenburg	"	Urban	1987-1995
9	Langenfeld-Reusrath	"	Rural	1987→
10	Bottrop	"	Industry	1987→
11	Essen-Leithe	"	Rural	1987-1995
12	Garmisch-Partenkirchen	"	Rural	1987-1995
13	Rome	Italy	Urban	1987→
14	Casaccia	"	Rural	1987→
15	Milan	"	Urban	1987→
16	Venice	"	Urban	1987→
17	Vlaardingen	Netherlands	Industry	1987-1995
18	Eibergen	"	Rural	1987-1995
19	Vredepeel	"	Rural	1987-1995
20	Wijnandsrade	"	Rural	1987-1995
21	Oslo	Norway	Urban	1987→
22	Borregaard	"	Industry	1987-1995
23	Birkenes	"	Rural	1987→
24	Stockholm South	Sweden	Urban	1987→
25	Stockholm Centre	"	Urban	1987-1995
26	Aspvreten	"	Rural	1987→
27	Lincoln Cathedral	United Kingdom	Urban	1987→
28	Wells Cathedral	"	Urban	1987-1995
29	Clatteringshaws Loch	"	Rural	1987-1995
30	Stoke Orchard	"	Rural, industry	1987-1995
31	Madrid	Spain	Urban	1987→
32	Bilbao	"	Industry	1987-1995
33	Toledo	"	Rural	1987→
34	Moscow	Russia	Urban	1987→
35	Lahemaa	Estonia	Rural	1987→
36	Lisbon-Jeronimo Monastery	Portugal	Urban	1987→
37	Dorset	Canada	Rural	1987→
38	Research Triangle Park	USA (NC)	Rural	1987-1995
39	Steubenville	USA (OH)	Industry	1987-1995

Table 2: cont.

40	Paris	France	Urban	1997→
41	Berlin	Germany	Urban	1997→
42	Athens	Greece	Urban	1997→
43	Tel Aviv	Israel	Urban	1997→
44	Svanvik	Norway	Rural, industry	1997→
45	Chaumont	Switzerland	Rural	1997→
46	London	United Kingdom	Urban	1997→
47	Los Angeles	USA (CA)	Urban	1997→
49	Antwerp	Belgium	Urban	1997→

8 Model for computation of solar radiation

A model for computation of solar radiation received by a horizontal 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 horizontal 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 integration 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 Raleigh 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 a 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 in MJ/m^2.

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 is generally more difficult to maintain the site. In programmes like ECE/ICP materials with long exposure periods, it is sometime necessary to move a test site due to local problems like new use of the property. In some countries the funding of the environmental measurements was limited in the start of the second phase, but the situation seems to be better the last year. However for some countries, the regularity for reporting the data has been slower than expected. This is illustrated as lack of data for some sites in Appendix A and B.

In the final environmental report from phase one (Henriksen et al., 1997), missing values were to some degree generated as described in Chapter 5.2. This is not done in this report, mainly because there are so few comparable data available for the new exposure site. The solar radiation data obtained is only listed in Appendix B. This is done because there are large deviations in the data reported from the different sites. We will therefore need a better quality control with the data before they are accepted for statistical use.

10 Evaluation of the data

10.1 The data distribution

It is important for the evaluation of the dose-response correlation for materials with the environmental impact that we have as large spread in the concentrations of most important pollution parameters. In the following figures the yearly mean values for the exposure year 1997-1998 for the most import parameters are given.

In Figure 1 the spread in the SO_2 concentrations is shown. The numbering is in accordance with the numbers in Table 2. The values go from 23.5 µg/m^3 for Kopisty down to 0.2 µg/m^3 at the Scandinavian EMEP stations. The distribution is fairly good. Low values are dominating in the base as expected since the total amount of sulphur emission in Europe has been reduced during the years of this program. This is also illustrated in the scatterplot shown in Figure 4 in Chapter 10.2.

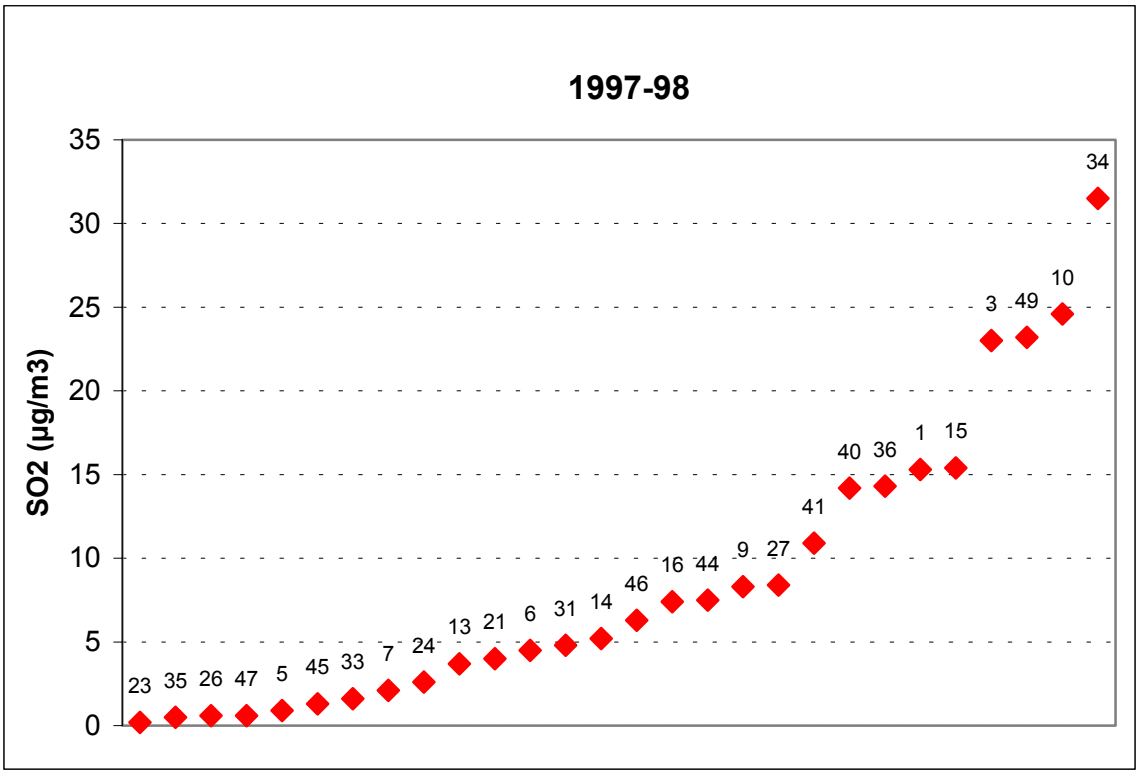

Figure 1: The spread in the yearly mean SO_2 concentrations at the test sites in phase 2 of the exposure programme.

In Figure 2 the spread in the NO_2 concentrations is shown. The values go from 83 µg/m^3 for Milan down to 0.7 µg/m^3 at the EMEP station in Estonia. The distribution is fairly good. Low values are dominating in the base because of the number of EMEP sites in the programme.

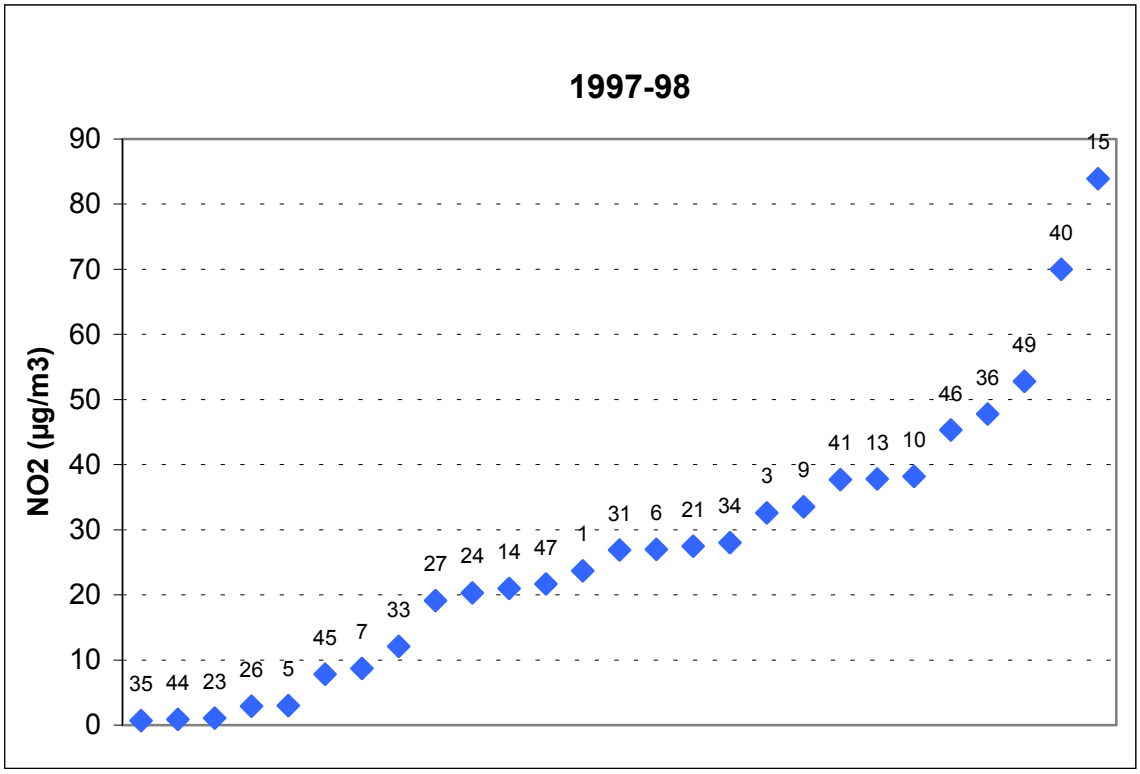

Figure 2: The spread in the yearly mean NO_2 concentrations at the test sites in phase 2 of the exposure programme.

In Figure 3 the spread in the O_3 concentrations is shown. The values go from 88 µg/m^3 for the EMEP station outside Toledo down to 21 µg/m^3 in Berlin. The distribution is as expected. It is a clustering of values around 50 µg/m^3. The low values are observed in the big cities and high values in rural areas in the south and up in the alpine area.

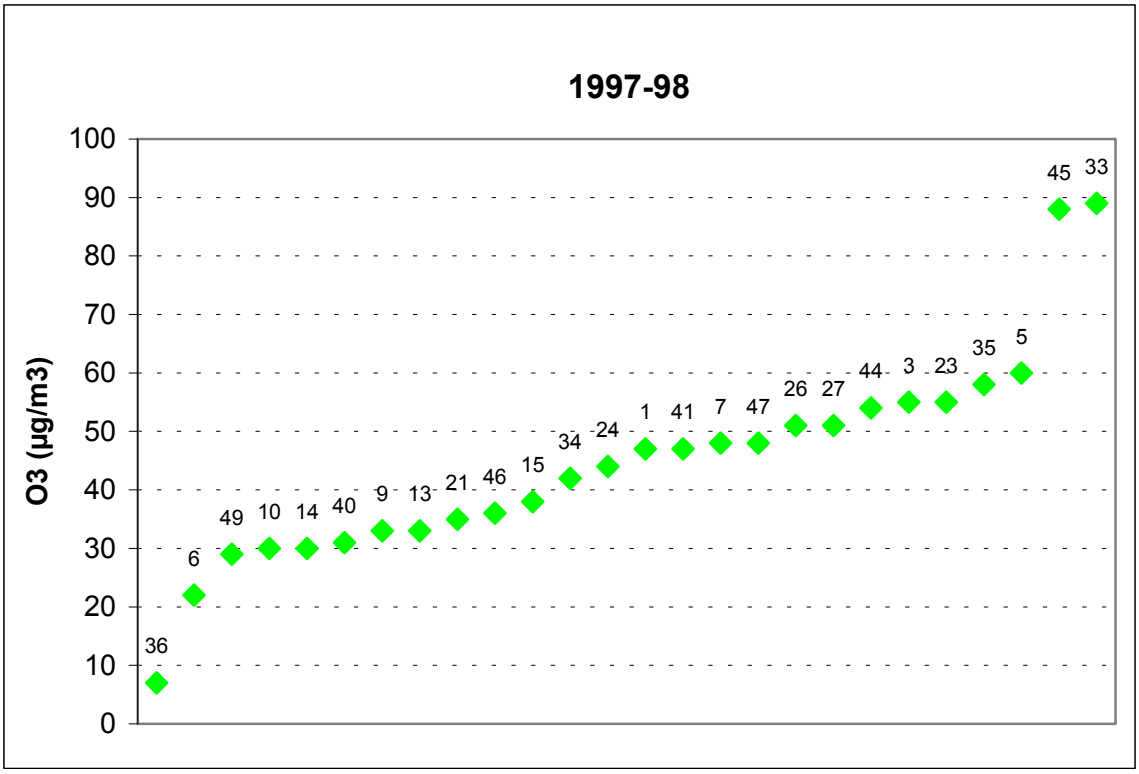

Figure 3: The spread in the yearly mean O_3 concentrations at the test sites in phase 2 of the exposure programme.

10.2 Trend analysis

During the time of the exposure programme some large changes have occurred in the pollution situation in Europe. To illustrate these changes scatter plots of some of the most important parameters have been made, comparing the data for 1987-88 with the data from 1997-98.

In Figure 4 a scatter plot of SO_2 for the two years 1987-88 and 1997-98 is shown. The plot shows a dramatic reduction in the SO_2 concentrations during the period. In average the reduction is close to 75%.

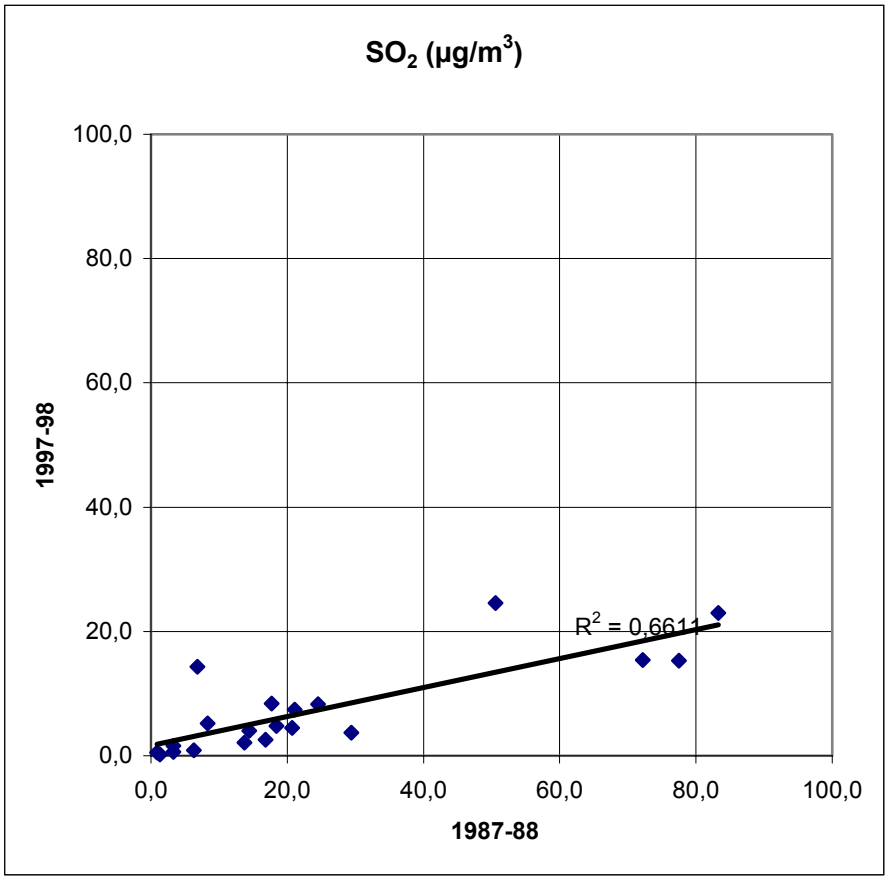

Figure 4: Scatterplot showing the change in the SO_2 concentrations for the same sites from 1987/88 to 1997/98.

The NO_2 values for the same two periods are shown in Figure 5. The plot shows that even for NO_2 it has been a reduction. This is mainly because the most polluted sites have got reduced pollution. The main source for NO_2 is car traffic. The reduction is therefore more likely to occur because of local traffic regulation than to a general reduction in the car traffic in urban areas. In average the reduction observed in the data file has been around 40%.

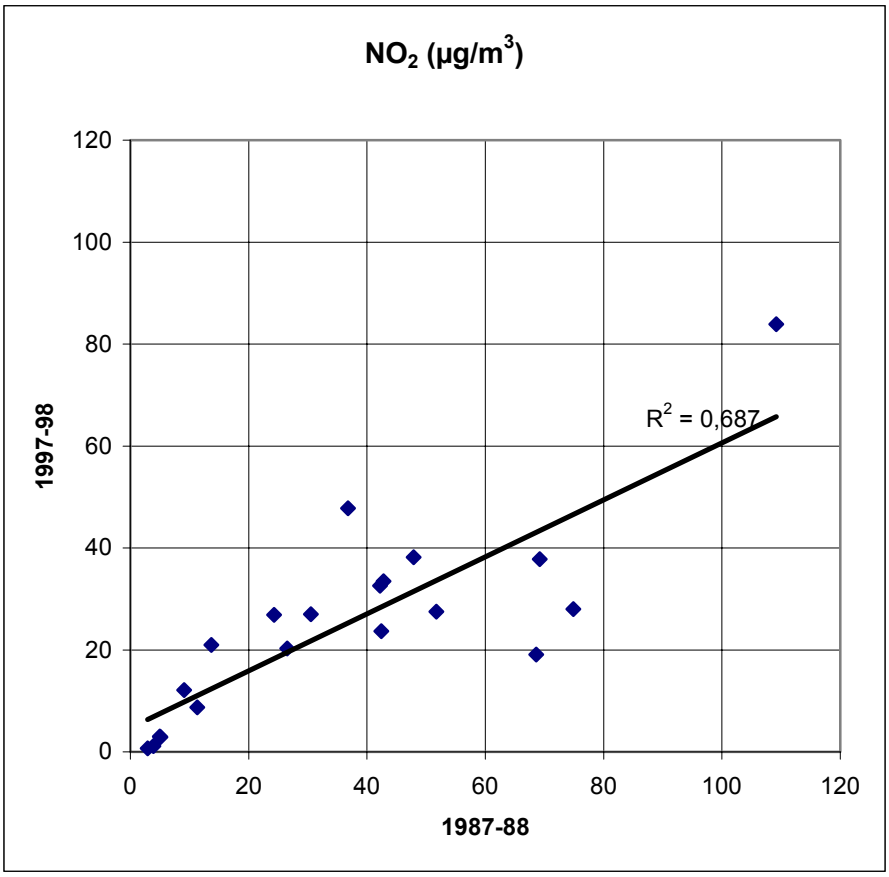

Figure 5: Scatterplot showing the change in the NO_2 concentrations for the same sites from 1987/88 to 1997/98.

Figure 6 shows the O_3 values for the same two periods. The plot shows only small changes in the O_3 levels during the 10 years between the measurements.

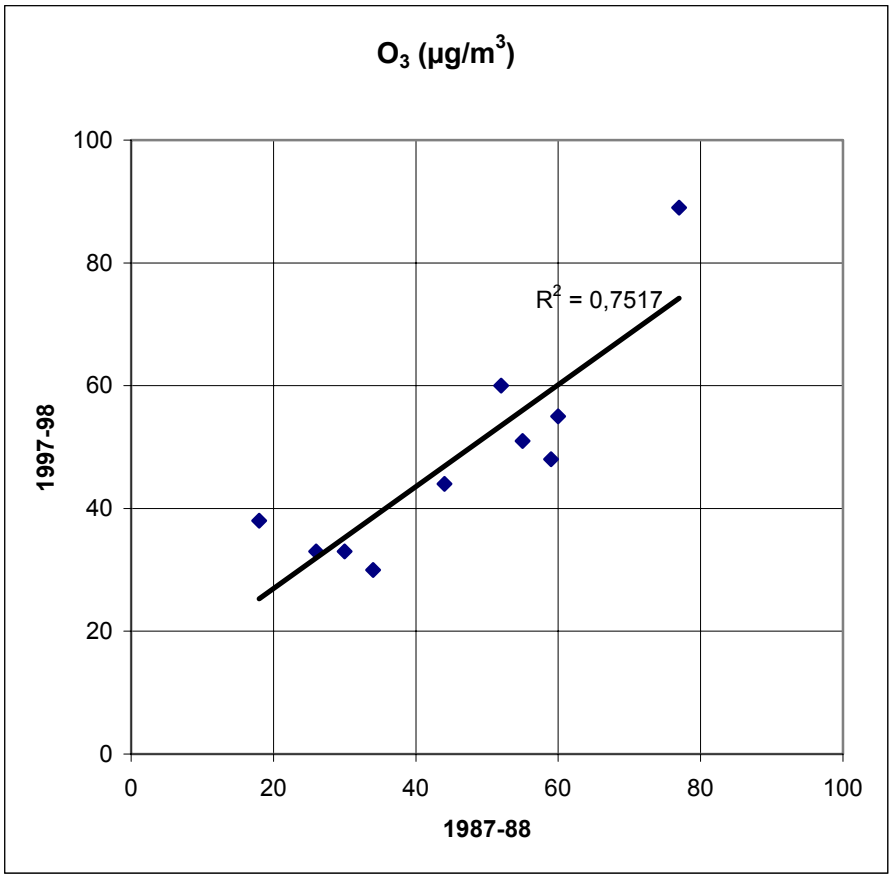

Figure 6: Scatterplot showing the change in the O_3 concentrations for the same sites from 1987/88 to 1997/98.

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Appendix A

Calculated yearly mean values

Earlier reported data from September 1987 to August 1995

New reported data for September 1995 to August 1996
September 1996 to August 1997
November 1997 to October 1998

Tabell A1: Yearly mean values for all parameters and sites for the exposure periods 1987/98

		CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
St	Date	Temp C	Rh %	Tow Timer	Rad. MJ/m2	SO_2 ug/m3	NO_2 ug/m3	O_3 ug/m	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond uS/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		639,3	4,03	3,25	2,76	2,16	45,9		0,55			0,86
1	8889	9,8	75	3181	3229	74,2	32,6		385,6	4,71	7,86	2,76	2,32	121,4		0,97			0,60
1	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
1	9091	8,5	75	2940	3242	61,4	34,9		469,5	4,21	4,95	1,95	1,82	58,1					
1	9192	10,0	71	2789	3645	41,9	20,5		409,3	4,41	10,47	3,00	0,92	47,5					
1	9293	9,1	73	2627	3726	41,2	24,9		684,3	4,15	7,12	3,02	0,79	45,1					
1	9394	9,9	76	3448	3330	40,2	22,5		562,5	5,42	10,04	3,93	2,44	31,5					
1	9495	9,8	77	3529	3268	32,1	23,3		581,1	4,47	8,57	3,43	3,00	43,7					
1	9596	7,7	80			31,5	24,4	55	549,7	4,53	10,40	4,32	1,43	49,1					
1	9697	8,6	78			23,6	21,1	51	474,9	4,53	11,95	1,78	2,20	41,6					
1	9798	9,9	76			15,3	23,7	47	521,9	5,56	11,34	2,14	1,88	27,6					
3	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
3	8889	9,7	73	2273	3199	94,6	39,1		449,6	4,88	11,31	3,73	1,45	72,4		1,50			1,28
3	8990	9,9	72	2056	3229	78,4	36,0		416,6	4,62	9,05	1,29	3,10	90,9		4,72			2,79
3	9091	8,6	73	2252	3194	75,9	35,1		416,4	4,31	10,47	1,09	1,13	119,7					
3	9192	9,9	71	2899	3668	56,9	30,6		502,2	4,39	22,19	4,18	4,12	105,8					
3	9293	8,9	71	2866	3634	49,0	35,6		431,6	4,24	23,35	8,66	0,98	82,7					
3	9394	9,6	73	2869	3233	49,5	28,1		597,4	4,97	14,37	3,82	1,81	40,5					
3	9495	9,7	75	2759	3188	49,2	27,4		512,7	4,25	20,15	4,55	2,30	81,0					
3	9596	7,7	78			41,1	32,8		458,1	4,01	33,08	5,01	2,75	78,9					
3	9697	8,5	73			30,6	34,9	46	430,9	4,41	34,79	5,09	2,47	60,6					
3	9798	9,9	82			23,0	32,6	55	419,8	4,62	34,04	2,78	1,73	44,6					

Table A1: cont.

		CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
St	Date	Temp C	Rh %	Tow Timer	Rad. MJ/m2	SO_2 ug/m3	NO_2 ug/m3	O_3 ug/m	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond uS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
5	8788	3,1	78	2810	2396	6,3	5,0	52	801,3	4,53	0,71	0,33	0,26	19,1	0,35	0,05	0,15	0,02	0,04
5	8889	4,0	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
5	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
5	9091	2,9	80	3012	2367	1,8	5,6	51	543,5	4,55	0,57	0,28	0,24	18,0	0,33	0,16	0,10	0,03	0,13
5	9192	4,2	78	3240	2354	0,8	2,0	66	698,4	4,58	0,51	0,29	0,31	16,4	0,25	0,23	0,12	0,04	0,07
5	9293	3,4	81	2994	2325	0,9	2,0	60	609,7	4,70	0,36	0,22	0,17	12,5	0,18	0,13	0,10	0,02	0,04
5	9394	1,7	80	2340	2485	1,3	4,0	58	506,0	4,55	0,43	0,28	0,15	15,6	0,19	0,12	0,11	0,02	0,05
5	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	0,10	0,08	0,02	0,06
5	9596	1,9	79			1,0	x4.5	58	578,2	4,62	0,38	0,25	0,16	13,4	0,22	0,08	0,08	0,02	0,05
5	9697	3,2	76			0,6	x1.3	60	617,7	4,69	0,28	0,21	0,21	11,9	0,13	0,11	0,06	0,02	0,05
5	9798	2,7	80			0,9	3,0	60	741,8	4,74	0,25	0,21	0,15	10,7	0,14	0,08	0,07	0,02	0,09
6	8788	6,3	78	3453	2553	20,7	30,5		673,1	4,41	2,27	0,93	2,12	36,4					
6	8889	6,7	78	3813	2648	17,4	27,4		691,0	4,42	2,63	1,08	2,11	39,2					
6	8990	6,8	80	4017	2656	15,3	38,9		665,6	4,26	2,03	0,82	1,97	44,0					
6	9091	5,8	81	3820	2550	18,2	38,3		636,9	4,28	2,54	0,98	2,33	42,2					
6	9192	6,9	80	4080	2574	6,0	41,2		621,5	4,51	1,86	0,83	2,08	35,3					
6	9293	6,2	78	3360	2522	4,8	39,4		702,4	4,66	0,87	0,83	0,68	19,9					
6	9394	4,7	76	2268	2665	6,8	36,8		508,8	4,47	0,72	0,67	0,65	29,1					
6	9495	6,6	76	3288	2597	5,5	30,4		649,2	4,86	1,90	0,51	0,91	17,3					
6	9596	4,5	78			6,3	34,8	x52	534,6	x4.30	x1.20	x0.40	x1.30						
6	9697	6,5	74			5,2	27,4	43	521,0										
6	9798					x4.5	x27.0	x22											

Table A1: cont.

		CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
St	Date	Temp C	Rh %	Tow Timer	Rad. MJ/m2	SO_2 ug/m3	NO_2 ug/m3	O_3 ug/m	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond uS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
7	8788	9,3	80	4561	3004	13,7	11,3	59	630,6	4,26	1,59	0,82	1,01	42,0	0,92	0,47	0,56	0,10	0,13
7	8889	10,0	81	4867	3107	11,4	13,0	69	448,4	4,35	1,47	0,86	1,42	39,4	0,95	0,65	0,72	0,16	0,18
7	8990	10,2	80	4390	3138	11,0	11,6	64	499,7	4,45	1,35	1,12	1,66	37,9	0,94	0,80	0,67	0,18	0,19
7	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
7	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
7	9293	8,9	81	4382	3069	8,2	10,9	57	624,4	4,47	1,01	0,71	1,10	28,0	0,75	0,54	0,52	0,13	0,14
7	9394	8,9	82	4827	3092	7,8	9,3	55	743,2	4,50	1,04	0,68	1,43	29,7	0,68	0,70	0,55	0,14	0,15
7	9495	9,5	81	4676	3137	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
7	9596	7,6	82			5,9	9,1	52	420,7	4,70	0,81	0,69	0,63	23,5	0,79	0,29	0,39	0,09	0,36
7	9697	8,9	82			2,9	9,2	51	614,8	4,79	0,74	0,63	0,71	20,9	0,69	0,33	0,43	0,09	0,11
7	9798	9,1	83			2,1	8,7	48	785,7	5,04	0,64	0,57	0,73	17,6	0,60	0,37	0,49	0,14	0,12
9	8788	10,8	77	4220	3048	24,5	42,8	30	782,9	4,54	1,43		1,49	40,2					
9	8889	11,2	78	4754	3118	25,7	49,9	27	686,0	4,54	1,43		1,49	40,2					
9	8990	11,7	80	4940	3184	20,3	44,4	33	697,6	4,44	1,75	0,74	1,75	39,0	1,11	1,41	0,92	0,18	0,26
9	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
9	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
9	9293	10,7	79	4437	3156	16,3	37,3	34	619,1	4,54	0,82	0,33	1,31	61,0	0,90	1,22	1,13	0,19	0,39
9	9394	10,7	82	5393	3100	13,6	35,6	34	839,1	4,74	1,23	0,73	1,40	28,8	0,75	0,72	1,43	0,06	0,22
9	9495	11,4	81	5210	3161	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
9	9596	9,4	78			12,8	36,4	27	595,0	x4.40	x1.81	x0.92	x2.21	x41.6	x2.08	x1.24	x0.90	x0.00	x0.20
9	9697	10,0	78			10,5	35,4	32	781,3										
9	9798	10,9	80			8,3	33,5	33	930,0										

Table A1: cont.

		CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
St	Date	Temp C	Rh %	Tow Timer	Rad. MJ/m2	SO_2 ug/m3	NO_2 ug/m3	O_3 ug/m	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond uS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
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	12,0	76	4107	3266	48,5	46,4		696,6	4,60	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	53,0	46,8	27	619,4	4,30	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	38,0	34	912,9	4,48	1,68	0,54	1,72	35,1	0,95	0,88	1,36	0,07	0,12
10	9596	9,7	78			33,8	38,4	28	661,2	4,89	1,47	0,80	1,10	29,4	1,64	0,57	0,64	0,08	0,20
10	9697	10,5	79			29,4	39,5	30	805,8	4,85	1,29	0,67	1,55	25,5	1,09	0,84	0,55	0,10	0,10
10	9798	11,5	81			24,6	38,2	30	1044,3	x4.75	x1.01	x0.56	x1.30	x22.3	x0.69	x0.68	x0.52	x0.10	x0.08
13	8788	15,4	66	1013	+4163	29,4	69,2	26	591,4	4,60				23,0					
13	8889	16,1	62	1611	3761	44,9	69,5	27	509,3	4,68				23,0					
13	8990	17,4	65	2267	+4163	38,5	62,5	23	463,3	4,74				23,0					
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	+602,0	4,75				23,0					
13	9293	17,9	60	1672	4820	6,8	33,1	12	+602,0	4,75				23,0					
13	9394	19,5	67	1759	3910	14,4	28,5	9	969,0	5,06				18,2					
13	9495	18,4	68	2234	+4163	5,8	30,4	11	+602,0	5,68				15,9					
13	9596																		
13	9697																		
13	9798	20,7	64			3,7	37,8	33											

Table A1: cont.

		CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
St	Date	Temp C	Rh %	Tow Timer	Rad. MJ/m2	SO_2 ug/m3	NO_2 ug/m3	O_3 ug/m	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond uS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
14	8788	14,6	71	3578		8,3	13,7	34	650,2	4,94	0,80	0,04	1,30	20,7		0,48			0,06
14	8889	14,0	70	2996		8,3	13,7	34	674,2	4,80	1,01	0,10	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	721,0	5,05	0,86	0,15	2,62	32,9		2,22	2,00	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	5,30	0,53	0,14	2,23	14,0		0,15	0,53	0,30	0,06
14	9394	15,2	74	3930		4,7	11,1	15	717,3	4,82	0,56	0,23	2,87	32,0		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					
14	9596					x28.1		x22											
14	9697																		
14	9798	14,5	74			5,2	21,0	30											
15	8788	15,3	72	3548	4782	72,2	109,2	18	1124,7	4,22	13,20	3,88	4,82	39,2					
15	8889	14,9	79	3458	4782	82,7	99,1	16	1003,7	4,50	8,60	5,41	2,71	57,3	1,51	1,86	4,50	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	110,0	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					
15	9596					x12.2	x88.8	x11											
15	9697					*14.6	*82.9	*47											
15	9798	14,5	69			15,4	83,9	38	1076,6										

Table A1: cont.

		CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
St	Date	Temp C	Rh %	Tow Timer	Rad. MJ/m2	SO_2 ug/m3	NO_2 ug/m3	O_3 ug/m	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond uS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
16	9798	13,5	83			7,4				x6.10									
16	8788	14,9	77	3616	+4663	21,1	40,9	21	714,0	5,02	3,70	0,89	3,58	56,6					
16	8889	14,7	82	4530	+4663	25,7	40,7	29	535,8	4,90	4,69	1,13	4,32	72,0					
16	8990	13,5	79	4148	+4663	20,2	51,0	31	488,0	5,24	3,70	1,10	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			511,0	6,49	2,86	1,07	4,53	50,7					
16	9293	13,2	86	6019	+4663	11,0			399,6	6,36	3,58	1,52	4,90	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		2,10	5,97	0,90	3,23
16	9596					x3.0													
16	9697																		
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	0,70	1,86	38,1	0,53	0,91	1,58	0,17	0,14
21	9091	7,0	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		614,0	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	6,0	53,4		440,1	4,81	1,39	0,57	2,10	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	4,80	0,98	0,59	1,49	27,0	0,70	0,91	0,90	0,11	0,28
21	9495	7,5	69	2827	2618	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
21	9596	5,3	75				*38.5												
21	9697	6,8	76				42,3												
21	9798	6,5	78			4,0	27,5	35		5,20	0,85	0,55	0,87	20,7	0,68	0,51	0,97	0,11	0,36

Table A1: cont.

		CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
St	Date	Temp C	Rh %	Tow Timer	Rad. MJ/m2	SO_2 ug/m3	NO_2 ug/m3	O_3 ug/m	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond uS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
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	4,0	53	1160,6	4,26	1,07	0,70	2,47	39,9	0,69	1,40	0,20	0,18	0,20
23	8990	7,4	77	4193	2785	0,9	3,1	54	1762,2	4,38	0,87	0,56	2,88	35,2	0,50	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	1272,0	4,35	0,83	0,54	2,07	32,5	0,45	1,15	0,10	0,14	0,08
23	9293	5,9	75	3341	2818	0,7	1,8	58	1188,6	4,43	0,84	0,53	4,00	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	0,60	1,96	32,3	0,57	1,05	0,13	0,12	0,07
23	9495	6,4	76	3779	2811	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
23	9596	4,4	84			0,8	2,5	58	1227,9	4,44	0,63	0,49	1,33	26,6	0,43	0,79	0,10	0,10	0,07
23	9697	5,6	75			0,4	2,0	56	1182,2	4,51	0,61	0,46	2,85	27,8	0,42	1,51	0,11	0,19	0,10
23	9798	5,9	79			0,2	1,1	55	1744,4	4,50	0,61	0,47	1,50	25,5	0,43	0,83	0,11	0,10	0,08
24	8788	7,6	78	3959	2614	16,8	26,5	44	531,0	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	412,0	4,28	1,16	0,45	0,49	32,0	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	0,90	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	0,20	0,20	0,04	0,02
24	9192	8,6	70	2945	2678	5,7	28,1	45	496,0	4,58	0,80	0,42	0,54	25,8	3,32	0,25	0,18	0,04	0,03
24	9293	7,0	70	2580	2679	5,7	25,2	43	577,0	4,37	0,66	0,37	0,40	31,2	0,32	0,25	0,11	0,04	0,03
24	9394	6,7	70	2171	2741	5,4	25,0	49	392,4	4,49	0,65	0,35	0,67	22,1	0,30	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	0,24	0,20	0,22	0,06	0,06
24	9596	5,4	72			*4.6	22,8	48	415,0	4,67	0,57	0,37	0,42	17,1	0,40	0,19	0,16	0,03	0,04
24	9697	7,4	68			3,3	22,9	50	556,0	4,61	0,55	0,39	0,53	18,2	0,36	0,28	0,14	0,04	0,04
24	9798	6,7	76			2,6	20,3	44	463,0	4,63	0,54	0,38	0,48	17,1	0,41	0,25	0,14	0,04	1,33

Table A1: cont.

		CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
St	Date	Temp C	Rh %	Tow Timer	Rad. MJ/m2	SO_2 ug/m3	NO_2 ug/m3	O_3 ug/m	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond uS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
26	8788	6,0	83	4534	2700	3,3	5,1	55	542,7	4,27	1,30	0,60	0,54	32,6	0,71	0,40	0,27	0,08	0,11
26	8889	6,9	77	3407	2786	1,9	4,5	61	377,0	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	2,0	4,8	59	342,3	4,37	1,02	0,56	0,63	32,6	0,52	0,45	0,20	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	0,50	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	6,0	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	490,0	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
26	9596	4,8	86			1,4	3,2	64	318,5	4,64	0,60	0,35	0,43	17,1	0,41	0,25	0,16	0,05	0,12
26	9697	6,5	83			0,8	3,0	65	409,4	4,59	0,49	0,36	0,64	16,9	0,30	0,32	0,19	0,07	0,08
26	9798	5,8	87			0,6	2,9	51	479,2	4,59	0,41	0,37	0,57	17,3	0,32	0,20	0,24	0,06	0,10
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	5,20	67,0	0,91	2,24	1,85	0,30	0,18
27	8990	11,1	81	5510	+3059	15,5	33,0		308,2	4,20	1,67	0,47	3,34	42,9	0,55	1,33	1,29	0,24	0,13
27	9091	10,0	87	6310	+3059	20,2	28,3		206,3	4,30	2,14	0,81	4,62	67,4	0,98	2,15	1,76	0,42	0,48
27	9192	11,0	86	5839	+3059	20,4	29,9		404,1	4,47	1,50	0,55	3,40	45,6	0,74	1,29	1,20	0,27	0,46
27	9293	9,6	82	5894	3087	17,8	21,2		530,0	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	5,60	5,41	2,51	4,72	50,0	0,90	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	0,80	1,62	1,97	0,27	0,31
27	9596																		
27	9697																		
27	9798					*8.4	*19.1	*51											

Table A1: cont.

		CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
St	Date	Temp C	Rh %	Tow Timer	Rad. MJ/m2	SO_2 ug/m3	NO_2 ug/m3	O_3 ug/m	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond uS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
31	8788	14,1	66	2762	4754	18,4	24,3	26	398,0	5,26	1,43	0,33	0,61	26,5	0,75	0,84	1,71	0,23	0,15
31	8889	15,0	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	0,10
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	0,10
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	15,0	72	3164	5098	7,6	29,6		339,4	6,40	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
31	9596					x5.7	x14.6			x6.54	x1.51	x1.68	x0.95	x48.5	x0.42	x0.70	x4.06	x0.40	x0.41
31	9697	14,8	67			11,4	*23.7			5,46	1,00	0,42	0,72	21,2	0,41	0,43	1,46	0,13	0,24
31	9798					x4.8	x26.9			x5.83	x0.77	x0.26	x1.05	x12.5	x0.24	x0.28	x0.59	x0.08	x0.04
33	8788	14,0	64	2275	4662	3,3	9,1	+77	785,0	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	0,10	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	6,20	0,60	0,20	0,72	11,3	0,24	0,74	1,21	0,12	0,14
33	9091	13,9	56	945	4839	6,0	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	0,70	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	24,0	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	468,0	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	0,80	20,8	0,45	0,38	0,48	0,09	0,11
33	9596					x3.9	x11.0	x78		x6.81	x1.06	x0.77	x1.05	x20.2	x0.33	x0.84	x0.95	x0.14	x0.07
33	9697	14,0	61			1,1	8,4	88		5,05	0,32	0,16	0,59	9,7	0,12	0,38	0,38	0,07	0,10
33	9798					1,6	12,1	89		5,76	0,57	0,27	0,89	10,7	0,23	0,33	0,36	0,06	0,06

Table A1: cont.

		CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
St	Date	Temp C	Rh %	Tow Timer	Rad. MJ/m2	SO_2 ug/m3	NO_2 ug/m3	O_3 ug/m	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond uS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
34	8788	5,5	73	2084	2804	19,2	74,9		575,4	6,18	1,44	0,06	1,30	28,8	1,15				
34	8889	7,0	75	2682	2808	25,5	69,5		612,7	4,89	3,09	0,15	0,53	45,8	0,80				
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	6,0	75	2589	2774	26,0	53,2		801,8	6,12	2,35	0,15	0,43	38,5	0,35				
34	9192	7,2	72	1960	2809	28,0	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	4,0	74	1817	2811	18,9	31,5		745,0	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	0,20	0,85	31,9	0,67				
34	9596																		
34	9697																		
34	9798	5,5	74			*31.5	28,0	42											
35	8788	5,5	83	4092	2598	0,9	2,9		447,8	4,66	1,11	0,30	0,61	17,2	0,28	0,39	0,88		
35	8889	6,9	80	3609	2707	0,3	3,8		588,5	4,50	0,87	0,30	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	0,20	0,55	0,51	0,08	0,42
35	9091	5,5	83	4272	2621				564,0	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	+0,20	+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	+0,20	+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	+0,20	+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	+0,20	+0,45	+0,67	+0,06	+0,34
35	9596	4,1	79			1,1	0,8	x65	516,4	5,62	2,65	0,37	0,96	24,8	0,28	0,31	2,72	0,09	0,21
35	9697	6,0	79			0,8	0,6	57	587,8	4,95	2,77	0,44	0,97	22,5	0,20	0,46	1,37	0,10	0,27
35	9798	5,3	82			*0.5	0,7	58		5,16	1,64	0,24	0,78	19,4	0,24	0,31	1,90	0,19	0,18

Table A1: cont.

		CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
St	Date	Temp C	Rh %	Tow Timer	Rad. MJ/m2	SO_2 ug/m3	NO_2 ug/m3	O_3 ug/m	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond uS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
36	8788	12,1	64	1517		6,8	36,8		972,0	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	9,80	1,71	4,15	62,0	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	1,90	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	0,63	4,08	1,97	0,36	0,50
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	18,0	62	1072		16,1	35,0	37	544,9	5,83	17,10	6,47	11,87	82,6	1,40	4,96	7,95	0,67	0,35
36	9394	18,3	65	1278		10,0	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	35,0	49	442,6	5,75	10,47	3,81	27,19	57,9	0,77	6,13	4,59	0,54	0,80
36	9596					x5.7	x29.9	x25		x5.06	x6.87	x1.25	x8.72	x44.7	x0.90	x4.28	x3.72	x0.45	x1.49
36	9697																		
36	9798					x14.3	x47.8	x7		x5.85	x9.28	x2.81	x11.48	x73.2	x0.95	x6.63	x5.80	x0.75	x0.36
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	2,0	60	953,6	4,33	0,81	0,51	0,12	24,8	0,36	0,06	0,18		
37	8990	5,0	79	3431	3790	3,0	2,0	64	1103,0	4,38	0,76	0,53	0,11	25,0	0,34	0,04	0,22		
37	9091	5,9	79	3566	3822	2,8	1,0	52	1057,0	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	983,0	4,40	0,69	0,46	0,13	23,4	0,32	0,06	0,13		
37	9293	4,3	80	3302	3633	2,1		56	1080,0	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		
37	9596	3,4	75			3,4	7,5	60	1228,0	4,44	0,58	0,50	0,09	20,4	0,37	0,05	0,21	x12.97	
37	9697	4,0	76			x2.5	x9.2	x44											
37	9798																		

Table A1: cont.

		CLIMATE				GASES			PRECIPITATION					PREC.-OPTION					
St	Date	Temp C	Rh %	Tow Timer	Rad. MJ/m2	SO_2 ug/m3	NO_2 ug/m3	O_3 ug/m	mm	pH	SO_4-S mg/l	NO_3-N mg/l	Cl mg/l	Cond uS/cm	NH_4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
40	9798	13,4	67			14,2	70,0	31	571,6	5,71	1,81	0,72	2,47	43,7	0,90	1,29	3,91	0,16	0,50
41	9697	8,4	76			16,3	52,9	21			x6.07	x5.32	x2.34		x6.58	x1.13	x1.11	x0.19	x0.50
41	9798	10,1	77			10,9	37,7	47	486,2		6,98	4,34	2,09		3,93	1,51	3,89	0,24	2,22
42	9798			no	data														
43	9798			no	data														
44	9596	-1,1				7,4	1,9	45	353,9	4,72	0,48	0,10	1,76	18,7	0,17	1,00	0,16	0,16	0,07
44	9697	-0,1				9,6	2,4		298,2	4,70	0,62	0,20	1,90	19,6	0,30	0,97	0,24	0,18	0,10
44	9798	-1,8				7,5	0,9	54	344	4,77	0,57	0,12	1,87	20,7	0,23	1,02	0,18	0,15	0,11
45	9697	6,2	77			1,5	7,5	85		5,04	0,30	0,22	0,19	9,6	0,28	0,12	0,21	0,02	0,04
45	9798	6,9	77			1,3	7,7	86	1052,9	4,99	0,27	0,21	0,18	9,4	0,24	0,15	0,31	0,03	0,03
46	9798					*6.3	*45.3	*36											
47	9798	17,4	61			0,6	21,7	48		*5.77									
49	9798	11,8	75			23,2	52,8	29		x5.07	x1.46	x0.47	x3.86	x35.6					

* 6-9 months with data
x <6 months with data
+ generated yearly values

Appendix B

The reported monthly and yearly values for September 1995 to October 1998

September 1995 - August 1996

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (01) Prague-Letnany Czech Republic

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	13.3	82.	453.	13.7	26.6		64.3	6.35	21.00	2.20	1.00	52.6
Oct95	11.2	83.	301.	19.9	31.1		7.8	5.33	24.70	11.70	1.00	102.2
Nov95	1.5	91.	87.	27.3	28.8		17.4	5.12	18.10	6.80	1.00	54.5
Dec95	-1.6	93.	66.	45.1	19.0		28.4	4.38	6.20	5.10	1.00	42.6
Jan96	-3.6	87.	85.	60.0	39.7	21.	7.2	4.40	11.50		1.00	42.6
Feb96	-2.9	83.	165.	58.4	29.8	45.	17.1	4.15	46.00	8.50	3.50	85.5
Mar96	0.6	82.	247.	42.1	22.8	55.	13.9	3.90	24.70	14.50	7.10	
Apr96	9.4	65.	450.	25.5	22.6	66.	16.0	4.20	15.60	9.90	6.20	105.9
May96	13.0	77.	414.	22.8	15.9	58.	126.0	4.34	5.50	3.90	1.00	92.2
Jun96	17.2	69.	535.	21.1	17.1	74.	90.0	4.62	7.80	3.80	1.00	24.0
Jul96	17.0	69.	469.	25.3	19.5	62.	105.7	5.22	6.80	3.30	1.00	13.7
Aug96	17.6	75.	661.	17.4	19.6	59.	55.9	4.43	1.90	2.90	1.50	22.8
Mean	7.7	80.	3933.	31.5	24.4	55.	549.7	4.53	10.40	4.32	1.43	49.1

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95										
Oct95										
Nov95										
Dec95										
Jan96							69.0			
Feb96							76.0			
Mar96							61.0			
Apr96							57.0			
May96							30.0			
Jun96							30.0			
Jul96							20.0			
Aug96							25.0			
Mean							31.4			

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (03) Kopisty Czech Republic

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	13.6	76.			33.5		3.7	5.15	40.10	7.20	1.00	75.2
Oct95	10.5	85.	5.	39.8	41.5		14.1	3.91	86.80	9.60	7.10	174.2
Nov95	1.5	90.	2.	42.1	34.5		35.2	4.10	39.90	5.50	6.20	74.7
Dec95	-2.2	89.	1.	48.0	34.4		22.7	4.08	47.80	3.90	7.10	73.9
Jan96	-3.7	87.	2.	59.5	38.4		4.8		121.80	3.50	8.80	
Feb96	-1.4	79.	4.	34.9	33.8		15.4	4.26	105.30	12.30	11.40	
Mar96	0.7	80.	8.	48.1	36.9		19.8	4.00	64.60	20.50	6.20	118.7
Apr96	9.4	64.	13.	34.5	27.5		17.6	3.98	62.60	8.50	4.80	166.1
May96	12.9	74.	13.	54.4	26.9		92.9	4.17	16.60	3.90	1.00	67.5
Jun96	16.9	70.	14.	36.4	28.6		85.8	4.25	33.80	3.40	1.30	62.0
Jul96	17.0	70.	15.	30.1	26.2		54.9	3.71	22.10	3.10	1.00	87.6
Aug96	17.7	75.	12.	23.9	30.9		91.2	3.89	11.50	2.90	1.00	63.9
Mean	7.7	78.		41.1	32.8		458.1	4.01	33.08	5.01	2.75	78.9

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95										
Oct95							31.0			
Nov95							31.0			
Dec95							19.0			
Jan96							28.0			
Feb96							23.0			
Mar96							41.0			
Apr96										
May96										
Jun96										
Jul96										
Aug96										
Mean							29.1			

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (05) Ahtari Finland

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	8.5			0.2	3.6	52.	37.7	4.69	0.30	0.21	0.31	11.0
Oct95	6.0	87.		0.4	3.3	57.	55.5	4.42	0.60	0.37	0.20	20.0
Nov95	-4.6	87.	36.	0.6	3.6	59.	33.0	4.60	0.25	0.27	0.40	13.0
Dec95	-11.5	88.	14.	1.2	7.6	43.	18.1	4.45	0.31	0.38	0.24	17.0
Jan96	-7.0	91.	19.	1.8		45.	9.4	4.05	1.09	0.71	0.29	41.0
Feb96	-13.5	82.	79.	3.9		53.	29.8	4.26	0.94	0.53	0.35	31.0
Mar96	-5.0	78.	263.	2.5		76.	26.9	4.55	0.39	0.40	0.14	16.0
Apr96	1.3	71.	384.	0.7		80.	28.2	4.55	0.54	0.44	0.13	18.0
May96	7.4	64.	542.	0.4		73.	74.8	4.77	0.42	0.20	0.06	11.0
Jun96	12.4	68.	530.	0.3		65.	76.5	4.76	0.32	0.20	0.11	11.0
Jul96	13.3	77.	475.	0.1		51.	120.5	4.78	0.25	0.14	0.09	9.0
Aug96	15.2	74.	539.	0.3		48.	67.8	4.96	0.20	0.11	0.08	7.0
Mean	1.9	79.		1.0	4.5	58.	578.2	4.62	0.38	0.25	0.16	13.4

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95	0.14	0.19	0.04	0.03	0.06					
Oct95	0.34	0.09	0.05	0.05	0.06					
Nov95	0.09	0.23	0.09	0.03	0.06					
Dec95	0.12	0.09	0.06	0.02	0.05					
Jan96	0.29	0.12	0.22	0.03	0.08					
Feb96	0.47	0.18	0.10	0.03	0.06					
Mar96	0.18	0.11	0.18	0.02	0.04					
Apr96	0.44	0.08	0.09	0.02	0.04					
May96	0.31	0.03	0.12	0.02	0.04					
Jun96	0.24	0.02	0.05	0.01	0.09					
Jul96	0.11	0.05	0.05	0.01	0.03					
Aug96	0.11	0.03	0.07	0.01	0.03					
Mean	0.22	0.08	0.08	0.02	0.05					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (06) Helsinki-Vallila Finland

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	11.9	82.		4.0	30.0		67.1	4.30	1.20	0.40	1.30	
Oct95	8.7	84.		3.0	32.0		49.0					
Nov95	-1.1	87.	43.	4.0	36.0		66.6					
Dec95	-6.3	84.	22.	7.0	46.0		13.9					
Jan96	-5.2	87.	30.	9.0	34.0		5.0					
Feb96	-9.2	79.	107.	13.0	37.0		25.0					
Mar96	-3.1	80.	273.	12.0	55.0		25.0					
Apr96	2.7	73.	424.	5.0	41.0		34.0					
May96	8.6	69.	515.	4.0	24.0	60.	68.0					
Jun96	13.3	67.	572.	4.0	24.0	53.	58.0					
Jul96	15.0	74.	506.	4.0	22.0	49.	122.0					
Aug96	18.1	72.	562.	7.0	36.0	48.	1.0					
Mean	4.5	78.		6.3	34.8	52.	534.6	4.30	1.20	0.40	1.30	

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95										
Oct95										
Nov95										
Dec95										
Jan96										
Feb96										
Mar96										
Apr96										
May96										
Jun96										
Jul96										
Aug96										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (07) Waldhof-Langenbrugge Germany

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	13.7	83.	230.	2.3	7.7	60.	65.1	4.70	0.88	0.50	1.66	24.9
Oct95	11.9	87.	141.	3.3	10.5	34.	11.5	4.70	0.93	0.90	0.72	25.8
Nov95	3.6	93.	74.	5.3	13.9	24.	36.1	4.90	0.45	0.38	0.84	14.6
Dec95	-2.8	94.	45.	11.6	16.0	25.	17.0	4.40	0.81	0.52	0.33	25.1
Jan96	-3.7	90.	68.	18.9	13.2	38.	0.8					
Feb96	-2.7	89.	125.	14.2	11.8	46.	34.1	4.50	0.81	0.62	0.62	27.0
Mar96	0.9	80.	275.	8.4	7.3	79.	10.4	5.20	1.14	1.27	0.90	30.0
Apr96	8.4	71.	408.	2.8	6.5		27.6	5.10	0.88	1.03	0.13	23.6
May96	11.6	79.	330.	1.1	5.5	68.	90.4	4.60	0.73	0.74	0.24	23.6
Jun96	15.5	75.	461.	0.9	5.2	69.	20.7	4.90	0.85	0.83	0.81	24.5
Jul96	16.5	75.		0.9	5.3	63.	61.2	5.00	0.80	0.72	0.43	20.4
Aug96	18.4	74.	440.	1.5	5.7	70.	45.8	4.60	1.02	0.72	0.30	26.6
Mean	7.6	82.		5.9	9.1	52.	420.7	4.70	0.81	0.69	0.63	23.5

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95	0.59	0.79	0.52	0.15	1.24		19.4		0.7	
Oct95	0.67	0.33	0.57	0.16	1.30		29.7		0.9	
Nov95	0.38	0.43	0.24	0.10	0.44		26.1		1.0	
Dec95	0.43	0.16	0.20	0.04	0.41		35.4		1.8	
Jan96							41.0		1.9	
Feb96	0.46	0.34	0.30	0.11	0.13		32.2		1.4	
Mar96	2.05	0.37	0.41	0.16	0.06		48.5		2.8	
Apr96	1.33	0.05	0.43	0.06	0.11		41.3		1.6	
May96	0.74	0.12	0.32	0.06	0.10		23.2		0.8	
Jun96	1.18	0.14	0.44	0.10	0.16		23.1		0.8	
Jul96	0.95	0.21	0.38	0.08	0.11		19.3		0.8	
Aug96	0.88	0.10	0.49	0.07	0.09		25.9		0.8	
Mean	0.79	0.29	0.39	0.09	0.36		25.8		1.0	

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (09) Langenfeld-Reusrath Germany

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	14.0	83.		9.7	32.8	22.	82.9	4.40	1.81	0.92	2.21	41.6
Oct95	13.4	87.		9.7	39.4	13.	28.6					
Nov95	6.1	84.		12.7	42.5	8.	32.7					
Dec95	0.6	85.		16.1	35.9	7.	55.5					
Jan96	1.0	79.	75.	26.6	33.7	11.	5.7					
Feb96	0.8	82.	82.	21.7	46.2	19.	45.4					
Mar96	3.9	75.	229.	18.9	40.7	27.	18.2					
Apr96	10.3	61.	389.	10.2	41.9	43.	7.7					
May96	11.6	76.	314.	7.0	31.8	39.	71.7					
Jun96	16.3	71.	422.	8.0	34.2	52.	34.1					
Jul96	17.0	72.	433.	6.5	26.8	44.	56.2					
Aug96	17.8	76.	340.	6.8	30.8	39.	156.3					
Mean	9.4	78.		12.8	36.4	27.	595.0	4.40	1.81	0.92	2.21	41.6

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95	2.08	1.24	0.90	0.00	0.20					
Oct95										
Nov95										
Dec95										
Jan96										
Feb96										
Mar96										
Apr96										
May96										
Jun96										
Jul96										
Aug96										
Mean	2.08	1.24	0.90	0.00	0.20					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (10) Bottrop Germany

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	14.4	82.		23.0	34.7	24.	92.1	4.59	1.34	0.56	1.35	27.6
Oct95	13.6	85.		26.8	40.9	13.	21.2					
Nov95	6.6	82.		36.6	46.3	10.	25.0					
Dec95	0.3	87.		50.5	42.7	6.	46.3					
Jan96	0.7	80.	77.	64.3	44.7	7.	39.4	4.60	1.09	0.43	0.77	23.7
Feb96	0.8	83.	70.	51.1	51.9	20.	64.9	4.40	1.69	0.78	2.56	40.7
Mar96	4.1	77.	238.	47.0	43.7	27.	12.7	4.90	5.47	2.50	3.54	84.4
Apr96	10.8	64.	392.	28.8	40.1	44.	10.7	6.60	4.32	2.57	2.52	74.3
May96	12.3	75.	318.	21.5	26.6	43.	74.7	5.00	1.59	1.04	0.54	28.2
Jun96	16.9	71.	406.	18.2	26.5	54.	29.6	6.40	1.76	0.89	1.21	30.9
Jul96	17.6	72.	431.	18.5	27.2	44.	90.6	5.80	1.49	0.83	0.89	26.6
Aug96	18.4	75.	368.	19.3	34.9	41.	154.0	5.60	0.90	0.63	0.48	21.3
Mean	9.7	78.		33.8	38.4	28.	661.2	4.89	1.47	0.80	1.10	29.4

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95	1.72	0.55	0.50	0.00	0.00					
Oct95										
Nov95										
Dec95										
Jan96	0.59	0.33	0.35	0.05	0.05					
Feb96	0.89	1.22	0.57	0.15	0.05					
Mar96	5.10	1.94	2.21	0.37	0.16					
Apr96	4.04	1.30	4.53	0.34	1.25					
May96	1.72	0.30	0.70	0.05	0.07					
Jun96	1.86	0.75	1.10	0.17	0.40					
Jul96	1.81	0.55	0.54	0.08	0.20					
Aug96	1.54	0.33	0.37	0.06	0.37					
Mean	1.64	0.57	0.64	0.08	0.20					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (13) Rome Italy

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95												
Oct95												
Nov95												
Dec95												
Jan96												
Feb96												
Mar96												
Apr96												
May96												
Jun96												
Jul96												
Aug96												
Mean												

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95										
Oct95										
Nov95										
Dec95										
Jan96										
Feb96										
Mar96										
Apr96										
May96										
Jun96										
Jul96										
Aug96										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (14) Casaccia Italy

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N				
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Sep95				27.8		30.						
Oct95				29.4		22.						
Nov95				27.2		14.						
Dec95												
Jan96												
Feb96												
Mar96												
Apr96												
May96												
Jun96												
Jul96												
Aug96												
Mean				28.1		22.						

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Sep95										
Oct95										
Nov95										
Dec95										
Jan96										
Feb96										
Mar96										
Apr96										
May96										
Jun96										
Jul96										
Aug96										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (15) Milan Italy

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N				
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Sep95	17.5	70.		6.7	79.1	7.	136.0					
Oct95	15.9	77.		17.8	98.6	15.	16.0					
Nov95												
Dec95												
Jan96												
Feb96												
Mar96												
Apr96												
May96												
Jun96												
Jul96												
Aug96												
Mean	16.7	74.		12.2	88.8	11.						

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Sep95										
Oct95										
Nov95										
Dec95										
Jan96										
Feb96										
Mar96										
Apr96										
May96										
Jun96										
Jul96										
Aug96										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (16) Venice Italy

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Sep95	17.2	84.		3.0								
Oct95												
Nov95												
Dec95												
Jan96												
Feb96												
Mar96												
Apr96												
May96												
Jun96												
Jul96												
Aug96												
Mean	17.2	84.		3.0								

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Sep95										
Oct95										
Nov95										
Dec95										
Jan96										
Feb96										
Mar96										
Apr96										
May96										
Jun96										
Jul96										
Aug96										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (21) Oslo Norway

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Sep95	12.0	71.			21.2							
Oct95	8.8	72.			32.4							
Nov95	-0.6	76.			36.7							
Dec95	-6.5	84.			47.2							
Jan96	-5.1	83.			41.8							
Feb96	-6.3	74.			51.2							
Mar96	-0.7	70.			42.0							
Apr96	4.8	74.			35.7							
May96	8.5	74.										
Jun96	14.2	74.										
Jul96	15.9	71.										
Aug96	18.3	73.										
Mean	5.3	75.	2600.		38.5							

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Sep95										
Oct95										
Nov95										
Dec95										
Jan96										
Feb96										
Mar96										
Apr96										
May96										
Jun96										
Jul96										
Aug96										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (23) Birkenes Norway

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	10.1	88.		0.3	1.6	50.	320.0	4.63	0.36	0.22	0.88	15.8
Oct95	8.1	90.		0.6	3.8	43.	162.4	4.33	0.66	0.77	1.90	35.6
Nov95	0.7	86.		0.5	3.9	40.	38.0	4.31	0.66	0.83	2.47	41.3
Dec95	-6.3	90.		0.3	1.9	45.	37.6	4.44	0.43	0.42	2.21	27.6
Jan96	-4.8	91.		1.7	5.2	43.	103.2	4.08	1.39	0.73	1.92	51.5
Feb96	-5.2	87.		1.5	2.8	64.	115.3	4.31	0.80	0.74	3.44	41.3
Mar96	-2.3	82.		1.5	1.9	84.	25.9	4.51	1.25	0.63	2.36	34.6
Apr96	4.2	79.		1.3	2.2	79.	16.4	4.14	1.61	1.10	1.07	50.4
May96	7.5	81.		0.3	1.5	69.	142.1	4.53	0.63	0.51	0.46	21.4
Jun96	12.7	79.		0.7	1.8	59.	39.3	4.45	0.57	0.49	0.32	23.0
Jul96	14.1	76.		0.5	1.1	61.	39.4	4.49	0.57	0.46	0.64	20.8
Aug96	13.9	78.		0.9	2.9	64.	188.3	4.73	0.40	0.26	0.46	13.9
Mean	4.4	84.	2710.	0.8	2.5	58.	1227.9	4.44	0.63	0.49	1.33	26.6

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95	0.17	0.52	0.05	0.06	0.04					
Oct95	0.66	1.11	0.10	0.13	0.07					
Nov95	0.64	1.48	0.16	0.17	0.14					
Dec95	0.21	1.28	0.10	0.16	0.07					
Jan96	0.69	1.08	0.08	0.13	0.10					
Feb96	0.51	2.11	0.14	0.27	0.12					
Mar96	0.45	1.66	0.75	0.22	0.09					
Apr96	1.05	0.59	0.34	0.08	0.09					
May96	0.55	0.29	0.11	0.03	0.06					
Jun96	0.45	0.22	0.08	0.02	0.09					
Jul96	0.41	0.40	0.04	0.05	0.07					
Aug96	0.31	0.25	0.08	0.03	0.04					
Mean	0.43	0.79	0.10	0.10	0.07					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (24) Stockholm South Sweden

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	12.1	78.	153.		19.9	38.	91.0	5.02	0.37	0.16	0.30	10.0
Oct95	9.6	77.	67.	3.2	18.8	36.	32.0	4.47	0.64	0.46	0.39	22.0
Nov95	0.4	90.	19.	4.0	23.3	26.	27.0	4.76	0.38	0.29	1.54	18.0
Dec95	-9.2	81.	12.	4.1	28.7	25.	5.0	4.51	0.84	0.69	1.32	32.0
Jan96	-3.3	87.	10.	6.1	27.3	24.	5.0	3.98	2.77	1.09	1.44	73.0
Feb96	-7.7	74.	31.	8.1	36.0	30.	7.0	4.32	1.31	1.24	2.37	49.0
Mar96	-0.4	74.	112.	4.9	28.0	68.	12.0	4.84	0.65	0.51	0.60	20.0
Apr96	6.1	55.	163.	3.8	24.8	78.	19.0	4.37	1.30	1.05	0.56	38.0
May96	8.3	63.	183.	2.2	18.7	63.	47.0	4.72	0.59	0.29	0.13	14.0
Jun96	14.7	59.	206.		15.5	69.	20.0	4.91	0.66	0.45	0.23	16.0
Jul96	15.6	65.	189.		14.4	58.	138.0	4.67	0.46	0.31	0.22	14.0
Aug96	18.9	67.	184.		17.9	67.	12.0	4.65	0.78	0.55	0.26	22.0
Mean	5.4	72.	1329.	4.6	22.8	48.	415.0	4.67	0.57	0.37	0.42	17.1

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95	0.21	0.17	0.10	0.03	0.03					
Oct95	0.33	0.25	0.28	0.06	0.04					
Nov95	0.45	0.34	0.17	0.05	0.01					
Dec95	0.61	0.51	0.21	0.05	0.01					
Jan96	1.20	0.63	0.58	0.10	0.10					
Feb96	0.89	1.32	0.59	0.09	0.74					
Mar96	0.47	0.32	0.35	0.04	0.02					
Apr96	1.23	0.21	0.27	0.01	0.04					
May96	0.40	0.03	0.13	0.02	0.04					
Jun96	0.53	0.22	0.16	0.03	0.07					
Jul96	0.31	0.12	0.11	0.02	0.02					
Aug96	0.73	0.15	0.23	0.04	0.06					
Mean	0.40	0.19	0.16	0.03	0.04					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (26) Aspvreten Sweden

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	11.4	88.	90.	0.5	1.8	48.	114.4	4.60	0.58	0.27	0.61	18.0
Oct95	8.5	88.	57.	1.4	2.6	51.	11.7	4.48	0.80	0.62	0.59	25.2
Nov95	-0.3	90.	22.	1.7	5.9	42.	7.5	4.82	0.25	0.28	0.30	8.9
Dec95	-6.1	92.	13.	0.9	5.7	49.	2.4	4.51	0.37	0.66	0.86	21.7
Jan96	-3.5	95.	12.	2.5	4.8	52.	5.9	4.04	2.20	0.61	0.55	55.4
Feb96	-6.9	86.	27.	2.8	5.5	60.	15.7	4.31	0.82	0.80	0.80	26.6
Mar96	-1.3	88.	79.	2.2	2.6	78.	9.1	4.89	0.49	0.43	0.44	13.2
Apr96	3.5	78.	183.	1.7	2.5	89.	2.9	4.30	2.42	1.59	0.78	53.5
May96	7.5	80.	173.	0.7	2.4	77.	20.8	4.70	0.46	0.32	0.12	14.5
Jun96	13.3	78.	232.	0.6	1.7	79.	7.4	4.64	0.94	0.41	0.60	15.3
Jul96	14.2	82.	219.	0.5	1.8	66.	70.7	4.77	0.36	0.29	0.17	11.8
Aug96	17.7	85.	203.	0.8	1.7	74.	50.0	5.05	0.69	0.30	0.27	14.1
Mean	4.8	86.	1310.	1.4	3.2	64.	318.5	4.64	0.60	0.35	0.43	17.1

	O P T I O N										
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95	0.30	0.31	0.11	0.05	0.05					
Oct95	0.53	0.31	0.41	0.07	0.20					
Nov95	0.14	0.29	0.05	0.03	0.14					
Dec95	0.13	0.63	0.22	0.08	0.29					
Jan96	0.76	0.42	0.23	0.07	0.11					
Feb96	0.46	0.55	0.26	0.07	0.14					
Mar96	0.35	0.32	0.24	0.05	0.05					
Apr96	2.22	0.37	0.76	0.13	0.21					
May96	0.38	0.08	0.12	0.03	0.06					
Jun96	0.49	0.27	0.33	0.10	0.65					
Jul96	0.33	0.14	0.08	0.03	0.15					
Aug96	0.62	0.14	0.24	0.05	0.16					
Mean	0.41	0.25	0.16	0.05	0.12					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (27) Lincoln Cathedral United Kingdom

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95												
Oct95												
Nov95												
Dec95												
Jan96												
Feb96												
Mar96												
Apr96												
May96												
Jun96												
Jul96												
Aug96												
Mean												

	O P T I O N										
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95										
Oct95										
Nov95										
Dec95										
Jan96										
Feb96										
Mar96										
Apr96										
May96										
Jun96										
Jul96										
Aug96										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (31) Madrid Spain

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	18.8	71.	271.	3.7	7.5		19.2	6.71	1.32	1.57	0.99	51.4
Oct95	15.4	80.	244.	7.7	21.6		7.2	6.27	2.01	1.96	0.85	40.9
Nov95												
Dec95												
Jan96												
Feb96												
Mar96												
Apr96												
May96												
Jun96												
Jul96												
Aug96												
Mean	17.1	76.		5.7	14.6			6.54	1.51	1.68	0.95	48.5

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95	0.50	0.63	4.22	0.40	0.39					
Oct95	0.20	0.88	3.62	0.40	0.46					
Nov95										
Dec95										
Jan96										
Feb96										
Mar96										
Apr96										
May96										
Jun96										
Jul96										
Aug96										
Mean	0.42	0.70	4.06	0.40	0.41					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (33) Toledo Spain

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	17.0	52.	279.	4.6	11.1	79.	16.3	6.85	0.76	0.43	0.76	19.7
Oct95	17.3	54.	227.	3.2	10.9	78.	1.9	6.57	3.61	3.68	3.55	24.9
Nov95												
Dec95												
Jan96												
Feb96												
Mar96												
Apr96												
May96												
Jun96												
Jul96												
Aug96												
Mean	17.1	53.		3.9	11.0	78.		6.81	1.06	0.77	1.05	20.2

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95	0.32	0.79	0.93	0.13	0.06					
Oct95	0.40	1.24	1.11	0.21	0.19					
Nov95										
Dec95										
Jan96										
Feb96										
Mar96										
Apr96										
May96										
Jun96										
Jul96										
Aug96										
Mean	0.33	0.84	0.95	0.14	0.07					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (34) Moscow Russia

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95												
Oct95												
Nov95												
Dec95												
Jan96												
Feb96												
Mar96												
Apr96												
May96												
Jun96												
Jul96												
Aug96												
Mean												

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95										
Oct95										
Nov95										
Dec95										
Jan96										
Feb96										
Mar96										
Apr96										
May96										
Jun96										
Jul96										
Aug96										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (35) Lahemaa Estonia

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	11.0	73.		0.4	0.4		81.3	6.62	2.03	0.17	0.48	33.2
Oct95	9.0	82.		1.1	2.0		62.7	6.40	2.44	0.32	1.91	36.5
Nov95	0.0	82.		1.2	1.1		77.4	6.20	3.36	0.65	1.06	26.6
Dec95	-5.8	83.		1.3	0.9		21.6	4.87	5.41	0.42	3.89	22.5
Jan96	-6.8	86.		0.8	0.8		3.7	6.55				65.0
Feb96	-10.5	81.		1.7	0.8		30.9	5.51	2.39	0.47	1.18	32.0
Mar96	-3.5	74.		1.6	0.8		16.6	5.85	3.52	0.46	0.36	17.8
Apr96	3.0	75.		1.3	0.5		10.2	5.37	0.34	0.79	0.01	54.0
May96	7.8	78.		0.9	0.5		60.1	5.95	2.92	0.35	0.92	17.9
Jun96	13.2	75.		1.0	0.5		48.3	5.34	2.88	0.47	0.47	16.5
Jul96	14.8	79.		0.7	0.3		92.0	5.37	2.16	0.22	0.46	13.2
Aug96	16.9	77.		1.3	0.4	65.	11.6	6.45	1.24	0.03	0.52	11.3
Mean	4.1	79.		1.1	0.8	65.	516.4	5.62	2.65	0.37	0.96	24.8

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95	0.11	0.33	4.32	0.09	0.13					
Oct95	0.15	0.48	6.57	0.12	0.40					
Nov95	0.22	0.41	4.14	0.06	0.10					
Dec95	1.11	0.35	0.67	0.08	0.20					
Jan96										
Feb96	0.16	0.50	2.58	0.10	0.20					
Mar96	0.52	0.12	0.65	0.07	0.20					
Apr96	0.97	0.10	7.69	0.10	0.25					
May96	0.47	0.20	0.96	0.13	0.32					
Jun96	0.32	0.24	0.31	0.09	0.24					
Jul96	0.15	0.19	0.50	0.08	0.18					
Aug96	0.11	0.35	0.71	0.07	0.11					
Mean	0.28	0.31	2.72	0.09	0.21					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (36) Lisbon-Jeronimo Portugal

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	23.0	56.		3.7	19.8	45.	41.6	6.30	13.56	0.00	6.47	94.5
Oct95	21.3	62.		7.2	39.0	27.	50.0	5.80	22.39	0.94	6.48	43.0
Nov95	19.4	66.		4.8	28.1	17.	133.3	5.46	4.83	1.77	8.87	46.4
Dec95	16.2	68.		7.1	32.7	12.	256.9	4.85	3.82	1.25	9.45	36.1
Jan96												
Feb96												
Mar96												
Apr96												
May96												
Jun96												
Jul96												
Aug96												
Mean	20.0	63.		5.7	29.9	25.		5.06	6.87	1.25	8.72	44.7

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95		4.20	14.90	0.40	1.00					
Oct95	0.36	4.10	4.50	0.40	0.90					
Nov95	1.62	4.49	3.71	0.49	4.11					
Dec95	0.63	4.22	1.76	0.44	0.33					
Jan96										
Feb96										
Mar96										
Apr96										
May96										
Jun96										
Jul96										
Aug96										
Mean	0.90	4.28	3.72	0.45	1.49					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (37) Dorset Canada

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	10.8	81.	184.	5.0	5.2	48.	108.0	4.34	0.93	0.50	0.05	28.0
Oct95	7.6	80.	113.	6.7	7.9	54.	116.0	4.77	0.37	0.23	0.02	12.4
Nov95	-2.8	83.	46.	5.7	9.2	50.	185.0	4.52	0.38	0.38	0.07	17.6
Dec95	-10.3	81.	62.	1.6	8.8	52.	116.0	4.46	0.28	0.61	0.15	17.0
Jan96	-11.9	75.	82.	5.5	11.2	54.	18.0	3.93	0.98	1.76	0.34	57.0
Feb96	-10.3	74.	104.	5.5	9.7	60.	132.0	4.25	0.47	0.62	0.16	25.0
Mar96	-5.2	61.	174.	5.2	11.0	78.	92.0	4.29	0.67	0.66	0.17	25.6
Apr96	1.7	70.	111.	3.3	6.4	72.	141.0	4.92	0.72	0.54	0.07	15.0
May96	9.7	59.	230.	1.0	5.1	78.	70.0	4.75	0.68	0.43	0.11	15.0
Jun96	16.8	78.	160.	0.6	5.5	64.	68.0	4.22	0.92	0.66	0.08	30.0
Jul96	16.8	77.	246.	0.5	4.9	52.	124.0	4.52	0.45	0.30	0.02	15.6
Aug96	17.5	80.	257.	0.8	5.6	52.	58.0	4.29	0.92	0.49	0.06	26.0
Mean	3.4	75.	1769.	3.4	7.5	60.	1228.0	4.44	0.58	0.50	0.09	20.4

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95	0.41	0.07	0.17	21.30						
Oct95	0.15	0.02	0.07	16.20						
Nov95	0.16	0.05	0.04	8.40						
Dec95	0.28	0.07	0.24	7.20						
Jan96	1.06	0.13	0.20	26.20						
Feb96	0.34	0.07	0.10							
Mar96	0.30	0.10	0.43							
Apr96	0.62	0.03	0.56							
May96	0.66	0.06	0.31							
Jun96	0.72	0.02	0.15							
Jul96	0.22	0.01	0.11							
Aug96	0.48	0.02	0.24							
Mean	0.37	0.05	0.21	12.97						

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (44) Svanvik Norway

	M A N D A T O R Y										
	C L I M A T E			G A S E S			P R E C I P I T A T I O N				
Date	Temp C	Rh %	Sun MJ/m2	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
Sep95	6.4			2.8	1.2	28.	16.7	4.36	1.11	0.21	0.39	26.1
Oct95	-1.0			6.8	2.9	32.	63.6	4.54	0.57	0.08	1.95	22.3
Nov95	-10.9			16.6	3.9	39.	44.3	5.13	0.16	0.05	3.92	21.3
Dec95	-14.4			1.0	3.0	40.	9.3	5.39	0.18	0.08	4.41	20.8
Jan96	-6.8			0.6	2.7	47.	8.2	5.44	0.51	0.20	7.69	35.7
Feb96	-10.6			3.9	2.1	56.	37.5	5.01	0.26	0.11	2.44	15.7
Mar96	-5.5			11.8	1.9	67.	5.7	4.80	0.83	0.26	3.06	44.1
Apr96	-3.5			13.0	1.0	66.	10.0	4.73	0.82	0.16	3.13	26.1
May96	0.9			3.6	0.7	56.	7.9	5.35	0.80	0.19	2.10	21.4
Jun96	7.6			14.2	0.9	46.	56.7	4.69	0.47	0.06	0.31	12.3
Jul96	11.7			9.1	1.1	34.	57.0	4.62	0.49	0.08	0.57	14.2
Aug96	12.8			4.9	2.0	31.	37.0	4.75	0.51	0.12	0.25	14.9
Mean	-1.1			7.4	1.9	45.	353.9	4.72	0.48	0.10	1.76	18.7

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep95	0.26	0.21	0.22	0.07	0.06					
Oct95	0.11	1.07	0.11	0.14	0.10					
Nov95	0.13	2.15	0.14	0.29	0.09					
Dec95	0.23	2.48	0.17	0.33	0.11					
Jan96	0.46	4.57	0.23	0.56	0.17					
Feb96	0.18	1.40	0.08	0.20	0.05					
Mar96	0.57	1.58	0.24	0.29	0.06					
Apr96	0.26	1.90	0.17	0.27	0.09					
May96	0.26	1.16	0.92	0.63	0.06					
Jun96	0.08	0.21	0.06	0.04	0.03					
Jul96	0.07	0.32	0.14	0.07	0.05					
Aug96	0.40	0.18	0.33	0.08	0.10					
Mean	0.17	1.00	0.16	0.16	0.07					

September 1996 - August 1997

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (01) Prague-Letnany Czech Republic

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96	10.9	81.	116.	14.9	21.3	40.	39.5	4.29	11.80	2.90	2.00	47.5
Oct96	9.8	85.	203.	19.9	26.1	28.	28.0	5.40	20.20	1.00	3.50	27.0
Nov96	5.2	86.	104.	17.8	25.2	25.	22.2	5.20	14.70	1.30	3.30	23.0
Dec96	-4.1	92.	80.	62.4	31.5	20.	16.9	3.90	18.90	4.90	2.40	41.0
Jan97	-3.8	91.	75.	49.8	23.2	23.	16.6	3.50		6.50	9.20	
Feb97	3.6	76.	175.	23.9	21.1	51.	24.4	5.70	21.60		3.80	34.0
Mar97	5.3	78.	518.	23.3	27.1	51.	37.1	5.50	10.70	1.30	1.60	25.0
Apr97	6.2	69.	815.	23.3	18.3	66.	27.0	6.60	29.60	1.20	4.50	124.0
May97	14.5	66.	999.	15.1	23.6	82.	14.6	4.90	23.20	1.00	4.00	75.0
Jun97	17.3	69.	999.	12.4	18.7	77.	59.2	4.70	7.60	1.80	1.10	32.0
Jul97	18.1	75.	999.	10.3	8.6	73.	111.3	4.70	6.80	1.00	1.00	36.0
Aug97	19.9	70.	999.	10.3	8.6	75.	78.1	5.10	6.80	1.60	1.20	40.0
Mean	8.6	78.	6082.	23.6	21.1	51.	474.9	4.53	11.95	1.78	2.20	41.6

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96							20.0			
Oct96							48.0			
Nov96							30.0			
Dec96										
Jan97										
Feb97										
Mar97										
Apr97										
May97										
Jun97										
Jul97										
Aug97										
Mean							31.2			

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (03) Kopisty Czech Republic

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96	11.2	79.	7.	37.3	28.6		28.6	4.60	40.50	2.10	3.90	73.0
Oct96	9.4	84.	4.	20.3	29.6	15.	43.5	4.20	25.60	5.00	3.20	41.0
Nov96	4.5	85.	2.	23.3	40.5	13.	28.1	4.10	36.00	5.80	1.70	44.0
Dec96	-4.5	57.	2.	33.6	38.7	26.	30.2	4.30	31.30	4.20	1.80	36.0
Jan97	-4.0	88.	2.	70.1	41.3	21.	7.7	4.10	37.90	6.50	3.20	65.0
Feb97	3.0	77.	5.	28.6	44.0	45.	23.1	4.40	30.00	8.40	3.00	46.0
Mar97	5.2	75.	8.	29.6	45.8	64.	49.0	4.50	23.90	4.60	2.80	37.0
Apr97	6.5	65.	9.	34.9	34.0	87.	37.7	5.00	36.40	1.30	2.70	157.0
May97	14.6	63.	14.	27.8	26.6	70.	25.2	5.10	61.50	7.30	6.30	
Jun97	17.3	66.	13.	7.1	27.8	60.	45.9	4.30	28.20	6.70	2.10	35.0
Jul97	18.6	71.	12.	31.0	28.4	50.	92.5	4.50	37.00	4.80	1.00	69.0
Aug97	20.1	70.	12.	23.3	33.2	59.	19.4	4.60	49.80	8.90	1.50	56.0
Mean	8.5	73.	90.	30.6	34.9	46.	430.9	4.41	34.79	5.09	2.47	60.6

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96										
Oct96										
Nov96										
Dec96										
Jan97										
Feb97										
Mar97										
Apr97										
May97										
Jun97										
Jul97										
Aug97										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (05) Ahtari Finland

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96	6.5	82.	223.	1.2		39.	23.9	4.71	0.41	0.18	0.20	12.0
Oct96	4.7	86.	84.	0.4		41.	49.0	4.52	0.41	0.31	0.29	17.0
Nov96	0.6	92.	21.	0.4		45.	114.0	4.69	0.22	0.20	0.17	11.0
Dec96	-8.3	87.	10.	1.0		44.	52.1	4.73	0.14	0.20	0.24	10.0
Jan97	-8.2	82.	27.	0.5		55.	33.3	4.72	0.16	0.21	0.46	11.0
Feb97	-6.6	81.	77.	1.5		61.	32.9	4.52	0.34	0.37	0.34	18.0
Mar97	-3.2	74.	234.	0.7		73.	52.6	4.61	0.40	0.33	0.35	16.0
Apr97	-1.1	68.	407.	0.4		78.	63.4	4.79	0.23	0.18	0.23	10.0
May97	6.1	64.	531.	0.3		73.	23.2	4.61	0.50	0.31	0.18	17.0
Jun97	15.0	62.	639.	0.4	1.3	77.	65.8	4.76	0.24	0.09	0.06	8.0
Jul97	17.5	69.	623.	0.3	1.3	66.	67.3	4.79	0.21	0.14	0.05	9.0
Aug97	15.6	70.	513.	0.3	1.3	63.	40.2	4.73	0.36	0.19	0.16	12.0
Mean	3.2	76.	3389.	0.6	1.3	60.	617.7	4.69	0.28	0.21	0.21	11.9

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96	0.18	0.09	0.06	0.03	0.08					
Oct96	0.18	0.17	0.04	0.02	0.05					
Nov96	0.09	0.09	0.03	0.01	0.04					
Dec96	0.05	0.11	0.04	0.02	0.04					
Jan97	0.06	0.25	0.07	0.04	0.05					
Feb97	0.18	0.20	0.05	0.03	0.06					
Mar97	0.22	0.20	0.10	0.04	0.06					
Apr97	0.12	0.12	0.05	0.02	0.04					
May97	0.33	0.11	0.20	0.03	0.05					
Jun97	0.04	0.03	0.08	0.02	0.06					
Jul97	0.10	0.02	0.06	0.01	0.03					
Aug97	0.19	0.09	0.06	0.02	0.06					
Mean	0.13	0.11	0.06	0.02	0.05					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (06) Helsinki-Vallila Finland

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96	9.8	74.	279.	4.0	28.0	32.	28.0					
Oct96	7.7	84.	100.	7.0	28.0	30.	63.0					
Nov96	4.4	85.	32.	7.0	23.0	28.	160.0					
Dec96	-3.9	83.	20.	6.0	27.0	26.	39.0					
Jan97	-3.2	82.	38.	4.0	33.0	33.	44.0					
Feb97	-2.5	79.	89.	8.0	28.0	42.	45.0					
Mar97	-0.3	71.	252.	7.0	28.0	51.	17.0					
Apr97	2.4	68.	401.	4.0	25.0	60.	27.0					
May97	8.5	62.	590.	4.0	23.0	61.	17.0					
Jun97	16.5	64.	685.	5.0	33.0	53.	44.0					
Jul97	19.2	68.	611.	3.0	23.0	51.	12.0					
Aug97	18.9	69.	564.	3.0	30.0	53.	25.0					
Mean	6.5	74.	3661.	5.2	27.4	43.	521.0					

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96										
Oct96										
Nov96										
Dec96										
Jan97										
Feb97										
Mar97										
Apr97										
May97										
Jun97										
Jul97										
Aug97										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (07) Waldhof-Langenbrugge Germany

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96	11.2	80.	306.	1.5	5.8	45.	25.8	4.50	0.73	0.60	0.92	17.3
Oct96	9.1	90.	174.	2.2	9.7	32.	72.6	4.90	0.59	0.58	0.59	19.4
Nov96	5.2	93.	64.	2.8	12.7	29.	87.8	4.80	0.61	0.56	0.70	19.2
Dec96	-2.1	92.	52.	9.4	15.6	22.	10.6	4.70	0.72	0.96	1.29	26.5
Jan97	-2.3	92.	77.	10.5	18.9	27.	5.0	4.20	1.45	1.73	0.93	53.9
Feb97	4.7	85.	110.	1.9	11.9	50.	65.0	5.40	0.63	0.44	1.71	18.0
Mar97	5.4	83.	251.	1.6	8.6	57.	26.2	5.50	0.89	1.04	1.76	26.6
Apr97	6.5	72.	396.	1.3	6.5	69.	29.5	5.40	0.66	0.63	1.33	20.7
May97	12.9	77.	515.	0.9	5.3	67.	95.0	4.50	1.14	0.81	0.48	29.5
Jun97	16.7	70.	603.	1.3	4.8	75.	55.3	5.10	0.75	0.51	0.30	15.2
Jul97	18.3	77.	581.	0.5	4.4	62.	118.9	4.80	0.60	0.55	0.23	17.7
Aug97	21.2	72.	541.	1.5	6.0	73.	23.1	4.70	0.81	0.70	0.23	22.8
Mean	8.9	82.	3670.	2.9	9.2	51.	614.8	4.79	0.74	0.63	0.71	20.9

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96	0.78	0.54	0.46	0.14	0.10		17.9		0.5	
Oct96	0.49	0.29	0.35	0.09	0.06		24.3		0.7	
Nov96	0.49	0.31	0.31	0.08	0.08		20.4		0.6	
Dec96	0.50	0.38	0.83	0.17	0.15		27.5		1.2	
Jan97	0.96	0.22	1.53	0.17	0.19		37.7		1.8	
Feb97	0.58	0.89	0.37	0.13	0.07		19.7		0.5	
Mar97	1.32	0.92	0.67	0.18	0.12		31.5		0.9	
Apr97	0.93	0.69	0.41	0.12	0.10		27.0		0.5	
May97	1.06	0.17	0.51	0.10	0.27		21.9		0.5	
Jun97	0.53	0.08	0.68	0.09	0.10		16.4		0.5	
Jul97	0.58	0.09	0.27	0.05	0.05		17.9		0.5	
Aug97	0.73	0.09	0.39	0.06	0.11		30.9		0.9	
Mean	0.69	0.33	0.43	0.09	0.11		21.5		0.6	

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (09) Langenfeld-Reusrath Germany

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96	12.5	81.	231.	6.9	30.5	18.	34.2					
Oct96	10.6	84.	137.	7.8	34.5	15.	96.2					
Nov96	5.8	88.	47.	10.0	34.3	14.	69.1					
Dec96	0.2	85.	48.	15.8	38.3	6.	40.5					
Jan97	-0.8	84.	45.	29.2	55.8		7.0					
Feb97	6.3	78.	90.	10.3	35.6		98.1					
Mar97	8.4	80.	204.	9.7	36.5	28.	29.6					
Apr97	8.1	68.	337.	10.0	35.7	45.	62.5					
May97	13.3	72.	418.	6.6	27.8	52.	99.0					
Jun97	16.5	70.	426.	6.4	28.8	55.	141.3					
Jul97	17.7	77.	394.	6.7	30.7	42.	47.9					
Aug97	21.1	71.	418.	6.4	36.3	50.	55.9					
Mean	10.0	78.	2795.	10.5	35.4	32.	781.3					

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96										
Oct96										
Nov96										
Dec96										
Jan97										
Feb97										
Mar97										
Apr97										
May97										
Jun97										
Jul97										
Aug97										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (10) Bottrop Germany

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96	12.9	81.	243.	21.3	31.9	22.	47.6	5.30	1.20	0.64	3.83	30.6
Oct96	11.1	84.	160.	28.8	42.7	14.	69.2	4.70	0.92	0.43	1.20	20.9
Nov96	6.4	89.	48.	32.3	42.8	13.	98.5	4.60	1.03	0.50	1.69	25.1
Dec96	0.7	83.	40.	46.5	47.9	9.	50.2	4.50	1.26	0.63	1.91	30.8
Jan97	-0.8	86.	51.	62.2	62.4	7.	12.0	4.50	2.66	0.94	2.25	45.7
Feb97	7.1	78.	101.	33.9	43.9	26.	135.3	4.90	1.02	0.40	2.09	22.2
Mar97	8.8	81.	209.	25.9	41.8	26.	42.8	4.80	3.19	1.47	3.57	53.5
Apr97	8.6	70.	341.	25.3	36.8	43.	43.5	5.00	1.67	0.90	2.49	32.6
May97	13.8	73.	453.	21.8	29.7	48.	90.4	5.10	0.95	0.50	0.46	15.9
Jun97	17.4	70.	486.	20.3	31.3	56.	74.8	4.80	1.15	0.63	0.45	20.1
Jul97	18.7	77.	398.	15.5	28.3	45.	84.8	5.40	1.53	1.10	0.64	26.2
Aug97	21.7	73.	417.	19.3	35.1	51.	56.7	5.60	1.25	0.78	0.30	21.1
Mean	10.5	79.	2947.	29.4	39.5	30.	805.8	4.85	1.29	0.67	1.55	25.5

	O P T I O N										
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96	1.07	2.14	0.52	0.28	0.18					
Oct96	0.55	0.62	0.36	0.05	0.12					
Nov96	0.63	0.94	0.38	0.10	0.06					
Dec96	0.78	1.06	0.46	0.10	0.06					
Jan97	1.56	1.19	1.39	0.12	0.19					
Feb97	0.77	1.10	0.43	0.10	0.10					
Mar97	3.09	1.82	0.94	0.27	0.09					
Apr97	1.27	1.39	0.90	0.26	0.12					
May97	0.66	0.24	0.40	0.03	0.09					
Jun97	0.83	0.27	0.68	0.03	0.05					
Jul97	1.98	0.38	0.55	0.03	0.09					
Aug97	1.50	0.24	0.74	0.06	0.23					
Mean	1.09	0.84	0.55	0.10	0.10					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (13) Rome Italy

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96												
Oct96												
Nov96												
Dec96												
Jan97												
Feb97												
Mar97												
Apr97												
May97												
Jun97												
Jul97												
Aug97												
Mean												

	O P T I O N										
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96										
Oct96										
Nov96										
Dec96										
Jan97										
Feb97										
Mar97										
Apr97										
May97										
Jun97										
Jul97										
Aug97										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (14) Casaccia Italy

	M A N D A T O R Y											
	C L I M A T E		G A S E S			P R E C I P I T A T I O N						
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Sep96												
Oct96												
Nov96												
Dec96												
Jan97												
Feb97												
Mar97												
Apr97												
May97												
Jun97												
Jul97												
Aug97												
Mean												

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Sep96										
Oct96										
Nov96										
Dec96										
Jan97										
Feb97										
Mar97										
Apr97										
May97										
Jun97										
Jul97										
Aug97										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (15) Milan Italy

	M A N D A T O R Y											
	C L I M A T E		G A S E S			P R E C I P I T A T I O N						
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Sep96												
Oct96												
Nov96												
Dec96												
Jan97	4.5	86.	5.	44.1	118.1	9.	87.1					
Feb97	7.7	69.	9.	29.1	98.8	17.	9.8					
Mar97	13.1	54.	17.	18.3	94.9	44.	0.8					
Apr97	13.2	54.	22.	8.8	74.6	57.	20.4					
May97	18.7	59.	21.	4.4	70.1	60.	9.1					
Jun97	20.6	70.	18.	3.7	76.2	51.	223.8					
Jul97	23.6	59.	24.	5.1	67.7	66.	99.4					
Aug97	24.1	65.	20.	3.2	62.8	74.	115.2					
Mean	15.7	64.		14.6	82.9	47.						

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Sep96										
Oct96										
Nov96										
Dec96										
Jan97							78.1			
Feb97							81.2			
Mar97							72.8			
Apr97							51.3			
May97							42.5			
Jun97							70.9			
Jul97							57.6			
Aug97							55.1			
Mean							65.5			

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (16) Venice Italy

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Sep96												
Oct96												
Nov96												
Dec96												
Jan97												
Feb97												
Mar97												
Apr97												
May97												
Jun97												
Jul97												
Aug97												
Mean												

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Sep96										
Oct96										
Nov96										
Dec96										
Jan97										
Feb97										
Mar97										
Apr97										
May97										
Jun97										
Jul97										
Aug97										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (21) Oslo Norway

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Sep96	10.1	80.										
Oct96	7.6	87.			36.1							
Nov96	0.3	87.			42.5							
Dec96	-4.4	88.										
Jan97	-4.0	87.			53.6							
Feb97	-0.4	79.			49.9							
Mar97	2.3	66.			41.5							
Apr97	5.0	57.			30.2							
May97	9.3	70.										
Jun97	16.2	69.										
Jul97	19.5	67.										
Aug97	20.4	72.										
Mean	6.8	76.	2740.		42.3							

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Sep96										
Oct96										
Nov96										
Dec96										
Jan97										
Feb97										
Mar97										
Apr97										
May97										
Jun97										
Jul97										
Aug97										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (23) Birkenes Norway

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96	7.2	75.		0.2	1.1	39.	103.9	4.50	0.59	0.82	1.20	25.2
Oct96	5.4	86.		0.6	2.3	44.	169.7	4.28	0.92	0.68	2.55	39.0
Nov96	2.4	84.		0.2	2.3	49.	137.1	4.63	0.40	0.25	4.18	27.1
Dec96	-4.9	85.		0.1	1.8	46.	112.4	4.50	0.56	0.39	4.97	34.3
Jan97	-4.8	86.		0.6	4.6	44.	18.9	4.19	1.05	0.95	1.18	41.3
Feb97	0.5	83.		0.7	2.6	66.	241.4	4.60	0.58	0.43	3.91	27.5
Mar97	1.7	74.		0.4	1.9	70.	75.5	4.53	0.74	0.39	6.60	40.7
Apr97	4.2	61.		0.3	1.3	76.	25.6	4.70	0.24	0.18	0.54	13.3
May97	8.6	68.		0.4	1.1	70.	60.9	4.91	0.24	0.31	0.82	11.2
Jun97	14.3	69.		0.6	1.5	67.	100.9	4.58	0.63	0.24	0.55	17.4
Jul97	17.1	68.		0.4	1.5	57.	46.3	4.48	0.57	0.47	0.66	20.2
Aug97	15.7	66.		0.7	2.5	50.	89.6	4.61	0.67	0.56	0.69	21.2
Mean	5.6	75.	2840.	0.4	2.0	56.	1182.2	4.51	0.61	0.46	2.85	27.8

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96	0.80	0.66	0.05	0.07	0.06					
Oct96	0.70	1.52	0.13	0.21	0.08					
Nov96	0.09	2.30	0.13	0.29	0.09					
Dec96	0.19	2.68	0.12	0.33	0.11					
Jan97	0.90	0.61	0.09	0.07	0.11					
Feb97	0.38	1.88	0.10	0.23	0.10					
Mar97	0.35	3.33	0.19	0.40	0.16					
Apr97	0.12	0.30	0.05	0.04	0.05					
May97	0.28	0.48	0.06	0.05	0.08					
Jun97	0.28	0.31	0.13	0.04	0.12					
Jul97	0.40	0.43	0.13	0.04	0.17					
Aug97	0.72	0.46	0.12	0.05	0.07					
Mean	0.42	1.51	0.11	0.19	0.10					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (24) Stockholm South Sweden

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96	10.4	69.	108.	2.6	25.2	40.	41.0	4.80	0.40	0.31	0.80	14.0
Oct96	8.3	77.	42.	2.8	24.7	38.	32.0	4.43	0.66	0.52	0.56	22.0
Nov96	3.5	82.	14.	4.1	26.8	31.	138.0	4.41	0.68	0.51	0.77	26.0
Dec96	-2.6	79.	9.	5.4	28.3	37.	22.0	4.28	0.66	0.69	1.06	29.0
Jan97	-1.7	75.	17.	4.8	32.4	39.	9.0	4.61	0.63	0.51	0.84	20.0
Feb97	0.2	72.	35.	5.0	25.4	53.	37.0	4.68	0.37	0.35	1.09	17.0
Mar97	1.9	60.	104.	3.7	24.9	61.	23.0	4.75	0.96	0.74	1.13	30.0
Apr97	3.7	56.	159.	2.9	20.3	56.	45.0	4.78	0.44	0.29	0.27	13.0
May97	9.0	61.	208.	2.2	15.9	65.	52.0	4.68	0.78	0.34	0.21	17.0
Jun97	16.1	63.	232.	2.6	17.9	62.	114.0	4.87	0.30	0.17	0.09	9.0
Jul97	19.2	60.	243.	2.3	15.0	61.	24.0	4.90	0.24	0.17	0.15	9.0
Aug97	20.7	66.	189.	1.8	17.9	61.	19.0	4.94	0.83	0.67	0.26	20.0
Mean	7.4	68.	1360.	3.3	22.9	50.	556.0	4.61	0.55	0.39	0.53	18.2

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96	0.28	0.39	0.11	0.05	0.03					
Oct96	0.44	0.29	0.13	0.04	0.04					
Nov96	0.37	0.35	0.08	0.05	0.07					
Dec96	0.42	0.51	0.13	0.05	0.04					
Jan97	0.36	0.58	0.36	0.06	0.05					
Feb97	0.33	0.74	0.12	0.07	0.04					
Mar97	0.80	0.87	0.27	0.10	0.07					
Apr97	0.35	0.15	0.15	0.03	0.03					
May97	0.42	0.11	0.35	0.04	0.05					
Jun97	0.18	0.03	0.07	0.01	0.02					
Jul97	0.11	0.09	0.15	0.02	0.02					
Aug97	1.10	0.10	0.21	0.03	0.07					
Mean	0.36	0.28	0.14	0.04	0.04					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (26) Aspvreten Sweden

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96	8.7	87.	119.	0.4	2.1	51.	52.2	4.70	0.30	0.23	0.88	13.6
Oct96	7.5	92.	47.	0.9	3.1	51.	29.3	4.42	0.67	0.56	0.81	25.5
Nov96	3.4	96.	20.	0.8	4.4	51.	69.0	4.47	0.55	0.50	1.01	21.9
Dec96	-3.1	93.	8.	1.1	4.8	57.	31.6	4.34	0.54	0.59	0.65	25.2
Jan97	-2.5	86.	18.	1.0	6.2	56.	3.6	4.41	0.86	0.73	0.42	27.1
Feb97	-0.1	84.	37.	1.1	3.9	65.	15.8	4.66	0.45	0.39	1.17	17.7
Mar97	1.5	73.	110.	0.7	2.4	74.	8.3	4.47	0.99	0.54	4.08	34.1
Apr97	3.0	70.	163.	0.5	1.9	83.	26.5	4.50	0.44	0.41	0.28	16.2
May97	7.5	78.	220.	0.6	1.9	81.	83.4	4.68	0.59	0.30	0.34	15.5
Jun97	14.5	79.	248.	0.8	2.1	73.	51.7	4.89	0.33	0.13	0.12	7.1
Jul97	17.4	74.	269.	0.6	1.5	61.	26.0	5.10	0.33	0.21	0.18	8.5
Aug97	20.3	81.	222.	0.8	1.6	74.	12.0	4.46	0.51	0.51	0.15	14.7
Mean	6.5	83.	1481.	0.8	3.0	65.	409.4	4.59	0.49	0.36	0.64	16.9

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96	0.20	0.49	0.08	0.07	0.06					
Oct96	0.48	0.42	0.22	0.09	0.11					
Nov96	0.36	0.42	0.20	0.09	0.09					
Dec96	0.27	0.35	0.16	0.08	0.09					
Jan97	0.51	0.21	0.43	0.08	0.06					
Feb97	0.22	0.67	0.13	0.12	0.06					
Mar97	0.40	2.66	0.56	0.34	0.18					
Apr97	0.31	0.08	0.13	0.05	0.07					
May97	0.38	0.14	0.21	0.04	0.10					
Jun97	0.13	0.07	0.16	0.03	0.04					
Jul97	0.22	0.09	0.32	0.05	0.06					
Aug97	0.47	0.07	0.16	0.04	0.10					
Mean	0.30	0.32	0.19	0.07	0.08					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (27) Lincoln Cathedral United Kingdom

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96												
Oct96												
Nov96												
Dec96												
Jan97												
Feb97												
Mar97												
Apr97												
May97												
Jun97												
Jul97												
Aug97												
Mean												

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96										
Oct96										
Nov96										
Dec96										
Jan97										
Feb97										
Mar97										
Apr97										
May97										
Jun97										
Jul97										
Aug97										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (31) Madrid Spain

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96												
Oct96	14.6	67.	266.	7.7			11.8	6.84	0.80	0.47	0.50	24.6
Nov96	9.8	73.	166.	6.0			61.0	6.37	0.49	0.23	0.53	15.2
Dec96	7.2	82.	83.	3.5			130.7	5.38	0.77	0.19	0.56	14.3
Jan97	7.2	81.	98.	7.2	29.5		78.1	5.09	1.18	0.31	0.51	20.8
Feb97	9.2	73.	206.	9.5	23.4		0.0					
Mar97	13.1	61.	324.	7.6			0.0					
Apr97	16.0	62.	248.	6.7			29.9	5.76	1.18	0.56	0.40	20.5
May97	17.2	64.	268.	3.2	16.3		35.8	5.66	1.15	0.73	0.94	24.2
Jun97	19.9	61.	297.	4.6	25.6		10.8	6.57	0.91	0.60	0.37	18.2
Jul97	23.8	56.	331.	31.1	20.2		17.1	6.41	2.14	1.56	2.59	47.9
Aug97	24.9	57.	332.	38.5	27.1		15.7	7.00	2.34	1.36	2.33	68.3
Mean	14.8	67.		11.4	23.7			5.46	1.00	0.42	0.72	21.2

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96										
Oct96	0.19	0.28	3.13	0.21	0.28					
Nov96	0.07	0.34	1.37	0.11	0.28					
Dec96	0.17	0.37	1.07	0.08	0.13					
Jan97	0.35	0.29	0.94	0.13	0.19					
Feb97										
Mar97										
Apr97	0.61	0.26	1.35	0.14	0.27					
May97	0.76	0.55	1.11	0.13	0.20					
Jun97	0.43	0.30	1.41	0.12	0.13					
Jul97	1.15	0.81	3.50	0.32	0.73					
Aug97	2.22	1.76	5.33	0.38	0.73					
Mean	0.41	0.43	1.46	0.13	0.24					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (33) Toledo Spain

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96												
Oct96	14.8	68.	244.	2.3	10.8	87.	20.1	5.51	0.38	0.27	0.36	10.6
Nov96	10.3	77.	144.	0.9		78.	72.0	5.30	0.35	0.08	0.79	9.2
Dec96	6.5	83.	54.	0.5	2.3	70.	191.0	4.86	0.20	0.14	0.68	8.6
Jan97	6.0	79.	89.	1.6	10.0	69.	131.0	4.89	0.28	0.07	0.52	6.4
Feb97	10.1	63.	204.	1.0	20.5	79.	0.3	7.05	0.00	0.00	0.00	92.8
Mar97	13.8	39.	304.	0.7	12.8	104.	0.0					
Apr97	13.9	56.	228.	1.8	3.1	97.	34.7	6.53	0.36	0.22	0.26	12.3
May97	15.0	59.	260.	0.5	8.3	93.	62.9	6.37	0.47	0.30	0.36	12.3
Jun97	17.7	57.	279.	0.9	5.0	89.	16.9	5.78	0.43	0.23	0.35	10.2
Jul97	21.7	46.	316.	0.9	7.8	102.	14.1	5.26	0.76	0.38	0.83	20.3
Aug97	23.7	43.	306.	0.9	3.7	100.	8.6	7.21	1.28	0.68	1.36	33.0
Mean	14.0	61.		1.1	8.4	88.		5.05	0.32	0.16	0.59	9.7

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96										
Oct96	0.15	0.27	0.56	0.12	0.22					
Nov96	0.08	0.46	0.30	0.08	0.11					
Dec96	0.09	0.47	0.14	0.06	0.09					
Jan97	0.05	0.22	0.21	0.04	0.05					
Feb97	0.00	0.00	0.00	0.00	0.00					
Mar97										
Apr97	0.31	0.29	0.84	0.07	0.14					
May97	0.28	0.38	0.78	0.10	0.16					
Jun97	0.12	0.30	0.48	0.10	0.06					
Jul97	0.19	0.42	1.09	0.12	0.13					
Aug97	0.30	0.71	2.64	0.29	0.34					
Mean	0.12	0.38	0.38	0.07	0.10					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (34) Moscow Russia

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96												
Oct96												
Nov96												
Dec96												
Jan97												
Feb97												
Mar97												
Apr97												
May97												
Jun97												
Jul97												
Aug97												
Mean												

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96										
Oct96										
Nov96										
Dec96										
Jan97										
Feb97										
Mar97										
Apr97										
May97										
Jun97										
Jul97										
Aug97										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (35) Lahemaa Estonia

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96	9.2	78.		1.0	0.3	48.	67.2	6.52	2.33	0.09	0.98	15.7
Oct96	7.0	85.		0.9	0.6	40.	43.3	5.55	4.16	0.55	0.76	25.0
Nov96	4.0	88.		0.7	0.9	39.	83.0	4.69	4.13	0.45	1.00	21.5
Dec96	-3.1	86.		1.0	0.9	25.	70.3	4.54	1.75	0.47	1.04	25.5
Jan97	-2.7	82.		1.2	1.0		42.0	4.50	2.18	0.82	1.01	27.9
Feb97	-2.2	84.		0.5	0.5		55.0	4.90	2.34	0.79	1.58	23.3
Mar97	-0.3	75.		0.5	0.6		18.0	5.10	4.08	1.28	1.36	32.7
Apr97	2.4	71.		0.7	0.4	102.	41.0	5.10	2.66	0.68	0.70	28.5
May97	7.6	72.		0.7	0.5	78.	26.0	5.40	3.25	0.47	0.64	26.3
Jun97	14.5	76.		0.7	0.5	66.	56.0	6.40	2.22	0.08	0.80	16.0
Jul97	17.3	79.		0.6	0.4	52.	68.0	6.20	2.22	0.06	0.62	20.9
Aug97	18.0	74.		0.7	0.5	60.	18.0	5.60	3.61	0.60	1.57	17.2
Mean	6.0	79.		0.8	0.6	57.	587.8	4.95	2.77	0.44	0.97	22.5

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96	0.06	0.42	1.26	0.14	0.56					
Oct96	0.36	0.49	1.34	0.14	0.31					
Nov96	0.28	0.33	0.20	0.04	0.12					
Dec96	0.19	0.51	0.37	0.07	0.14					
Jan97	0.34	0.59	0.06	0.05	0.20					
Feb97	0.18	0.81	0.40	0.09	0.23					
Mar97	0.46	0.92	0.86	0.11	0.30					
Apr97	0.29	0.35	0.67	0.06	0.17					
May97	0.33	0.22	1.22	0.14	0.16					
Jun97	0.06	0.26	5.37	0.13	0.23					
Jul97	0.05	0.26	2.99	0.14	0.20					
Aug97	0.22	1.08	1.04	0.20	1.31					
Mean	0.20	0.46	1.37	0.10	0.27					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (36) Lisbon-Jeronimo Portugal

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96												
Oct96												
Nov96												
Dec96												
Jan97												
Feb97												
Mar97												
Apr97												
May97												
Jun97												
Jul97												
Aug97												
Mean												

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96										
Oct96										
Nov96										
Dec96										
Jan97										
Feb97										
Mar97										
Apr97										
May97										
Jun97										
Jul97										
Aug97										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (37) Dorset Canada

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96	13.7	83.	130.	0.6	4.7	40.		4.66	0.28	0.21	0.01	11.0
Oct96	6.6	79.	101.	2.0	8.3	48.		4.32	0.70	0.34	0.05	23.0
Nov96	-2.0	81.	101.	3.5	9.5	48.		4.31	0.58	0.40	0.10	23.6
Dec96	-3.1	86.	19.	4.1	14.4	40.		4.23	0.47	0.61	0.07	29.0
Jan97	-11.7	79.	59.									
Feb97	-8.3	78.	65.									
Mar97	-6.9	68.	131.									
Apr97	2.1	64.	171.									
May97	7.7	68.	182.									
Jun97	16.4	69.	257.									
Jul97	17.8	74.	268.									
Aug97	15.9	78.	195.									
Mean	4.0	76.	1679.	2.5	9.2	44.						

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96	0.21	0.01	0.06							
Oct96	0.34	0.02	0.07							
Nov96	0.40	0.05	0.07							
Dec96	0.61	0.03	0.03							
Jan97										
Feb97										
Mar97										
Apr97										
May97										
Jun97										
Jul97										
Aug97										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (41) Berlin Germany

	M A N D A T O R Y										
	C L I M A T E			G A S E S			P R E C I P I T A T I O N				
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96												
Oct96	9.4	88.		14.0	56.0	12.	44.1		5.11	4.26	2.81	
Nov96	4.9	86.		14.0	35.0	13.	35.8		7.28	6.70	1.76	
Dec96	-2.7	86.		28.0	48.0	6.	1.4		5.44	3.35	2.48	
Jan97	-2.7	87.	70.	33.0	54.0	7.						
Feb97	4.0	77.	119.	11.0	38.0	27.						
Mar97	5.0	72.	273.	17.0	59.0	25.						
Apr97	6.4	66.	358.	11.0	54.0	33.						
May97	13.0	71.	485.	12.0	55.0	28.						
Jun97	16.6	65.	552.	13.0	71.0	29.						
Jul97	18.3	70.	512.	13.0	50.0	22.						
Aug97	20.3	68.	544.	13.0	62.0	24.						
Mean	8.4	76.		16.3	52.9	21.			6.07	5.32	2.34	

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96										
Oct96	5.30	1.50	0.89	0.22	0.48		52.0	0.1	10.6	0.4
Nov96	7.74	0.68	1.36	0.14	0.53		39.2	0.2	17.2	1.3
Dec96	17.14	1.22	1.39	0.25	0.30		64.0	0.5	0.5	0.5
Jan97							68.8	9.0	31.8	1.5
Feb97							35.2	0.2	9.6	0.1
Mar97							60.8	0.1	10.4	0.7
Apr97							47.2	1.0	7.2	0.1
May97							43.2	0.1	2.7	0.0
Jun97							40.8	0.1	13.6	0.3
Jul97							42.4	0.2	8.1	0.0
Aug97							57.6	0.8	3.4	0.8
Mean	6.58	1.13	1.11	0.19	0.50		46.6	0.2	13.3	0.8

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (44) Svanvik Norway

	M A N D A T O R Y										
	C L I M A T E			G A S E S			P R E C I P I T A T I O N				
Date	Temp C	Rh %	Sun MJ/m2	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
Sep96	6.0			6.8	0.9		40.9	4.51	0.79	0.17	1.19	20.5
Oct96	2.3			1.1	1.6		29.7	4.53	0.42	0.51	1.09	21.0
Nov96	-4.3			3.6	7.0		30.3	4.99	0.47	0.25	0.30	11.7
Dec96	-10.8			7.6	3.3		31.0	5.12	0.46	0.16	6.50	27.6
Jan97	-12.6			5.0	3.9		19.0	5.07	0.34	0.18	3.63	19.4
Feb97	-11.0			13.8	3.0		28.1	4.96	0.37	0.14	1.86	14.4
Mar97	-4.9			20.7	1.7		10.6	4.74	0.81	0.10	7.61	33.2
Apr97	-5.0			11.2	1.6		6.7	4.54	1.18	0.18	2.75	36.5
May97	3.5			9.6	0.8		9.9	4.32	1.57	0.25	1.76	50.0
Jun97	8.6			10.5	0.9		8.1	4.84	1.25	0.22	1.21	24.0
Jul97	13.8			18.2	1.8		16.2	4.75	0.49	0.24	0.27	12.3
Aug97	13.5			6.8	2.1		67.7	4.63	0.68	0.11	0.34	13.4
Mean	-0.1		1950.	9.6	2.4		298.2	4.70	0.62	0.20	1.90	19.6

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Sep96	0.24	0.70	0.26	0.14	0.08					
Oct96	0.38	0.58	0.38	0.12	0.23					
Nov96	0.22	0.14	0.38	0.24	0.02					
Dec96	0.21	3.01	0.19	0.40	0.11					
Jan97	0.26	1.85	0.12	0.28	0.07					
Feb97	0.17	0.98	0.15	0.18	0.04					
Mar97	0.29	3.53	0.36	0.50	0.14					
Apr97	0.55	1.50	0.29	0.23	0.09					
May97	0.80	1.02	0.27	0.14	0.06					
Jun97	0.39	0.94	0.43	0.17	0.18					
Jul97	0.37	0.21	0.22	0.06	0.16					
Aug97	0.34	0.21	0.15	0.05	0.09					
Mean	0.30	0.97	0.24	0.18	0.10					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (45) Chaumont, Switzerland

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Sep96												
Oct96	6.6	81.	234.	2.0	7.7	70.	81.6					
Nov96	1.6	83.	138.	2.4	7.1	61.	153.0	5.14	0.10	0.09	0.05	4.4
Dec96	-0.9	80.	123.	2.5	9.5	60.	59.3	5.27	0.07	0.11	0.06	4.1
Jan97	-0.3	75.	146.	1.6	10.0	68.	31.5	4.99	0.17	0.18	0.05	7.6
Feb97	1.9	72.	249.	1.0	5.5	84.	72.2	5.19	0.29	0.18	0.73	10.7
Mar97	4.5	75.	389.	1.4	8.4	86.	22.8	5.92	0.49	0.49	0.52	15.9
Apr97	4.4	65.	595.	2.0	8.9	100.	54.4	5.14	0.52	0.42	0.32	13.5
May97	9.5	75.	627.	1.3	6.4	106.	64.6	4.90	0.51	0.30	0.17	13.3
Jun97	11.7	81.	530.	0.9	5.8	96.	149.7	4.90	0.37	0.19	0.08	10.9
Jul97	12.9	83.	547.	0.6	4.7	97.	107.2	4.87	0.31	0.29	0.06	10.9
Aug97	16.2	80.	565.	0.9	8.4	109.	85.1	5.28	0.38	0.30	0.33	11.3
Mean	6.2	77.		1.5	7.5	85.		5.04	0.30	0.22	0.19	9.6

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Sep96										
Oct96										
Nov96	0.07	0.03	0.08	0.01	0.01					
Dec96	0.07	0.04	0.17	0.01	0.01					
Jan97	0.11	0.04	0.18	0.01	0.02					
Feb97	0.24	0.42	0.15	0.06	0.05					
Mar97	0.74	0.32	0.52	0.06	0.08					
Apr97	0.63	0.19	0.27	0.04	0.06					
May97	0.42	0.10	0.24	0.03	0.05					
Jun97	0.30	0.05	0.12	0.01	0.03					
Jul97	0.30	0.05	0.16	0.01	0.06					
Aug97	0.40	0.21	0.60	0.05	0.04					
Mean	0.28	0.12	0.21	0.02	0.04					

November 1997 - October 1998

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (01) Prague-Letnany Czech Republic

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	3.3	89.	132.	19.9	27.3	13.	52.6	7.30	19.30	2.30	1.00	50.0
Dec97	1.9	90.	165.	17.5	22.4	24.	38.1	6.30	17.30	2.90	1.00	18.0
Jan98	1.4	83.	174.	19.4	25.0	31.	9.9	6.70	19.40	1.00	5.70	47.0
Feb98	4.5	76.	339.	24.1	42.0	40.	22.3	4.50	27.20	1.80	7.10	50.0
Mar98	4.7	70.	575.	17.5	20.6		23.6	7.30	13.20	1.00	2.20	32.0
Apr98	10.8	66.	811.	11.2	19.5	67.	5.4	7.60	4.90	58.40	1.70	172.0
May98	15.2	64.	999.	13.5	16.8	77.	36.7	6.20	23.30	4.40	1.80	48.0
Jun98	18.3	70.	999.	7.6	23.8	67.	85.9	7.00	6.40	1.00	1.50	27.0
Jul98	18.1	75.		11.3	16.5	58.	70.4	6.80	5.60	1.00	1.50	17.0
Aug98	18.6	64.		12.7	19.8	72.	19.0	5.10	13.60	1.00	3.50	27.0
Sep98	13.4	84.		11.8	21.0	40.	73.2	5.40	4.30	1.00	0.60	9.0
Oct98	9.2	84.		17.5	29.1	31.	84.8	5.60	8.70	1.00	2.40	16.0
Mean	9.9	76.		15.3	23.7	47.	521.9	5.56	11.34	2.14	1.88	27.6

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97							89.0			
Dec97							56.0			
Jan98							68.0			
Feb98							30.0			
Mar98							40.0			
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean							62.1			

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (03) Kopisty Czech Republic

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	2.8	90.	2.	48.6	38.9		16.1	4.50	88.10	5.90	2.00	72.0
Dec97	1.6	91.	1.	38.6	30.9		35.5	4.40	38.30	3.90	1.50	57.0
Jan98	1.0	86.	2.	26.9	36.7	55.	15.9	4.30	58.90	4.20	2.40	58.0
Feb98	4.5	79.	5.	18.8	45.0	21.	10.9	4.40	105.40	7.80	5.70	98.0
Mar98	4.8	75.	7.	26.2	33.2	35.	28.5	4.60	43.00	7.50	3.10	59.0
Apr98	11.0	71.	10.	16.8	34.8	53.	17.0	4.60	104.10	11.10	2.70	99.0
May98	15.4	70.	14.	15.8	23.6	62.	9.2	5.00	113.60	1.30	4.40	150.0
Jun98	18.2	74.	12.	15.1	28.0	65.	66.8	4.60	28.80	1.00	1.50	35.0
Jul98	18.3	80.	11.	18.4	24.4	85.	51.4	4.90	26.00	1.00	1.30	37.0
Aug98	18.2	90.	12.	20.0	27.0	82.	29.4	5.10	27.80	1.00	1.90	46.0
Sep98	13.4	91.	6.	16.7	28.0	51.	73.3	4.50	14.00	1.00	0.60	25.0
Oct98	9.2	81.	0.	14.1	40.7	37.	65.8	4.90	4.30	2.20	1.50	21.0
Mean	9.9	82.	82.	23.0	32.6	55.	419.8	4.62	34.04	2.78	1.73	44.6

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97										
Dec97										
Jan98										
Feb98										
Mar98										
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (05) Ahtari Finland

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	-2.2	88.	23.	0.6	3.9	42.	40.6	4.38	0.45	0.37	0.13	21.0
Dec97	-5.1	87.	8.	1.0	5.2	48.	27.5	4.53	0.24	0.31	0.14	15.0
Jan98	-4.8	87.	20.	1.1	3.5	50.	65.6	4.63	0.22	0.26	0.18	12.0
Feb98	-8.6	79.	70.	3.0	4.2	70.	59.9	4.65	0.19	0.32	0.33	13.0
Mar98	-7.7	72.	263.	2.0	4.2	81.	39.8	4.76	0.19	0.16	0.17	9.0
Apr98	0.3	63.	360.	1.4	3.5	92.	13.4	4.61	0.36	0.21	0.12	12.0
May98	7.2	71.	475.	0.3	2.2	72.	43.8	4.93	0.38	0.20	0.08	10.0
Jun98	12.5	76.	506.	0.3	1.9	63.	115.0	4.87	0.30	0.15	0.10	10.0
Jul98	15.4	77.	512.	0.1	1.6	58.	97.7	4.89	0.20	0.14	0.13	8.0
Aug98	12.1	85.	322.	0.1	1.6	44.	118.3	4.86	0.18	0.12	0.05	7.0
Sep98	9.2	84.	239.	0.3	2.2	52.	37.3	4.84	0.43	0.28	0.18	12.0
Oct98	3.8	89.	91.	0.2	2.2	52.	82.9	4.71	0.21	0.23	0.24	11.0
Mean	2.7	80.	2889.	0.9	3.0	60.	741.8	4.74	0.25	0.21	0.15	10.7

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97	0.16	0.06	0.05	0.01	0.06					
Dec97	0.08	0.07	0.03	0.01	0.04					
Jan98	0.08	0.10	0.04	0.02	0.04					
Feb98	0.15	0.17	0.05	0.03	0.05					
Mar98	0.06	0.08	0.06	0.01	0.03					
Apr98	0.14	0.06	0.07	0.01	0.04					
May98	0.27	0.05	0.13	0.02	0.13					
Jun98	0.17	0.07	0.11	0.02	0.22					
Jul98	0.11	0.08	0.08	0.02	0.09					
Aug98	0.11	0.03	0.01	0.00	0.03					
Sep98	0.26	0.12	0.22	0.03	0.20					
Oct98	0.10	0.13	0.04	0.02	0.06					
Mean	0.14	0.08	0.07	0.02	0.09					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (06) Helsinki-Vallila Finland

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	1.2	86.	33.	4.0	26.0	22.	63.0					
Dec97	-2.1	88.	13.	5.0	28.0	21.	35.0					
Jan98												
Feb98												
Mar98												
Apr98												
May98												
Jun98												
Jul98												
Aug98												
Sep98												
Oct98												
Mean	-0.4	87.		4.5	27.0	22.						

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97										
Dec97										
Jan98										
Feb98										
Mar98										
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (07) Waldhof-Langenbrugge Germany

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	3.9	92.	69.	5.2	13.3	23.	62.5	5.20	0.44	0.35	0.17	10.9
Dec97	2.3	92.	36.	3.9	13.4	24.	51.5	4.80	0.77	0.70	1.18	23.0
Jan98	3.5	90.	66.	2.4	11.4	38.	52.9	5.00	0.51	0.50	1.63	18.5
Feb98	5.9	83.	98.	4.1	17.3	39.	13.2	5.80	1.00	0.75	2.64	25.1
Mar98	5.7	80.	233.	2.4	7.4	56.	60.2	5.30	0.53	0.49	0.83	15.9
Apr98	9.1	83.	282.	1.2	6.4	56.	70.0	5.00	0.85	0.99	0.38	24.4
May98		70.	573.	0.7	5.3	74.	18.8	4.90	1.34	0.79	0.58	30.9
Jun98	16.1	78.	495.	0.7	5.9	60.	108.1	5.00	0.73	0.67	0.31	18.8
Jul98	16.0	78.	484.	0.5	5.2	57.	80.5	5.00	0.75	0.70	0.57	18.4
Aug98	16.2	75.	459.	0.8	5.4	64.	66.5	5.50	0.45	0.36	0.91	13.0
Sep98	13.4	85.	173.	1.3	5.9	40.	50.1	5.00	0.73	0.58	0.31	19.3
Oct98	8.4	85.	136.	1.5	7.5	44.	151.4	5.00	0.49	0.37	0.92	13.5
Mean	9.1	83.	3104.	2.1	8.7	48.	785.7	5.04	0.64	0.57	0.73	17.6

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97	0.20	0.05	0.28	0.28	0.12		30.1		1.4	
Dec97	0.51	0.59	0.55	0.15	0.14		21.3		0.8	
Jan98	0.40	0.94	0.37	0.16	0.13		14.2		0.7	
Feb98	1.03	1.44	0.65	0.20	0.19		36.9		1.2	
Mar98	0.47	0.42	0.40	0.15	0.11		18.6		0.7	
Apr98	1.36	0.12	0.61	0.15	0.16		19.1		0.7	
May98	1.29	0.22	0.93	0.24	0.18		33.3		0.9	
Jun98	0.73	0.18	0.65	0.12	0.09		15.1		0.7	
Jul98	0.75	0.30	0.51	0.11	0.10		14.6		0.6	
Aug98	0.42	0.46	0.44	0.10	0.19		15.9		0.6	
Sep98	0.73	0.10	0.55	0.10	0.09		19.3		0.8	
Oct98	0.31	0.49	0.40	0.11	0.09		12.6		0.5	
Mean	0.60	0.37	0.49	0.14	0.12		17.9		0.7	

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (09) Langenfeld-Reusrath Germany

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	6.3	86.	22.	9.4	38.0	11.	42.9					
Dec97	4.8	85.	12.	10.3	32.7	17.	86.8					
Jan98	4.6	81.	17.	11.1	37.2	24.	36.8					
Feb98	6.3	78.	34.	15.5	50.1	20.	3.6					
Mar98	7.9	76.	53.	9.2	35.6	39.	76.4					
Apr98	9.7	80.	64.	6.1	33.3	44.	96.7					
May98	15.5	72.	116.	7.2	31.8	59.	23.5					
Jun98	16.7	80.	107.	5.8	25.1	49.	165.1					
Jul98	16.7	80.	88.	5.8	25.4	40.	74.0					
Aug98	17.6	73.	100.	7.4	32.1	45.	38.7					
Sep98	15.2	85.	55.	5.5	31.0	30.	138.1					
Oct98	10.0	90.	25.	6.4	30.0	21.	147.4					
Mean	10.9	80.	693.	8.3	33.5	33.	930.0					

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97										
Dec97										
Jan98										
Feb98										
Mar98										
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (10) Bottrop Germany

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97	7.1	86.	20.	29.4	45.5	10.	29.9	5.00	1.16	0.62	1.03	21.0
Dec97	5.2	87.	10.	33.7	39.8	15.	100.7	4.70	0.97	0.54	1.38	22.7
Jan98	5.1	82.	16.	31.4	41.9	21.	72.2					
Feb98	7.3	77.	33.	34.1	53.1	18.	9.2					
Mar98	8.0	77.	52.	24.7	37.5	36.	82.7					
Apr98	10.3	81.	69.	26.2	38.9	36.	106.4					
May98	16.1	73.	119.	17.4	30.9	54.	50.3					
Jun98	17.2	80.	101.	17.4	32.6	44.	135.2					
Jul98	17.4	79.	97.	14.9	28.3	40.	55.1					
Aug98	18.1	75.	104.	17.1	35.2	45.	69.7					
Sep98	15.5	86.	57.	22.1	39.3	24.	157.6					
Oct98	10.2	90.	25.	26.2	35.0	19.	175.3					
Mean	11.5	81.	703.	24.6	38.2	30.	1044.3	4.75	1.01	0.56	1.30	22.3

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97	0.75	0.57	0.95	0.10	0.09					
Dec97	0.67	0.71	0.39	0.10	0.08					
Jan98										
Feb98										
Mar98										
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean	0.69	0.68	0.52	0.10	0.08					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (13) Rome Italy

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97				3.5	10.2	9.						
Dec97				4.1	10.6	6.						
Jan98	11.9	72.	4.	7.8	45.3	5.	123.1					
Feb98	13.1	65.	7.	11.2	42.3	14.	113.4					
Mar98	13.6	56.	10.	2.8	26.1	35.	78.4					
Apr98	17.2	66.	14.	1.3	34.5	52.	128.2					
May98	21.6	66.	18.	1.6	41.2	48.	161.2					
Jun98	26.7	59.	21.	1.2	44.3	54.	16.4					
Jul98	29.3	56.	22.	4.1	51.8	62.	2.6					
Aug98	29.8	56.	18.	3.1	47.2	46.	18.4					
Sep98	24.1	66.	12.	2.5	51.4	39.	133.6					
Oct98	19.9	74.	8.	1.2	48.1	25.	210.1					
Mean	20.7	64.		3.7	37.8	33.						

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97										
Dec97										
Jan98										
Feb98										
Mar98										
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (14) Casaccia Italy

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N				
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97	10.1	78.	9.	3.5	10.2	9.	38.2					
Dec97	7.2	76.	7.	4.1	10.6	6.	32.1					
Jan98	5.7	75.	4.	8.5	56.5	4.	31.5					
Feb98	9.0	77.	9.	7.9	4.8	3.	42.1					
Mar98	9.3	71.	13.	6.5	5.7	32.	40.2					
Apr98	12.5	82.	18.	5.9	11.2	53.	39.8					
May98	17.1	78.	21.	5.4	15.0	62.						
Jun98	21.8	69.	24.	2.4	31.5	32.						
Jul98	24.5	65.	24.	5.0	38.5	51.						
Aug98	21.6	65.	19.	7.8		48.						
Sep98	19.7	73.	14.	2.3		32.	164.2					
Oct98	15.6	76.	8.	2.6	26.0	28.	188.4					
Mean	14.5	74.	170.	5.2	21.0	30.						

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97										
Dec97										
Jan98										
Feb98										
Mar98										
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (15) Milan Italy

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N				
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97	8.8	81.	5.	24.5	87.1	9.	122.6					
Dec97	5.1	83.	4.	31.4	86.1	8.	168.8					
Jan98	4.5	80.	5.	30.7	89.4	9.	56.4					
Feb98	9.1	66.	9.	39.1	129.4	16.	35.6					
Mar98	10.3	58.	15.	19.1	89.1	30.	9.1					
Apr98	12.3	70.	13.	8.6	74.9	43.	120.8					
May98	18.6	61.	20.	4.6	82.3	57.	126.4					
Jun98	22.4	61.	23.	4.1	73.5	73.	94.6					
Jul98	24.7	60.	24.	3.4	64.3	78.	89.1					
Aug98	25.1	59.	21.	2.6	49.8	81.	57.6					
Sep98	19.1	69.	14.	4.2	86.7	33.	148.2					
Oct98	14.1	78.	9.	12.6	94.1	18.	47.4					
Mean	14.5	69.	162.	15.4	83.9	38.	1076.6					

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97							46.8			
Dec97							46.9			
Jan98							52.3			
Feb98							75.3			
Mar98							46.7			
Apr98							28.1			
May98							36.7			
Jun98							39.2			
Jul98							38.3			
Aug98							32.2			
Sep98							40.3			
Oct98							42.8			
Mean							41.5			

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (16) Venice Italy

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97	8.8	89.	5.	7.6			30.1	7.40				
Dec97	5.1	91.	4.	13.1			87.1					
Jan98	4.4	86.	4.	13.5			31.6					
Feb98	6.9	79.	9.	11.1								
Mar98	8.1	77.	14.	8.6								
Apr98	11.4	88.	14.	4.6			49.1	5.90				
May98	17.1	79.	21.	6.8			55.4					
Jun98	21.1	80.	24.	4.7			100.6					
Jul98	23.4	79.	24.	4.8			45.1					
Aug98	23.9	73.	21.	5.1			14.2					
Sep98	18.1	83.	15.	3.1			115.2					
Oct98	13.6	87.	9.	5.3			168.8					
Mean	13.5	83.	164.	7.4				6.10				

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97										
Dec97										
Jan98										
Feb98										
Mar98										
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (21) Oslo Norway

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97	1.4	85.		3.9	29.6							
Dec97	-1.1	89.		4.1	29.5	13.	36.8	4.73	0.71	0.73	0.85	22.6
Jan98	-1.1	83.		5.2	32.9	16.	30.3	5.82	0.84	0.63	0.96	19.4
Feb98	1.3				44.7	28.	14.4	6.55	1.08	0.45	1.52	10.3
Mar98	0.7	71.		4.3	34.1	51.	30.0	5.66	1.11	0.92	2.58	30.0
Apr98	4.2	78.		2.9	25.0	47.	66.0	5.30	1.24	0.79	0.73	25.5
May98	11.6	63.		2.1	21.6	52.	13.5	7.32	0.81	0.67	0.64	42.3
Jun98	13.2	76.		5.2	20.0	43.	44.1	4.61	1.18	0.67	0.69	26.4
Jul98	15.4			6.0	18.5		30.6	5.53	0.77	0.52	1.06	18.6
Aug98	14.3	74.			19.3	37.	99.2	5.85	0.91	0.44	0.67	21.7
Sep98	12.3	84.		2.2	23.9	32.	37.2	5.25	0.55	0.33	0.55	13.4
Oct98	5.3	82.		3.8	31.3	30.	72.0	5.34	0.30	0.28	0.65	10.1
Mean	6.5	78.	2520.	4.0	27.5	35.		5.20	0.85	0.55	0.87	20.7

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97										
Dec97	0.56	0.48	0.69	0.08	0.08					
Jan98	0.54	0.59	1.38	0.10	0.09					
Feb98	0.57	1.02	2.22	0.15	0.16					
Mar98	1.09	1.50	1.13	0.22	0.12					
Apr98	0.91	0.41	1.23	0.11	0.13					
May98	0.75	0.39	4.04	0.17	5.95					
Jun98	0.36	0.42	1.13	0.12	0.39					
Jul98	0.41	0.64	0.97	0.11	0.11					
Aug98	1.10	0.41	0.71	0.12	0.26					
Sep98	0.46	0.32	0.55	0.07	0.14					
Oct98	0.26	0.35	0.29	0.06	0.29					
Mean	0.68	0.51	0.97	0.11	0.36					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (23) Birkenes Norway

	M A N D A T O R Y										
	C L I M A T E			G A S E S			P R E C I P I T A T I O N				
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	0.5	84.		0.4	3.5	37.	181.7	4.44	0.69	0.63	1.99	28.9
Dec97	-0.8	89.		0.4	4.0	32.	155.6	4.24	0.81	0.79	1.62	36.3
Jan98	-1.7	84.		0.1	1.0	47.	142.2	4.57	0.42	0.45	1.35	20.7
Feb98	3.1	82.		0.1	0.6	66.	40.7	4.74	0.64	0.27	6.83	35.9
Mar98	0.6	69.		0.2	0.8	71.	89.9	4.55	0.71	1.01	2.79	33.6
Apr98	3.0	85.		0.3	0.5	72.	225.4	4.51	0.74	0.49	1.34	25.4
May98	10.8	71.		0.2	0.4	73.	82.5	4.48	0.86	0.39	0.46	21.4
Jun98	12.2	75.		0.2	0.6	62.	178.9	4.57	0.51	0.41	0.78	19.3
Jul98	14.4	74.		0.2	0.5	55.	171.6	4.55	0.47	0.33	0.88	19.6
Aug98	12.5	73.		0.1	0.3	48.	75.7	4.51	0.42	0.20	0.68	17.2
Sep98	11.2	85.		0.2	0.5	45.	173.8	4.39	0.85	0.48	1.04	40.0
Oct98	5.5	80.		0.1	0.3	57.	226.4	4.73	0.29	0.19	1.82	16.0
Mean	5.9	79.	2630.	0.2	1.1	55.	1744.4	4.50	0.61	0.47	1.50	25.5

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97	0.59	1.14	0.09	0.14	0.10					
Dec97	0.55	0.91	0.06	0.10	0.09					
Jan98	0.32	0.79	0.05	0.09	0.06					
Feb98	0.25	3.95	0.20	0.45	0.21					
Mar98	0.98	1.55	0.14	0.19	0.09					
Apr98	0.50	0.70	0.10	0.09	0.08					
May98	0.53	0.25	0.12	0.03	0.08					
Jun98	0.38	0.42	0.06	0.05	0.05					
Jul98	0.28	0.46	0.06	0.06	0.04					
Aug98	0.30	0.38	0.04	0.04	0.04					
Sep98	0.51	0.60	0.46	0.12	0.10					
Oct98	0.14	1.01	0.04	0.11	0.07					
Mean	0.43	0.83	0.11	0.10	0.08					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (24) Stockholm South Sweden

	M A N D A T O R Y										
	C L I M A T E			G A S E S			P R E C I P I T A T I O N				
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	1.2	81.	18.	3.7	24.0	23.	44.0	4.25	1.09	0.64	0.52	33.0
Dec97	-0.1	86.	4.	4.5	24.1	21.	47.0	4.31	0.79	0.51	0.65	29.0
Jan98	0.3	84.	13.	4.2	21.7	33.	40.0	4.59	0.35	0.43	0.52	16.5
Feb98	1.5	79.	32.	3.0	20.0	47.	30.0	4.78	0.31	0.28	0.69	12.8
Mar98	0.2	69.	82.	3.7	25.5	55.	9.0	4.84	0.62	0.46	0.85	16.9
Apr98	3.7	73.	128.	3.6	21.5	63.	32.0	4.49	1.01	0.49	0.57	25.5
May98	10.5	59.	217.	2.1	16.9	66.	29.0	5.14	0.87	0.38	0.19	14.2
Jun98	13.1	73.	168.	1.0	15.9	53.	20.0	4.86	0.45	0.31	0.23	11.9
Jul98	16.1	72.	195.	0.7	19.2	52.	15.0	4.98	0.24	0.32	0.13	8.9
Aug98	14.4	73.	150.	0.7	12.9	45.	18.0	5.56	0.29	0.24	0.22	8.1
Sep98	12.7	78.	102.	1.4	20.4	39.	41.0	4.84	0.47	0.29	0.22	12.7
Oct98	6.9	82.	45.	2.3	21.7	33.	138.0	4.83	0.29	0.29	0.57	11.8
Mean	6.7	76.	1154.	2.6	20.3	44.	463.0	4.63	0.54	0.38	0.48	17.1

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97	0.57	0.22	0.13	0.03	0.07					
Dec97	0.40	0.34	0.09	0.03	0.06					
Jan98	0.36	0.29	0.05	0.03	1.54					
Feb98	0.25	0.39	0.11	0.04	0.87					
Mar98	0.65	0.42	0.23	0.04	1.67					
Apr98	0.80	0.16	0.22	0.04	2.41					
May98	0.76	0.09	0.29	0.05	5.45					
Jun98	0.33	0.13	0.23	0.04	1.83					
Jul98	0.25	0.10	0.17	0.03	0.93					
Aug98	0.30	0.14	0.18	0.03	1.27					
Sep98	0.34	0.12	0.18	0.03	1.58					
Oct98	0.29	0.32	0.09	0.04	0.96					
Mean	0.41	0.25	0.14	0.04	1.33					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (26) Aspvreten Sweden

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97	1.7	95.	13.	0.9	3.9	35.	43.9	4.27	0.29	0.76	0.88	30.4
Dec97	-0.5	95.	8.	1.0	5.3	34.	55.0	4.34	0.15	0.42	0.51	23.2
Jan98	-0.2	93.	14.	0.6	5.2	42.	35.1	4.68	0.29	0.37	0.46	13.4
Feb98	1.5	89.	34.	0.6	3.5	57.	5.0	5.30	0.15	0.14	0.83	6.2
Mar98	-1.2	82.	87.	0.8	2.3	69.	33.7	4.72	0.29	0.30	0.61	12.0
Apr98	2.7	86.	131.	1.2	2.5	72.	33.1	4.80	0.61	0.39	0.71	16.8
May98	8.6	78.	232.	0.5	1.7	43.	60.4	4.80	0.71	0.32	0.38	16.0
Jun98	12.2	85.	184.	0.4	1.7	61.	55.8	4.60	0.56	0.33	0.44	18.2
Jul98	14.9	84.	215.	0.4	1.4	56.	41.2	4.70	0.28	0.27	0.34	12.8
Aug98	13.4	76.	169.	0.2	1.7	49.	50.2	4.80	0.40	0.30	0.42	13.4
Sep98	11.4		107.	0.4	2.2	49.	40.7	4.70	0.52	0.26	0.35	15.3
Oct98	5.7	89.	56.	0.4	3.1	48.	25.1	4.50	0.32	0.29	1.89	16.6
Mean	5.8	87.	1250.	0.6	2.9	51.	479.2	4.59	0.41	0.37	0.57	17.3

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97	0.65	0.24	0.32	0.07	0.09					
Dec97	0.25	0.26	0.14	0.05	0.11					
Jan98	0.19	0.22	0.15	0.05	0.13					
Feb98	0.08	0.43	0.07	0.06	0.04					
Mar98	0.19	0.29	0.11	0.06	0.09					
Apr98	0.40	0.22	0.37	0.08	0.09					
May98	0.51	0.10	0.34	0.04	0.07					
Jun98	0.34	0.08	0.21	0.03	0.08					
Jul98	0.18	0.12	0.15	0.07	0.14					
Aug98	0.27	0.15	0.28	0.08	0.13					
Sep98	0.30	0.18	0.17	0.07	0.13					
Oct98	0.14	0.50	0.48	0.10	0.12					
Mean	0.32	0.20	0.24	0.06	0.10					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (27) Lincoln Cathedral United Kingdom

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97												
Dec97												
Jan98												
Feb98												
Mar98												
Apr98	7.7		312.	9.2	17.1	58.	94.9					
May98	12.1		535.	9.2	17.1	58.	20.8					
Jun98	14.2		471.	9.0	16.1	50.	111.9					
Jul98	15.6		507.	4.1	15.7	50.	23.4					
Aug98	15.7		470.	6.8	19.4	45.	42.8					
Sep98	14.0		187.	11.6	22.5	46.	51.1					
Oct98	10.1		160.	8.7	26.0	47.	97.8					
Mean	12.8			8.4	19.1	51.						

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97										
Dec97										
Jan98										
Feb98										
Mar98										
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (31) Madrid Spain

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	9.7	79.	98.	4.8			173.5	5.80	0.73	0.25	1.02	12.0
Dec97	6.7	80.	95.		26.9		50.1	5.95	0.91	0.29	1.14	14.4
Jan98												
Feb98												
Mar98												
Apr98												
May98												
Jun98												
Jul98												
Aug98												
Sep98												
Oct98												
Mean	8.2	80.		4.8	26.9			5.83	0.77	0.26	1.05	12.5

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97	0.19	0.28	0.60	0.08	0.03					
Dec97	0.42	0.26	0.54	0.09	0.06					
Jan98										
Feb98										
Mar98										
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean	0.24	0.28	0.59	0.08	0.04					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (33) Toledo Spain

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	9.2	77.	93.	0.5	6.2	74.	158.6	5.74	0.47	0.17	1.37	8.9
Dec97												
Jan98	5.9	78.	218.	2.0	10.7	68.	53.8	5.64	0.57	0.29	0.89	11.4
Feb98	8.5	72.	303.	3.2	23.7	78.	54.1	5.65	0.36	0.17	0.91	7.6
Mar98	12.3	50.	554.	1.6	8.1	97.	13.3	6.01	0.55	0.31	0.60	10.8
Apr98	9.9	68.	584.	0.9	8.3	92.	93.6	6.25	0.56	0.26	0.94	9.3
May98	13.5	65.	673.	0.5	6.8	99.	163.7	5.60	0.60	0.36	0.54	12.4
Jun98			834.	0.9	9.0	95.	35.0	6.14	0.62	0.37	0.58	9.6
Jul98			878.	4.0	13.6	109.						
Aug98			733.	2.8	13.8	105.	10.0	6.50	3.05	1.45	1.53	57.7
Sep98			515.	0.9	14.4	80.	69.0	5.83	0.66	0.25	0.81	12.0
Oct98	14.1	51.	430.	0.6	18.3	79.	38.0	5.78	0.28	0.12	0.59	4.2
Mean	10.5	66.		1.6	12.1	89.		5.76	0.57	0.27	0.89	10.7

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97	0.04	0.48	0.19	0.07	0.06					
Dec97										
Jan98	0.20	0.37	0.24	0.06	0.02					
Feb98	0.04	0.44	0.21	0.05	0.00					
Mar98	0.24	0.19	0.64	0.10	0.13					
Apr98	0.18	0.45	0.39	0.07	0.07					
May98	0.43	0.15	0.24	0.04	0.04					
Jun98	0.28	0.26	0.55	0.08	0.06					
Jul98										
Aug98	2.18	0.66	3.75	0.31	0.38					
Sep98	0.22	0.23	0.60	0.07	0.10					
Oct98	0.10	0.11	0.28	0.04	0.00					
Mean	0.23	0.33	0.36	0.06	0.06					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (34) Moscow Russia

	M A N D A T O R Y										
	C L I M A T E			G A S E S			P R E C I P I T A T I O N				
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97												
Dec97	-8.7	75.			55.0	21.		6.73	2.10		2.30	61.8
Jan98	-5.5	90.			37.0	27.		6.65	2.77		1.84	56.0
Feb98	-8.3	77.			39.0	40.		6.32	1.13		2.26	61.8
Mar98	-1.6	68.			33.7	41.		6.43	2.21		1.79	40.8
Apr98	-4.1	63.			28.6	63.		6.65	1.80		1.63	68.7
May98	13.0	63.		40.0	21.1	62.		6.88	2.14		1.57	61.3
Jun98	21.3	71.		44.7	24.5	64.		6.89				43.1
Jul98	20.2	80.		42.1	19.3	52.		6.56	1.22		1.97	42.4
Aug98	16.0	83.		16.1	12.6	40.		6.83	0.48		1.16	31.7
Sep98	11.6	68.		20.2	18.2	30.		6.93	0.82		0.55	43.2
Oct98	6.3	75.		25.7	19.4	25.		6.83	1.10		1.30	27.4
Mean	5.5	74.		31.5	28.0	42.						

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97										
Dec97	0.78									
Jan98	0.88									
Feb98	1.34									
Mar98	0.74									
Apr98	0.70									
May98	0.81									
Jun98										
Jul98	0.37									
Aug98	0.72									
Sep98	0.86									
Oct98	0.59									
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (35) Lahemaa Estonia

	M A N D A T O R Y										
	C L I M A T E			G A S E S			P R E C I P I T A T I O N				
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	0.9	88.			0.9							
Dec97	-4.1	88.			1.1							
Jan98	-0.6	90.		0.4	1.0	52.	39.9	5.36	2.67	0.36	1.40	33.8
Feb98	-3.8	84.		0.8	0.9	60.	41.8	5.34	1.83	0.43	1.48	25.3
Mar98	-4.0	81.		0.6	0.8	70.	23.0	4.92	5.60	0.65	1.82	30.0
Apr98	3.5	72.		0.5	0.5	72.	31.2	5.50	5.20	0.45	0.53	34.7
May98	9.1	74.			0.5	68.	85.4	5.44	1.54	0.22	0.57	18.8
Jun98	14.5	78.			0.5	60.	151.0	5.30	1.71	0.25	0.59	25.6
Jul98	15.9	81.			0.4		103.0	5.29	1.44	0.14	0.55	12.4
Aug98	13.9	85.			0.4	44.	181.0	4.96	0.65	0.09	0.54	12.8
Sep98	11.9	79.		0.3	0.5	44.	20.4	6.18	1.36	0.20	0.80	13.8
Oct98	6.3	80.		0.3	0.5	48.	75.4	4.91	0.96	0.39	1.36	14.6
Mean	5.3	82.		0.5	0.7	58.		5.16	1.64	0.24	0.78	19.4

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97										
Dec97										
Jan98	0.16	0.93	2.95	0.36	0.20					
Feb98	0.11	0.65	0.45	0.11	0.15					
Mar98	0.43	0.64	2.40	0.18	0.98					
Apr98	0.36	0.37	1.73	0.12	0.21					
May98	0.22	0.25	3.48	0.10	0.30					
Jun98	0.34	0.27	3.43	0.24	0.20					
Jul98	0.22	0.19	0.63	0.13	0.15					
Aug98	0.16	0.08	1.24	0.14	0.02					
Sep98	0.16	0.30	0.91	0.19	0.04					
Oct98	0.33	0.58	0.75	0.37	0.24					
Mean	0.24	0.31	1.90	0.19	0.18					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (36) Lisbon-Jeronimo Portugal

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97	16.1	62.		11.9	45.2	14.	37.0	6.28	4.40	2.17	9.23	55.3
Dec97	14.5	62.	50.	11.6	41.5	8.	20.3	6.06	8.24	3.98	11.09	61.1
Jan98	13.6	63.	61.	13.5	41.9	5.	14.4	6.23	10.42	2.50	24.34	135.3
Feb98	14.5	57.	100.	12.5	49.1	5.	15.7	5.20	6.76	1.92	11.64	75.8
Mar98	16.7	46.	155.	21.8	61.5	5.	16.7	6.70	22.73	3.91	5.67	71.8
Apr98												
May98												
Jun98												
Jul98												
Aug98												
Sep98												
Oct98												
Mean	15.1	58.		14.3	47.8	7.		5.85	9.28	2.81	11.48	73.2

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97	0.91	5.80	1.92	0.57	0.27					
Dec97	0.35	6.37	4.42	0.59	0.32					
Jan98	0.59	13.33	5.81	1.65	0.60					
Feb98	2.07	6.15	2.80	0.72	0.18					
Mar98	1.05	3.45	18.90	0.62	0.55					
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean	0.95	6.63	5.80	0.75	0.36					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (37) Dorset Canada

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97	-0.5	82.	83.									
Dec97	-5.7	80.	75.									
Jan98	-6.4	82.	39.									
Feb98	-3.6	72.	120.									
Mar98	-2.1	76.	120.									
Apr98	5.7	59.	253.									
May98	14.9	69.	239.									
Jun98	16.6	76.	222.									
Jul98			264.									
Aug98			244.									
Sep98			198.									
Oct98			179.									
Mean	2.4	74.	2036.									

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97										
Dec97										
Jan98										
Feb98										
Mar98										
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (40) Paris France

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	10.1	80.	109.	21.4	70.5	10.	95.5	6.30	2.04	0.73	1.82	49.1
Dec97	7.5	78.	75.	21.7	64.2	11.	57.1	5.80	1.43	0.32	2.18	30.5
Jan98	6.4	73.	120.	20.9	60.4	15.	63.1	4.88	1.92	0.47	2.28	32.2
Feb98	7.9	70.	199.	32.9	98.8	8.	46.1	6.70	3.28	0.49	7.39	87.7
Mar98	10.3	62.	300.	19.9	72.0	23.	3.8	5.70	18.42	3.59	18.35	186.7
Apr98	11.1	69.	368.	10.2	74.7	39.	49.0	7.27	1.45	0.61	1.97	49.0
May98	18.0	56.	669.	9.4	73.8	59.	30.4	5.51	1.80	3.43	2.99	60.6
Jun98	19.2	59.	672.	5.1	63.8	50.	16.8	7.06	1.10	0.47	1.56	37.9
Jul98	19.3	61.	553.	5.2	59.1	42.	59.2	6.95	1.05	0.59	1.05	29.1
Aug98	21.2	56.	632.	8.0	67.4	58.	13.0	7.00	1.37	0.59	1.52	39.0
Sep98	17.5	69.	374.	8.4	71.4	34.	59.4	6.81	0.98	0.46	1.69	29.4
Oct98	12.9	74.	179.	7.9	63.7	22.	78.2	6.83	1.72	0.55	2.06	36.9
Mean	13.4	67.	4250.	14.2	70.0	31.	571.6	5.71	1.81	0.72	2.47	43.7

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97	0.76	0.94	4.00	0.12	0.20					
Dec97	0.55	1.09	1.85	0.10	0.00					
Jan98	0.25	0.91	2.62	0.11	0.74					
Feb98	0.28	3.13	7.00	0.49	0.21					
Mar98										
Apr98	2.38	1.40	3.21	0.10	1.18					
May98	1.69	2.24	7.03	0.22	1.43					
Jun98	1.20	1.07	4.06	0.11	0.85					
Jul98	1.23	0.72	3.36	0.14	0.54					
Aug98	1.25	0.94	4.63	0.15	0.37					
Sep98	0.83	1.04	3.21	0.12	0.37					
Oct98	0.68	1.36	4.51	0.18	0.45					
Mean	0.90	1.29	3.91	0.16	0.50					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (41) Berlin Germany

M A N D A T O R Y

	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	3.5	84.	78.	19.0	34.0	6.	15.6		4.54	1.99	3.26	
Dec97	1.7	87.	43.	13.0	32.0	10.	41.8		3.17	2.35	0.75	
Jan98	-1.8	84.	70.	10.0	31.0	15.	48.2		6.88	2.64	2.07	
Feb98	6.3	76.	109.	10.0	28.0	23.	24.7		18.96	7.07	8.30	
Mar98	5.5	73.	244.	11.0	47.0	24.	39.3		6.56	4.06	2.68	
Apr98	11.1	75.	306.	12.0	40.0	24.	34.0		6.97	6.22	0.90	
May98	16.2	68.	517.	12.0	55.0	27.	23.3		8.36	6.48	1.84	
Jun98	18.4	71.	482.	8.0	40.0	31.	57.8		5.20	4.48	0.69	
Jul98	18.0	71.	474.	6.0	37.0	31.	38.7		4.56	5.64	0.77	
Aug98	17.9	71.	420.	8.0	39.0	331.	51.8		13.32	6.14	2.59	
Sep98	15.0	80.	239.	14.0	44.0	16.	26.9		7.95	5.92	1.78	
Oct98	9.3	81.	131.	8.0	25.0	27.	84.1		3.78	2.41	2.37	
Mean	10.1	77.	3113.	10.9	37.7	47.	486.2		6.98	4.34	2.09	

O P T I O N

	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97	3.26	0.48	3.74	0.04	1.73		52.0			
Dec97	2.69	0.89	3.43	0.15	0.22		48.0			
Jan98	6.22	1.49	2.82	0.28	0.87		14.0	1.5	7.6	2.6
Feb98	5.19	5.82	9.90	0.73	1.13		28.0	3.1	15.2	5.2
Mar98	3.41	2.30	2.06	0.20	0.63		21.0	0.6	10.6	4.8
Apr98	3.54	0.77	2.33	0.20	0.87		22.0	0.4	8.8	4.4
May98	4.36	1.22	3.51	0.20	0.62		31.0	1.2	8.6	5.2
Jun98	3.00	0.89	2.35	0.20	0.54		48.0	1.2	10.9	0.1
Jul98	6.92	0.81	2.59	0.20	0.88		69.0	1.8	16.5	0.2
Aug98	4.33	1.40	12.68	0.32	14.16		44.0	3.0	12.2	0.1
Sep98	3.50	0.83	2.42	0.18	0.82		14.0	0.6	9.8	0.4
Oct98	2.43	1.80	1.29	0.20	1.00					
Mean	3.93	1.51	3.89	0.24	2.22		36.3	1.5	11.1	2.2

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (42) Eleusis or Athens Greece

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97												
Dec97												
Jan98												
Feb98												
Mar98												
Apr98												
May98												
Jun98												
Jul98												
Aug98												
Sep98												
Oct98												
Mean												

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97										
Dec97										
Jan98										
Feb98										
Mar98										
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (43) Tel Aviv Israel

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97												
Dec97												
Jan98												
Feb98												
Mar98												
Apr98												
May98												
Jun98												
Jul98												
Aug98												
Sep98												
Oct98												
Mean												

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97										
Dec97										
Jan98										
Feb98										
Mar98										
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (44) Svanvik Norway

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	-7.1			8.1	2.7		21.8	5.35	0.38	0.14	2.68	16.4
Dec97	-9.2			4.7	2.5		14.5	5.65	0.40	0.19	2.83	17.4
Jan98	-12.0			9.7	1.1	49.	18.0	5.24	0.37	0.26	1.42	13.8
Feb98	-20.8			7.9	1.5	66.	22.4	5.02	0.47	0.13	3.03	18.5
Mar98	-10.3			12.2	0.8	67.	27.5	5.15	0.61	0.08	7.15	32.8
Apr98	-4.1			5.1	0.5	63.	18.6	4.38	1.47	0.23	7.53	48.6
May98	3.2			3.3	0.4	60.	8.0	4.68				
Jun98	7.2			19.8	0.3	49.	70.3	4.44	0.79	0.08	0.41	18.6
Jul98	13.4			3.9	0.3	47.	44.4	5.03	0.30	0.08	0.17	6.5
Aug98	10.6			5.7	0.4	42.	21.4	5.17	0.72	0.17	0.23	60.0
Sep98	5.7	79.		6.3	0.3	49.	60.5	4.96	0.27	0.08	0.77	10.1
Oct98	1.2	80.		3.2	0.4	50.	16.6	4.50	0.88	0.11	0.67	22.9
Mean	-1.8	80.	1970.	7.5	0.9	54.	344.0	4.77	0.57	0.12	1.87	20.7

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97	0.23	1.57	0.39	0.19	0.12					
Dec97	0.35	1.62	0.37	0.18	0.19					
Jan98	0.33	0.90	0.17	0.09	0.18					
Feb98	0.20	1.60	0.15	0.22	0.10					
Mar98	0.19	3.91	0.20	0.49	0.25					
Apr98	0.50	3.74	0.25	0.48	0.22					
May98										
Jun98	0.17	0.23	0.08	0.05	0.04					
Jul98	0.15	0.12	0.23	0.06	0.09					
Aug98	0.58	0.18	0.46	0.23	0.19					
Sep98	0.12	0.42	0.05	0.06	0.04					
Oct98	0.31	0.33	0.08	0.07	0.06					
Mean	0.23	1.02	0.18	0.15	0.11					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (45) Chaumont, Switzerland

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
Date	Temp C	Rh %	Sun MJ/m2	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
Nov97	3.2	82.	141.	0.9	10.2	67.	64.2	5.00	0.14	0.17	0.13	7.0
Dec97	0.3	83.	90.	1.5	8.7	63.	115.7	4.83	0.12	0.19	0.25	8.9
Jan98	0.2	79.	135.	1.7	7.6	66.	87.5	4.86	0.16	0.16	0.26	8.6
Feb98	3.0	67.	275.	2.1	8.9	84.	17.1	5.35	0.39	0.28	0.12	9.2
Mar98	2.4	68.	351.	2.0	8.0	87.	35.8	5.35	0.38	0.27	0.32	9.7
Apr98	4.2	81.	389.	0.9	6.9	95.	154.4	5.02	0.32	0.18	0.10	9.5
May98	11.0	68.	668.	1.5	7.0	117.	54.9	5.18	0.26	0.29	0.05	10.3
Jun98	13.0	75.	624.	0.8	7.6	98.	80.1	5.23	0.38	0.23	0.18	9.4
Jul98	14.8	73.	612.	1.1	6.6	93.	65.4	5.01	0.53	0.30	0.12	15.1
Aug98	15.1	72.	572.	1.2	6.8	113.	93.7	5.01	0.37	0.23	0.10	9.7
Sep98	9.9	87.	336.	0.8	8.0	82.	167.7	5.01	0.27	0.21	0.21	9.1
Oct98	6.0	87.	195.	0.5	5.7	66.	116.4	4.92	0.20	0.16	0.27	8.3
Mean	6.9	77.	4388.	1.3	7.7	86.	1052.9	4.99	0.27	0.21	0.18	9.4

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
Date	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l	HNO3 ug/m3	Conc ug/m3	Cl mg/m2d	SO4-S mg/m2d	NO3-N mg/m2d
Nov97	0.14	0.08	0.16	0.03	0.01					
Dec97	0.09	0.15	0.06	0.03	0.01					
Jan98	0.08	0.14	0.09	0.04	0.02					
Feb98	0.41	0.08	0.64	0.03	0.04					
Mar98	0.46	0.19	0.45	0.07	0.05					
Apr98	0.25	0.08	0.29	0.02	0.03					
May98	0.50	0.09	0.32	0.02	0.04					
Jun98	0.36	0.35	0.49	0.05	0.04					
Jul98	0.48	0.17	1.09	0.06	0.09					
Aug98	0.32	0.09	0.33	0.03	0.04					
Sep98	0.19	0.19	0.38	0.04	0.03					
Oct98	0.14	0.15	0.05	0.02	0.04					
Mean	0.24	0.15	0.31	0.03	0.03					

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (46) London UK

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97												
Dec97												
Jan98												
Feb98												
Mar98												
Apr98	9.7		293.	6.6	47.8	38.	111.0					
May98	14.8		544.	6.6	47.8	38.	34.0					
Jun98	16.1		451.	4.6	36.5	38.	105.0					
Jul98	17.2		400.	5.5	41.4	41.	36.0					
Aug98	18.4		534.	3.3	43.7	37.	20.0					
Sep98	16.6		291.	11.1	52.0	33.	74.0					
Oct98	12.3		159.	6.1	48.0	26.	108.0					
Mean	15.0			6.3	45.3	36.						

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97										
Dec97										
Jan98										
Feb98										
Mar98										
Apr98										
May98										
Jun98										
Jul98										
Aug98										
Sep98										
Oct98										
Mean										

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (47) USA USA

	M A N D A T O R Y											
	C L I M A T E			G A S E S			P R E C I P I T A T I O N					
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97	18.3	42.		0.3	9.5	33.	7.5	5.40				
Dec97	15.3	45.		0.5	4.1	31.	11.4	5.10				
Jan98	14.8	52.		1.0	33.0	51.	11.6	5.90				
Feb98	13.6	53.		0.0	19.0	44.	52.9	6.30				
Mar98	15.7	54.		0.0	22.0	49.	13.4	6.10				
Apr98	15.3	50.	1.	0.1	24.0	54.	4.2	5.90				
May98	15.1	80.	1.	0.5	16.0	52.	9.3	5.90				
Jun98	17.1	82.	1.	0.8	20.0	56.	0.4					
Jul98	21.7	76.	1.	1.8	26.0	55.	0.0					
Aug98	23.4	63.	1.	1.4	34.0	60.	0.0					
Sep98	19.8	80.	1.	0.1	27.0	52.	0.7					
Oct98	18.9	60.	1.	0.4	26.0	45.		5.70	0.15	0.24	0.56	31.3
Mean	17.4	61.		0.6	21.7	48.		5.77				

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97						2.6				
Dec97						3.4				
Jan98						8.5				
Feb98										
Mar98										
Apr98						4.6				
May98						3.6				
Jun98						1.7				
Jul98						1.8				
Aug98						2.9				
Sep98						4.9				
Oct98						2.2				
Mean						3.6				

ECE-PROGRAMME ON EFFECTS ON MATERIALS

SITE: (49) Antwerpen Belgium

	M A N D A T O R Y										
	C L I M A T E			G A S E S			P R E C I P I T A T I O N				
	Temp	Rh	Sun	SO2	NO2	O3	mm	pH	SO4-S	NO3-N	Cl	Cond
Date	C	%	MJ/m2	ug/m3	ug/m3	ug/m3			mg/l	mg/l	mg/l	uS/cm
Nov97												
Dec97	5.8	82.		24.0		12.						
Jan98	5.1	78.		25.0	67.0	20.						
Feb98	5.0	75.		42.0	65.0	27.						
Mar98	8.4	75.		27.0	56.0	32.						
Apr98	10.0	76.		22.0	54.0	28.						
May98	16.2	66.		18.0	51.0	50.						
Jun98	16.7	73.		20.0	44.0	35.						
Jul98	17.3	72.		23.0	44.0	33.	845.0	5.41	3.66	1.31	3.66	35.3
Aug98	18.5	68.		23.0	49.0	42.	1129.0	5.43	1.98	1.04	3.21	47.8
Sep98	15.8	80.		18.0	53.0	18.	5151.0	4.91	0.94	0.32	3.62	29.4
Oct98	10.8	81.		13.0	45.0	17.	5042.0	5.19	1.51	0.36	4.28	39.3
Mean	11.8	75.		23.2	52.8	29.		5.07	1.46	0.47	3.86	35.6

	O P T I O N									
	P R E C I P I T A T I O N					GASES	PART	PARTICLES DEP.		
	NH4-N	Na	Ca	Mg	K	HNO3	Conc	Cl	SO4-S	NO3-N
Date	mg/l	mg/l	mg/l	mg/l	mg/l	ug/m3	ug/m3	mg/m2d	mg/m2d	mg/m2d
Nov97										
Dec97										
Jan98							48.0			
Feb98							46.0			
Mar98							31.0			
Apr98							54.0			
May98							38.0			
Jun98							26.0			
Jul98							24.0			
Aug98							30.0			
Sep98							29.0			
Oct98							22.0			
Mean							25.8			

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ABSTRACT
This report presents the database for the second phase of the ECE ICP material programme. Besides presenting the available data for the three exposure years 1995/96, 1996/97 and 1997/98, the report presents the spread in the yearly mean values for the exposure sites. To show the reductions in the air pollutions observed during the ruling time of the project, scatterplots for SO_2, NO_2 and O_3 for the two years 1987/88 and 1997/98 are presented. They show that the reduction for SO_2 at the sites during the ten years period has been 75% in average, NO_2 the reduction has been 25% and for O_3 no detectable change has been observed.

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KEYWORDS		
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ABSTRACT (in Norwegian)

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