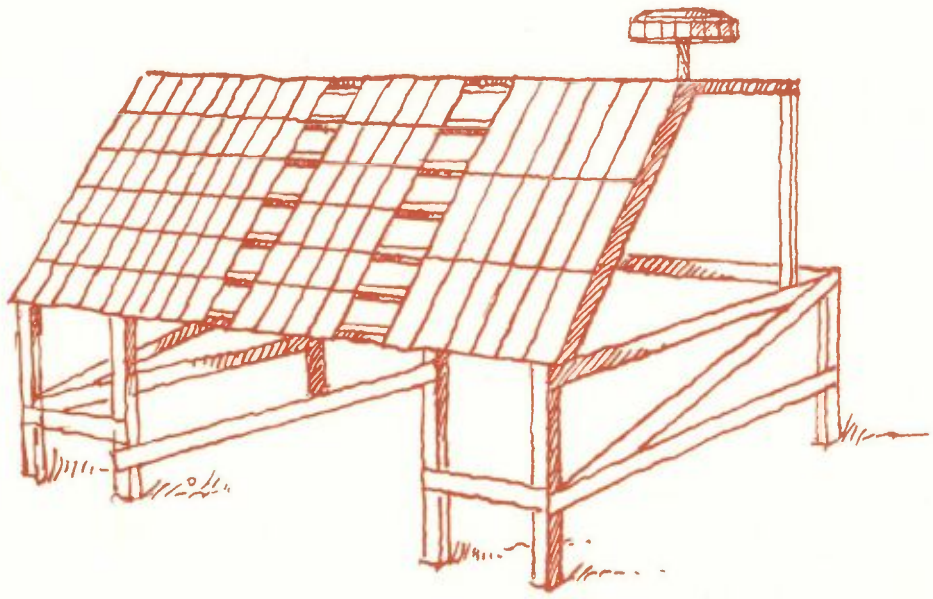
CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION

UN/ECE INTERNATIONAL CO-OPERATIVE PROGRAMME ON EFFECTS ON MATERIALS, INCLUDING HISTORIC AND CULTURAL MONUMENTS



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

Environmental data report September 1990 to August 1991

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1 Introduction

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

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

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

Structural metals, including steel, weathering steel, zinc and aluminium (Sub-centre responsible for evaluation: National Research Institute for Protection of Materials, Prague, Czechoslovakia), copper and cast bronze (Bayerisches Landesamt für Denkmalpflege, Munich, Germany).

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

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

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

Environmental data storing, reporting and evaluation are the responsibility of the Norwegian Institute for Air Research. The aim of this report is to present all environmental data available from the fourth year of exposure, September 1990 to August 1991.

The yearly values for all test-sites for all four years are included in this report. To illustrate the quality of the data reported a statistical treatment of some of the environmental data was performed in the environmental report no. 9 (Henriksen et al., 1992). In this report some of the most important conclusions drawn, are summarized in chapter 8.

2 The measuring programme

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

The measuring programme.

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

The data are to be reported to the environmental sub-centre as daily, weekly or monthly mean values, except for TOW, sunshine hours and mm precipitation which are reported as the sum of the daily values. The data will be presented as monthly and yearly values.

3 Data from the monitoring test sites

The data are sent to the environmental sub-centre on special reporting forms. Some sites have given the results in ASCII files on diskette.

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

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

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

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

4 Monthly mean concentrations

The monthly and yearly values are given in the tables in Annex 1. The data have been subject to the following restrictions and classifications:

4.1 Gases, temperatures and relative humidity

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

4.2 Precipitation components

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

4.3 TOW and sunshine hours

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

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

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

5 Yearly mean concentrations

5.1 Yearly mean values

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

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

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

5.2 TOW, sunshine hours and amount of precipitation

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

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

6 Calculations of monthly values

Mean temperature (T_M)

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

T_i = measured values

i = *number of records*

Mean relative humidity (RH_M)

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

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

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

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

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

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

Mean gas concentrations G_M

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

For some sites where complete informations of the sampling period exist, another equation is used

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

$$n_i = sampling\ period$$

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

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

weighted mean pH (pH_M)

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

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

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

7 Results and discussions

The yearly results for the first, second, third and fourth year, are given in Table 1 and the monthly and yearly results from September 1990 to August 1991 in Annex 1. The regularity of the environmental data is comparable to the good results from the third year. However, still there are sites where the influx of data is slower and lower than expected. Corrections of the yearly mean TOW values for sites 24 and 25 have been included in Table 1 for the first, second and third year.

For calculating dose-response equation it is crusial to have complete data sets and sufficient spread in the values for the most important parameters. If gaps in the data occur, estimated values must sometimes be generated. To illustrate the quality of the data measured and their yearly fluctuation, scatter plots of the most important parameters are made.

The pattern of the fourth year results is similar to them of the previous years. In Figure 1-4 scatter plots of TOW, SO_2, NO_2 and pH for the third versus the fourth year results are presented. The figures show that the environmental condition at the sites do not change too much from one year to the next.

The NO_2 results were clustered around the y=x line in the same way as the previous years. The Milan result for the fourth year was somewhat lower than the third year and similar to the first and second year.

The SO_2 results were clustered around the y=x line when the fourth year results are compared with the third year. The sites with high SO_2-concentrations had higher concentrations the first and second year compared with the two last years.

The TOW results clustered around the y=x line for the fourth and third year. The largest deviations were observed at site 8 Aschaffenburg and site 33 Toledo. Yearly values for time of wetness are missing for six test sites the fourth year, which is twice as much as for the third year. The main reason is that either too few monthly values are reported or the percentage of values for each month is too low for generating a reliable yearly value.

For pH the largest deviation is observed at the sites Madrid (pH = 6.14), Venice (pH = 6.12) and Wells Cathedrals (pH = 6.22), which had higher values than the year before, and Stoke Orchard (pH = 3.18), which has had a trend towards lower values the last years. By comparing the observed yearly values for each site, it shows that the variation normally is low from one year to the next. 19 of the sites have a variation lower than 0.25 pH units, 14 sites are between 0.25 and 0.80 and only 6 sites have variations above 0.80 pH units.

When the ECE programme started it was important to find test sites with different concentrations of SO_2, NO_2 and H^+ (pH). The figures show that we have been reasonably successful in selecting sites. The yearly mean concentrations for SO_2 ranges from 1 µg/m^3 to 80 µg/m^3 with the majority of sites reporting values below 30 µg/m^3. For NO_2 the distribution is even better with yearly mean concentrations ranging from 4 to 80 µg/m^3 plus one site (Milan) with more than 100 µg/m^3.

The pH was between 3.9 and 6.2 and TOW between 1 800 and 6 000 hours per year. There are also fairly large observed variations for the other precipitation parameters at the different sites. Bilbao (SPA32) has had the highest concentrations of ions of all sites. Many of the test sites closer to the Atlantic ocean are more or less affected by marine aerosols contribution. This is particularly the case for the sites in the United Kingdom, Lisbon, two Norwegian sites and the sites in the Netherlands. In addition high chloride concentrations are observed at the Italian and Spanish sites.

8 Characterization of the air quality data

In report no. 9 Environmental data report September 1989 to August 1990 (Henriksen, 1992) an extensive statistical evaluation of the results for gas concentrations was carried out. The main conclusions drawn in this report are still valid and can be summarized as follows:

Mean, median and 90-percentile characteristics of the annual data series were in most cases in good agreement, however, when the data have a distribution that is far from symmetry, their differences may be substantial.

Little difference in the distribution of daily concentrations was found between the three yearly series. Most of the observed differences were due to unequal patterns of missing data. This indicates good quality of the daily reported data.

The three-year and one-year series of gaseous compounds were found to mostly obey log-normal law of distribution, however, the data did not fit either normal or log-normal distribution in more cases than what would be expected by chance. It may therefore be necessary to establish other models. It is reasonable to assume that the deviations from the distribution are to some extent due to seasonal variations, but this hypothesis was not tested.

When calculating annual means of concentrations, the seasonal differences are of most importance; therefore it may be reasonable to construct a rule based on seasonal availability of the data rather than on annual availability. Missing of two months in a season may probably be acceptable. However, as illustrated for O_3 site 17 four months of missing data will give a biased mean value.

When calculating monthly means, the rules for accepting the mean based on amount of available data were found reasonable. However, if we exclude daily data for calculation of annual means for other reasons than erroneous results, we are loosing information. Therefore we have chosen to use all available daily values for this calculation.

9 References

Henriksen, J.F., Arnesen, K. and Rode, A. (1991) Environmental data report, September 1987 to August 1989. Lillestrøm, Norwegian Institute for Air Research (UN/ECE international co-operative programme on effects on materials, including historic and cultural monuments. Report No. 3).

Henriksen, J.F., Bartonova, A., Arnesen, K. and Rode, A. (1992) Environmental data report, September 1989 to August 1990. Lillestrøm, Norwegian Institute for Air Research (UN/ECE international co-operative programme on effects on materials, including historic and cultural monuments. Report No. 9) (NILU OR 7/92).

The Swedish Corrosion Institute (1989) Description of test sites. Stockholm (UN/ECE international co-operative programme on effects on materials, including historic and cultural monuments. Report no. 2).

Tables and Figures

Table 1: Yearly mean values for all parameters and sites for first, second, third and fourth year of the programme.

		CLIMATE				GASES			PRECIPITATION						PRE.-OPTIONS				
SITE	YEAR	TEMP	RH	TOW	SUN	SO_2	NO_2	O_3	MM	pH	SO_4-S	NO_3-N	Cl	COND	NH_4-N	Na	Ca	Mg	K
CH 1	87-88	9.5	79	2830	1865	77.5	42.4		639.3	4.03	3.25		2.16	45.9		.55			.86
CH 1	88-89	9.8	75	3181	1563	74.2	32.6		385.6	4.71	7.86	.65	2.32	121.4		.97			.60
CH 1	89-90	10.3	74	2555	1848	58.1	34.2		380.8	4.66	6.43	1.02	3.93	40.9		1.98			1.12
CH 1	90-91	8.5	75	2940	1593	61.4	34.9		469.5	4.21	4.95	1.95	1.82	58.1					
CH 2	87-88	7.0	77	3011		19.7	17.9		850.2	3.85	1.48		.77	48.7		.41			.80
CH 2	88-89	7.0	77	3690		14.5	14.2		751.8	4.53	2.99	.94	1.12	22.8		.77			1.76
CH 2	89-90	7.4	76	3405		25.6	8.8		703.4	4.35	1.85	1.42	1.61	26.7		3.50			1.42
CH 2	90-91	5.8	79	2939		18.4	9.4		832.1	4.21	4.84	1.78	.60	38.3					
CH 3	87-88	9.6	73	2480	1665	83.3	42.2		426.4	4.39	11.12		2.21	70.9		1.22			1.14
CH 3	88-89	9.7	73	2273	1496	94.6	39.1		449.6	4.88	11.31	.56	1.45	72.4		1.50			1.28
CH 3	89-90	9.9	72	2056	1564	78.4	36.0		416.6	4.62	9.05	1.29	3.10	90.9		4.72			2.79
CH 3	90-91	8.6	73	2252	1484	75.9	35.1		416.4	4.31	10.47	1.09	1.13	119.7					
FIN 4	87-88	5.9	76	3322	1623	18.6	20.0		625.9	4.24	1.06	.41	.31	58.8					
FIN 4	88-89	6.0	77	3717	1904	11.8	17.6		768.6	4.39	1.70	.72	1.06	33.1					
FIN 4	89-90	6.4	80	4127	1926	13.9	20.7		657.0	4.41	1.88	.85	1.61	31.6					
FIN 4	90-91	5.2	82	3834	1627		24.9		649.8	4.36	2.99	1.05	1.75	32.8					
FIN 5	87-88	3.1	78	2810	1566	6.3	5.0	52	801.3	4.53	.71	.33	.26	19.1	.35	.05	.15	.02	.04
FIN 5	88-89	4.0	79	3159	1731	5.3	4.9	54	666.4	4.52	.61	.28	.28	18.7	.31	.13	.12	.02	.06
FIN 5	89-90	3.9	80	3342	1714	1.8	4.4	52	670.7	4.57	.47	.27	.28	16.6	.22	.13	.08	.02	.07
FIN 5	90-91	2.9	80	3012	1480	1.8	5.6	51	543.5	4.55	.57	.28	.24	18.0	.33	.16	.10	.03	.13
FIN 6	87-88	6.3	78	3453	1635	20.7	30.5		673.1	4.41	1.54	.46	.89	36.4					
FIN 6	88-89	6.7	78	3813	1904	17.4	27.4		691.0	4.42	2.63	1.08	2.11	39.2					
FIN 6	89-90	6.8	80	4017	1926	15.3	38.9		665.6	4.26	2.03	.82	1.97	44.0					
FIN 6	90-91	5.8	81	3820	1627	18.2	38.3		636.9	4.28	2.54	.98	2.33	42.2					

Table 1, cont.

		CLIMATE				GASES			PRECIPITATION						PRE.-OPTIONS				
SITE	YEAR	TEMP	RH	TOW	SUN	SO_2	NO_2	O_3	MM	pH	SO_4-S	NO_3-N	Cl	COND	NH_4-N	Na	Ca	Mg	K
FRG 7	87-88	9.3	80	4561	1374	13.7	11.3	59	630.6	4.26	1.59	.82	1.01	42.0	.92	.47	.56	.10	.13
FRG 7	88-89	10.0	81	4867	1374	11.4	13.0	69	448.4	4.35	1.47	.86	1.42	39.4	.95	.65	.72	.16	.18
FRG 7	89-90	10.2	80	4390		11.0	11.6	64	499.7	4.45	1.35	1.12	1.66	37.9	.94	.80	.67	.18	.19
FRG 7	90-91	8.9	81	4474		12.9	11.9	45	529.1	4.47	.99	.61	.98	28.2	.68	.46	.49	.12	.19
FRG 8	87-88	12.3	77	3508		23.7	33.2	27	626.9	4.96	2.44	1.17	1.87	44.6	1.33		1.87		
FRG 8	88-89	11.8	72	3756		14.6	44.8	26	673.8	4.61	2.10	1.08	2.09	50.3	1.54		1.41		
FRG 8	89-90	12.2	67	2541		14.2	39.5	31	655.4	4.39	2.63	.93	2.75	75.3	3.62				
FRG 8	90-91	10.9	65	4227		18.9	38.0	29	653.8	4.94	2.20	.90	1.89	48.5	1.49		2.77	2.01	
FRG 9	87-88	10.7	77	4220	1315	24.5	42.8		782.9										
FRG 9	88-89	11.2	78	4754	1475	25.7	49.9		686.0										
FRG 9	89-90	11.7	80	4940	1624	20.3	44.4		697.6	4.44	1.75	.74	1.75	39.0	1.11	1.41	.92	.18	.26
FRG 9	90-91	7.9	80	4365	1471	23.8	45.8		661.7	4.41	1.88	.77	1.41	38.1	1.84	.89	1.17	.19	.39
FRG10	87-88	11.2	75	4077	1430	50.6	47.9		873.8										
FRG10	88-89	11.6	76	4594	1690	48.6	49.5		733.7										
FRG10	89-90	12.0	76	4107	1812	48.5	46.4		696.6	4.60	2.69	.81	5.35	54.6	1.34	2.22	1.72	.38	1.28
FRG10	90-91	8.4	78	4002	1644	53.0	46.8	27	619.4	4.30	2.38	.71	1.79	43.7	1.36	1.23	1.35	.28	.36
FRG11	87-88	10.5	79	4537	1430	30.3	46.8		713.1										
FRG11	88-89	10.9	78	4711	1690	27.6	44.3		663.9										
FRG11	89-90	11.5	77	4040	1812	25.6	41.7		644.5	4.38	1.95	.87	2.22	43.5	1.25	1.67	1.09	.20	.32
FRG11	90-91	8.0	80	4216	1644	24.4	41.9		577.5	4.43	1.74	.73	1.36	31.3	1.20	1.11	1.12	.17	.35
FRG12	87-88	7.5	82		1598	9.4	12.1	51	1491.5										
FRG12	88-89	7.9	84	4983	1629	13.4	14.0	49	1185.4	4.81	.87	.52	.25	20.4	.59	.23	.53		.05
FRG12	89-90	7.3	82	4201	1940	6.1	14.3	55	1183.1	4.77	.86	.49	.25	18.5	.55	.21	.45		.05
FRG12	90-91	7.6	82		1722	5.2	12.6	57	1118.3	4.81	.68	.53	.23	17.6	.58	.11	.30		.04

Table 1, cont.

		CLIMATE				GASES			PRECIPITATION						PRE.-OPTIONS				
SITE	YEAR	TEMP	RH	TOW	SUN	SO_2	NO_2	O_3	MM	pH	SO_4-S	NO_3-N	Cl	COND	NH_4-N	Na	Ca	Mg	K
ITA13	87-88	15.4	66	1013		29.4	69.2	26	591.4	4.60									
ITA13	88-89	16.1	62	1611		44.9	69.5	27	509.3	4.68									
ITA13	89-90	17.4	65	2267		38.5	62.5	23	463.3	4.74									
ITA13	90-91	16.3	67			24.4	73.3	19	480.5	4.76				34.1					
ITA14	87-88	14.6	71	3578					650.2	4.94	.80	.04	1.30	20.7		.48			.06
ITA14	88-89	14.0	70	2996					674.2	4.80	1.01	.10	7.99	38.5					
ITA14	89-90	14.3	72	3714		7.4	8.3	56	626.1	5.38	.76	.11	2.11	38.8					
ITA14	90-91	15.1	72	3577		6.4	18.8	45	721.0	5.05	.86	.15	2.62	32.9		2.22	2.00	.81	.26
ITA15	87-88	15.3	72	3548		72.2	109.2	18	1124.7	4.22	13.20		4.82						
ITA15	88-89	14.9	79	3458		82.7	99.1	16	1003.7	4.50	8.60	5.41	2.71	57.3	1.51	1.86	4.50	.63	.24
ITA15	89-90	15.4	72	3036		65.4	120.9	22	659.8	4.19	4.26	2.57	3.28	76.5	1.82	1.15	5.33	.92	.41
ITA15	90-91	14.2	69	2941		50.3	107.8	21	658.4	4.54	4.84	3.07	2.34	45.1	1.62	.47	1.47	.16	1.83
ITA16	87-88	14.5	76	3561		21.1	40.9	21	714.0	5.02	3.70	.89	3.58	56.6					
ITA16	88-89	14.7	82	4530		25.7	40.7	29	535.8	4.90	4.69	1.13	4.32	72.0					
ITA16	89-90	13.5	79	4148		20.2	51.0	31	488.0	5.24	3.70	1.10	3.21	59.1					
ITA16	90-91	12.9	80	4565		16.4	47.7	14	809.9	6.12	2.18	.77	3.56	48.7					
NL 17	87-88	10.5	84	5875	1313	35.3	52.1	28	977.7	4.44	1.52	.51	4.86	48.6	.91	2.49	.51	.32	.15
NL 17	88-89	11.0	83	5589	1663	31.8	57.2	33	685.9	4.41	1.55	.59	4.61	48.9	1.01	2.53	.33	.31	.18
NL 17	89-90	11.3	81	4996	1810	32.5	56.7	32	692.0	4.42	1.79	.54	7.64	59.7	.95	4.20	.45	.51	.26
NL 17	90-91	9.7	84	5293	1474	30.6	53.8	28	722.6	4.48	1.81	.66	4.44	50.4	1.18	2.35	.50	.30	.24
NL 18	87-88	9.9	83	5459	1230	10.1	23.2	40	904.2	5.45	1.52	.54	1.88	30.1	1.79	1.11	.22	.11	.11
NL 18	88-89	10.2	82	5280	1507	8.0	26.9	46	710.5	5.50	1.38	.54	2.87	32.2	1.77	2.33	.21	.19	.12
NL 18	89-90	10.9	79	4482	1643	8.5	26.5	47	705.9	5.34	1.63	.60	2.96	35.6	1.78	1.77	.24	.18	.28
NL 18	90-91	9.1	79	4422	1410	9.5	24.6	38	701.8	5.51	1.22	.49	1.68	25.6	1.46	1.19	.15	.11	.15

Table 1, cont.

		CLIMATE				GASES			PRECIPITATION						PRE.-OPTIONS				
SITE	YEAR	TEMP	RH	TOW	SUN	SO_2	NO_2	O_3	MM	pH	SO_4-S	NO_3-N	Cl	COND	NH_4-N	Na	Ca	Mg	K
NL 19	87-88	10.3	81	5354	1292	13.0	28.7	36	845.0	5.32	1.61	.57	1.50	31.0	1.75	.95	.33	.12	.12
NL 19	88-89	10.8	81	5282	1585	10.2	33.4	39	693.3	5.33	1.61	.60	2.00	30.9	1.83	1.07	.28	.14	.09
NL 19	89-90	11.0	81	4969	1709	9.9	33.1	45	569.1	5.31	2.29	.69	3.58	43.6	2.12	2.09	.40	.28	.26
NL 19	90-91	9.3	80	4401	1484	10.4	33.4	37	543.9	5.74	1.68	.53	1.82	30.2	1.92	1.08	.21	.11	.19
NL 20	87-88	10.3	81	5125	1290	13.7	28.9	39	801.3	4.73	1.63	.66	1.61	35.4	1.29	.94	.69	.15	.14
NL 20	88-89	10.8	80	5208	1553	11.2	32.0	42	642.2	4.65	1.59	.65	1.72	35.4	1.37	.94	.48	.12	.11
NL 20	89-90	11.2	77	4424	1698	10.3	26.9	45	608.8	4.98	1.47	.54	2.37	32.0	1.18	1.41	.51	.19	.20
NL 20	90-91	9.5	83	4824	1434	12.9	31.7	39	647.0	4.93	1.68	.60	1.52	31.5	1.54	.84	.44	.12	.17
NOR21	87-88	7.6	70	2673	1565	14.4	51.7		1023.8	4.48	1.36	.62	1.45	29.3	.37	.64	1.72		
NOR21	88-89	7.9	70	2580	1747	12.6	51.9	22	576.8	4.66	2.08	.66	1.72	35.5	.43	.72	2.64		
NOR21	89-90	8.8	70	2864	1841	7.9	46.8	16	526.6	4.49	1.73	.70	1.86	38.1	.53	.91	1.58	.17	.14
NOR21	90-91	7.0	75	3013	1686	8.6	51.9		433.1	4.71	1.41	.64	1.64	30.5	.66	.87	1.51	.19	.17
NOR22	87-88	6.0	78	3064		35.8	19.2		1115.5	3.93	2.93	.71	2.21	63.8	1.11	1.14	.46		
NOR22	88-89	6.9	74	3445		54.0	18.3		535.4	3.96	3.28	.97	4.85	74.9	1.46	2.47	.97		
NOR22	89-90	6.8	76	3678		41.5	16.4		517.5	4.07	2.42	.64	3.67	64.9	1.44	1.80	.52	.23	.38
NOR22	90-91	6.7	77	3599		30.7	18.0		286.2	3.96	2.70	.99	4.10	73.5	1.59	1.75	.56	.22	.24
NOR23	87-88	6.5	80	4831	1717	1.3	3.9	60	2144.3	4.25	.93	.56	2.04	32.2	.57	1.19	.15	.14	.17
NOR23	88-89	7.5	76	4043	2002	1.1	4.0	53	1160.6	4.26	1.07	.70	2.47	39.9	.69	1.40	.20	.18	.20
NOR23	89-90	7.4	77	4193	1901	.9	3.1	54	1762.2	4.38	.87	.56	2.88	35.2	.50	1.61	.39	.19	.15
NOR23	90-91	6.1	80	4114	1820	1.1	3.1	55	1287.6	4.35	.92	.53	3.35	36.2	.52	1.78	.32	.22	.17
SWE24	87-88	7.6	78	3959	1616	16.8	26.5	44	531.0	4.35	1.14	.52	.42	31.7	.51	.23	.27	.05	.04
SWE24	88-89	8.4	67	2543	1978	12.6	31.2	47	412.0	4.28	1.16	.45	.49	32.0	.39	.22	.32	.05	.03
SWE24	89-90	8.7	70	3074	1837	8.4	31.6	52	473.2	4.44	.90	.41	.44	23.9	.34	.24	.93	.05	.11
SWE24	90-91	7.3	72	3643	1527	6.3	27.3	39	643.4	4.57	.61	.32	.34	18.1	.31	.20	.20	.04	.02

Table 1, cont.

		CLIMATE				GASES			PRECIPITATION						PRE.-OPTIONS				
SITE	YEAR	TEMP	RH	TOW	SUN	SO_2	NO_2	O_3	MM	pH	SO_4-S	NO_3-N	Cl	COND	NH_4-N	Na	Ca	Mg	K
SWE25	87-88	7.6	78	3959	1616	19.6	45.8		531.0	4.35	1.14	.52	.42	31.7	.51	.23	.27	.05	.04
SWE25	88-89	9.1	67	2543	1978	20.0	45.4		412.0	4.28	1.16	.45	.49	32.0	.39	.22	.32	.05	.03
SWE25	89-90	8.7	70	3074	1831	10.3	40.2		473.2	4.44	.90	.41	.44	23.9	.34	.24	.93	.05	.11
SWE25	90-91	7.3	72	3643	1527	2.7	26.2		643.4	4.57	.61	.32	.34	18.1	.31	.20	.20	.04	.02
SWE26	87-88	6.0	83	4534	1673	3.3	5.1	55	542.7	4.27	1.30	.60	.54	32.6	.71	.40	.27	.08	.11
SWE26	88-89	6.9	77	3407	1902	1.9	4.5	61	377.0	4.28	1.31	.64	.61	34.6	.78	.44	.26	.07	.11
SWE26	89-90	7.6	77	3469	1817	2.0	4.8	59	342.3	4.37	1.02	.56	.63	32.6	.52	.45	.20	.07	.14
SWE26	90-91	6.1	80	3315	1555	2.6	3.8	54	516.5	4.46	.84	.44	.74	25.7	.46	.50	.17	.07	.08
UK 27	87-88	9.2	84	6230		17.7	68.6		364.9	4.86	1.69	.75	2.09	41.4	.98	.66	2.74	.13	.34
UK 27	88-89	10.7	83	5583		19.6	54.2		288.8	4.11	2.22	.75	5.20	67.0	.91	2.24	1.85	.30	.18
UK 27	89-90	11.1	81	5510		15.5	33.0		308.2	4.20	1.67	.47	3.34	42.9	.55	1.33	1.29	.24	.13
UK 27	90-91	10.0	87	6310		20.2	28.3		206.3	4.30	2.14	.81	4.62	67.4	.98	2.15	1.76	.42	.48
UK 28	87-88	11.2	86	5715		7.2	21.5		447.1	5.44	1.22	.32	4.11	46.3	.88	3.47	.93	.32	.48
UK 28	88-89	12.2	75	5625		6.6	24.7		455.6	5.42	1.21	.43	3.75	51.2	1.91	2.97	1.02	.29	2.00
UK 28	89-90	12.7	82	5995		6.9	25.1		415.8	5.09	1.64	.39	6.89	58.6	1.88	5.13	1.03	.39	1.60
UK 28	90-91	12.0	88	6628		5.0	22.1		535.6	6.22	2.87	.76	7.86	90.9	5.82	5.71	1.50	.51	4.15
UK 29	87-88	9.8				4.3	2.3	49	1702.9	4.82	.66	.19	4.08		.27	2.36	.32	.38	.15
UK 29	88-89	10.9				3.2	4.1	62	1683.5	4.61	.84	.20	4.74		.29	2.65	.32	.28	.19
UK 29	89-90	10.7	96			3.5	4.2	57	2046.3	4.84	1.18	.06	10.87		.32	6.00	.74	.60	.49
UK 29	90-91	6.7				5.2	4.6	45											
UK 30	87-88	10.2	78	3763		15.0	86.0		609.5	4.12	2.17	.55	3.87		.19	1.68	1.08	.21	.22
UK 30	88-89	9.2	75	6163		9.1	34.2	89	628.8	4.13	1.89	.36	4.43		.92	1.85	1.07	.28	.19
UK 30	89-90			5873		12.1	30.0		648.2	3.84	1.38	.29	5.05		.44	2.20	.80	.31	.24
UK 30	90-91			5200		27.4	39.2		498.5	3.18	2.37	.36	4.59		2.96	1.82	2.47	.38	.79

Table 1, cont.

		CLIMATE				GASES			PRECIPITATION						PRE.-OPTIONS				
SITE	YEAR	TEMP	RH	TOW	SUN	SO_2	NO_2	O_3	MM	pH	SO_4-S	NO_3-N	Cl	COND	NH_4-N	Na	Ca	Mg	K
SPA31	87-88	14.1	66	2762	2606	18.4	24.3	26	398.0	5.26	1.43	.33	.61	26.5	.75	.84	1.71	.23	.15
SPA31	88-89	15.0	52	974	2894	18.1	31.9		322.1	6.42	2.49	.45	.69	25.9	.57	.63	1.89	.21	.19
SPA31	89-90	16.3	54	1160	2648	15.3	22.8		331.5	5.14	1.23	.45	.73	31.7	.65	.65	2.69	.18	.11
SPA31	90-91	14.4	57	1555	2843	10.3	20.1		307.9	6.14	1.26	.37	.62	25.8	.71	.78	1.91	.21	.10
SPA32	87-88	15.2	74	4221	1368	35.2	34.7		1355.4	4.73	8.95	2.28	6.67	54.9	1.88	2.69	3.69		
SPA32	88-89	15.3	73	4245	1840	49.1	43.0		773.5	5.32	14.26	3.54	9.71	79.0	2.92	3.28	7.02		
SPA32	89-90	16.2	71	3769	1879	41.4	41.8		830.7	4.71	13.26	3.83	9.00	78.9	2.51	3.28	6.86		
SPA32	90-91	13.9	74	4536	1577	23.5	31.6		1110.8	5.00	8.61	2.98	6.65	57.1	2.03	2.75	4.33	.00	.00
SPA33	87-88	14.0	64	2275	2432	3.3	9.1		785.0	5.27	.45	.12	.51	11.2	.12	.65	.49	.12	.24
SPA33	88-89	15.1	59	1848	2665	8.6	14.8		426.9	5.23	.59	.10	.47	13.4	.21	.45	.58	.08	.08
SPA33	89-90	15.5	61	2147	2573	13.5	16.3		610.4	6.20	.60	.20	.72	11.3	.24	.74	1.21	.12	.14
SPA33	90-91	13.9	56	945	2609	6.0	16.1		477.1	5.74	.41	.17	.54	13.4	.18	.47	.56	.09	.06
RUS34	87-88	5.5	73	2084	1580	19.2	74.9		575.4	6.18	1.44	.06	1.30	28.8	1.15				
RUS34	88-89	7.0	75	2682	1590	25.5	69.5		612.7	4.89	3.09	.15	.53	45.8	.80				
RUS34	89-90	5.7	76	2894	1592	30.8	50.1		860.2	6.22	2.56	.14	.33	29.4	.45				
RUS34	90-91	6.0	75	2589	1502	26.0	53.2		801.8	6.12	2.35	.15	.43	38.5	.35				
EST35	87-88	5.5	83	4092	1571	.9	2.9		447.8	4.66	1.11	.30			.28	.39	.88		
EST35	88-89	6.9	80	3609	1871	.3	3.8		588.5	4.50	.87	.30			.23	.56	.29		
EST35	89-90	6.7	81	4332	1850	.6	6.5		532.7	4.65	.75	.31	.81	19.9	.20	.55	.51	.08	.42
EST35	90-91	5.5	83	4272	1634		5.3		564.0	4.76	.81	.26	.48	15.1	.12	.28	1.06	.05	.29
POR36	87-88	12.1	64	1575		6.8	36.8		972.0	6.06	11.63	1.01	3.18	63.5	.43	2.73	2.56		.34
POR36	88-89	17.8	61	2338	4560	11.9	21.5	35	625.4	5.46	9.80	1.71	4.15	62.0	.55	2.74	4.07	.64	.58
POR36	89-90	19.3	63	3033	3758	6.6	32.9	29	1103.1	5.57	5.31	1.90	3.99	53.2	.59	2.52	1.95	.42	.45
POR36	90-91	18.2	62			11.3	30.1	42	954.5	5.37		1.45	3.37	51.0	.63	4.08	1.97	.36	.50

Table 1, cont.

		CLIMATE				GASES			PRECIPITATION						PRE.-OPTIONS				
SITE	YEAR	TEMP	RH	TOW	SUN	SO_2	NO_2	O_3	MM	pH	SO_4-S	NO_3-N	Cl	COND	NH_4-N	Na	Ca	Mg	K
CAN37	87-88	5.5	75	3252	2138	3.3	1.6	59	961.1	4.27	.89	.62	.14	27.9	.42	.07	.26		
CAN37	88-89	4.8	73	2676	1985	4.2	2.0	60	953.6	4.33	.81	.51	.12	24.8	.36	.06	.18		
CAN37	89-90	5.1	79	3431	1996	3.0	2.0	64	1103.0	4.38	.76	.53	.11	25.0	.34	.04	.22		
CAN37	90-91	5.9	79	3566	2061	2.7	1.0	50	1057.0	4.34	.75	.46	.08	23.8	.31	.03	.14		
USA38	87-88	14.6	69	3178	2610	9.6	26.9	54	846.7	4.29	.73	.28	.36	24.9	.18	.17	.06	.03	.04
USA38	88-89	15.0	66		2229	10.0	25.3	51	1412.8	4.29	.75	.28	.24	23.4	.19	.10	.05	.02	.03
USA38	89-90	16.3	49		2421	9.2	25.3	57	1106.7	4.45	.61	.24	.36	19.6	.26	.16	.06	.02	.03
USA38	90-91	15.5	51		2238	7.9	25.2	52	1093.3	4.43	.59	.28	.47	20.9	.16	.21	.08	.03	.04
USA39	87-88	12.3	67	2111	1942	58.1	41.8	42	733.1	4.00	1.76	.51	.48	54.0	.32	.09	.40	.07	.07
USA39	88-89	10.9	64	1781	1769	59.4	44.8	36	932.8	3.91	1.82	.49	.35	54.9	.42	.05	.35	.06	.04
USA39	89-90	11.2	61	1319	1713	55.2	40.5	33	967.4	4.08	2.00	.46	.46	46.3	.35	.09	.56	.08	.06
USA39	90-91	13.6	59	1737	1787	64.2	50.9	44	937.6	3.88	1.74	.52	.83	45.4	.41	.29	.87	.25	.19

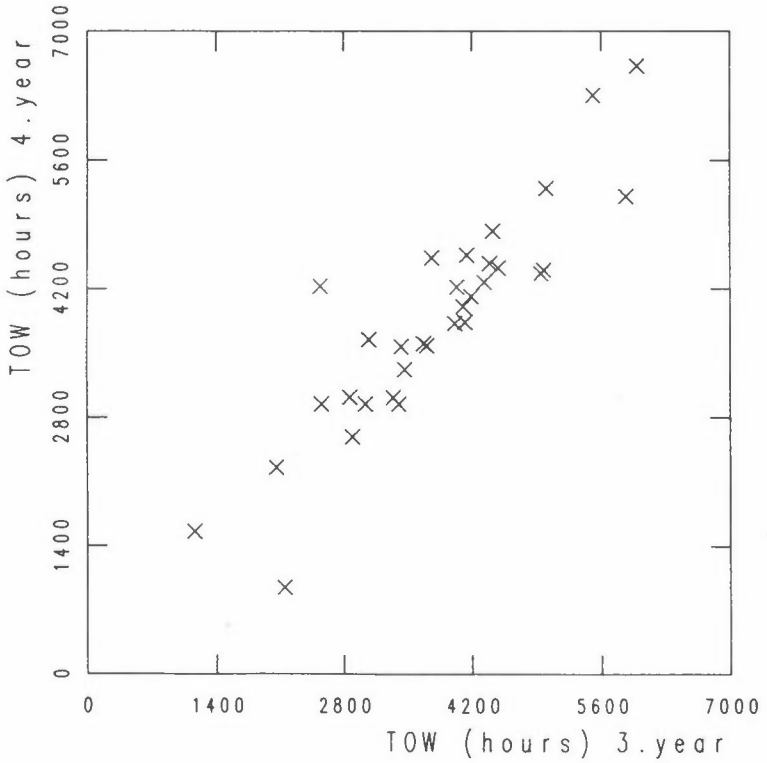

Figure 1: Scatterplot for TOW yearly mean values for the third versus the fourth year results.

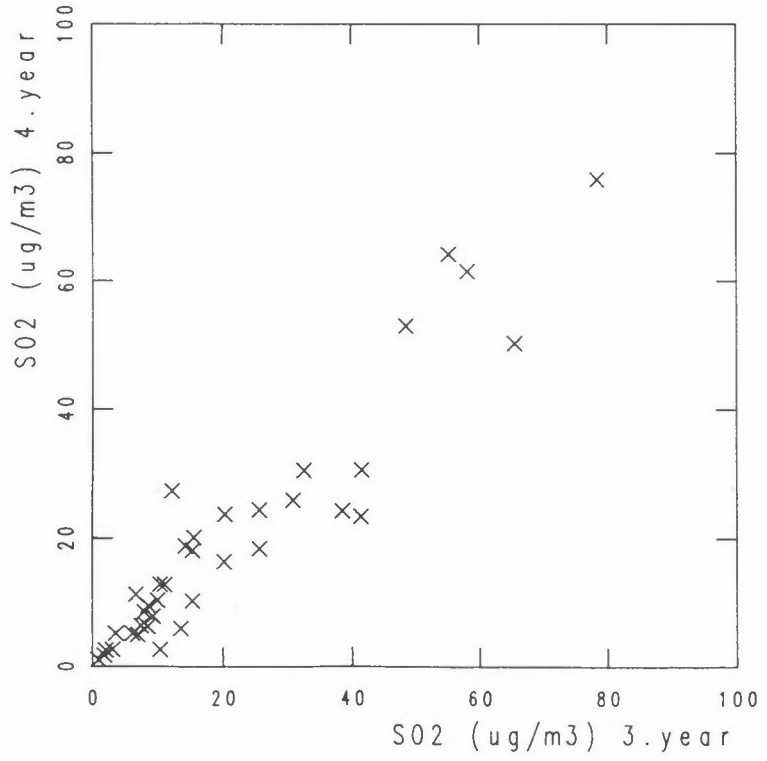

Figure 2: Scatterplot for SO_2 yearly mean values for the third versus the fourth year results.

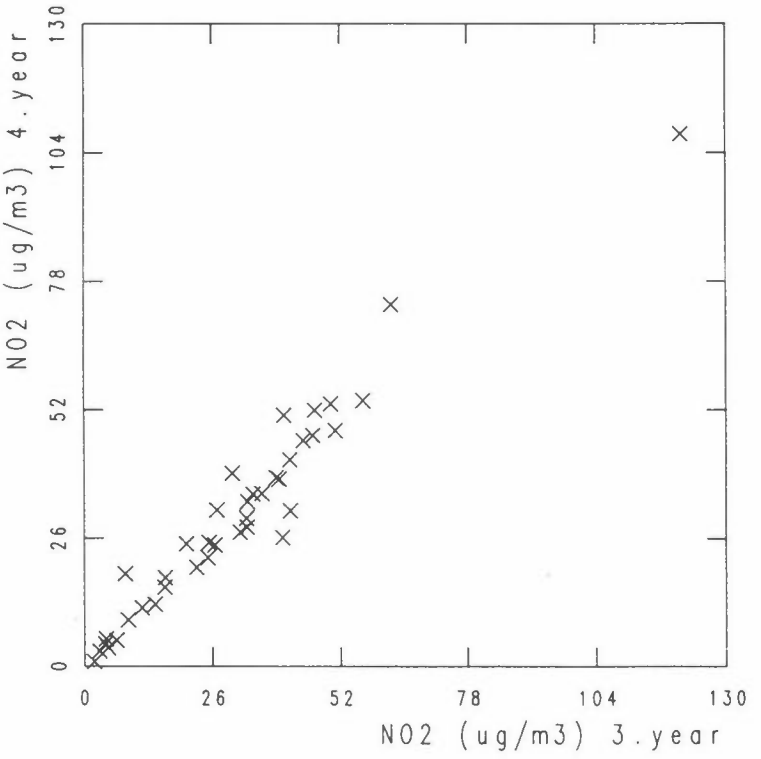

Figure 3: Scatterplot for NO2 yearly mean values for the third versus the fourth year results.

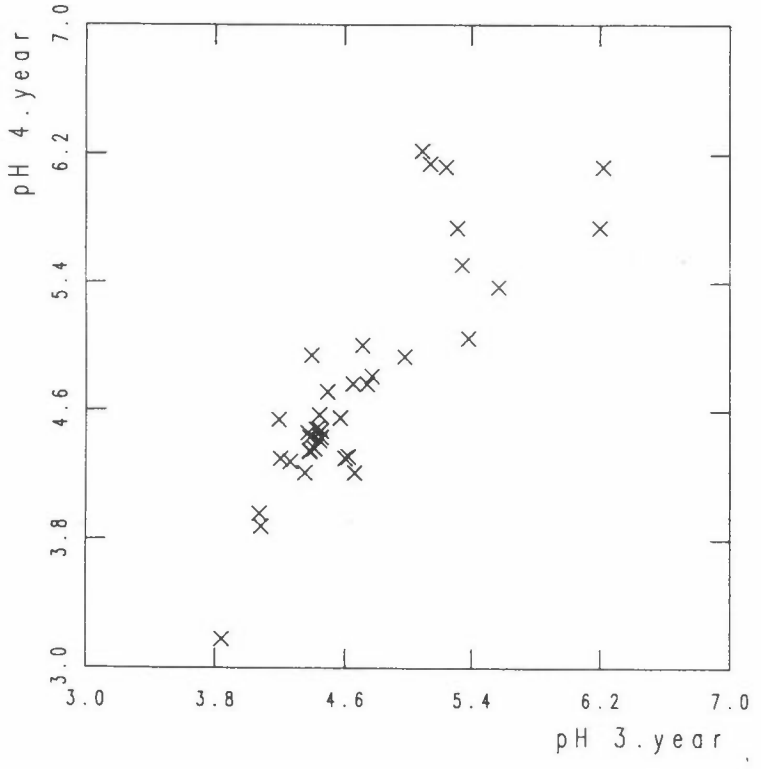

Figure 4: Scatterplot for pH yearly mean values for the third versus the fourth year results.

Annex 1

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (01) Prague-Letnany, Czechoslovakia

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	12.0	77.	336.	111.	49.4	36.0		48.5	5.57	3.00	2.04	3.00	60.9					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Oct90	9.6	78.	350.	161.	37.7			38.0		3.20	.23	2.00						
	d	d	d	d	m			d		m	m	m						
	100%	100%	100%	100%				100%										
Nov90	4.4	88.	459.	31.	76.6			63.2		1.70	.81	1.00						
	d	d	d	d	m			d		m	m	m						
	100%	100%	100%	100%				100%										
Dec90	.3	85.	173.	56.	73.7			19.3		3.00	.92	2.00						
	d	d	d	d	m			d		m	m	m						
	100%	100%	100%	100%				100%										
Jan91	1.3	79.	136.	79.	87.6	35.2		8.0	5.42	5.30	2.30	4.00	65.0					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Feb91	-3.0	78.	49.	109.	120.9	44.9		11.3	4.71	28.00	9.70	17.50	210.0					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Mar91	6.2	80.	374.	56.	83.6	36.5		28.4	3.83	3.00	1.20	1.00	68.5					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Apr91	7.8	71.	265.	145.	44.3	30.4		23.6	3.79	4.50	1.80	5.00	128.0					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
May91	8.8	67.	149.	163.	45.6	35.6		37.3	3.88	13.50	6.00	.80	81.5					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	96%				100%										
Jun91	15.6	67.	188.	218.	58.9	27.0		89.9	4.63	3.50	2.50	.50	31.5					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Jul91	20.1	67.	211.	263.	18.3	28.2		46.4	4.42	1.70	.70	.50	36.5					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Aug91	18.5	68.	250.	202.	40.5	40.4		55.6	4.12	8.00	1.00	1.00	34.0					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Mean	8.5	75.	2940.	1593.	61.4	34.9		469.5	4.21	4.95	1.95	1.82	58.1					
	d	d	d	d	m	*m		d	*m	m	m	m	*m					
	100%	100%	100%	99%				100%										

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	9.5	83.	476.		6.5	9.0		63.6		.67	.81	.50						
	d	d	d		m	m		d		m	m	m						
	100%	100%	100%					100%										
Oct90	6.9	85.	499.		8.7	8.2		53.4		1.17	.23	.50						
	d	d	d		m	m		d		m	m	m						
	100%	100%	100%					100%										
Nov90	2.3	91.	263.		20.2	11.9		90.7		1.17	.46	.50						
	d	d	d		m	m		d		m	m	m						
	100%	100%	100%					100%										
Dec90	-2.8	89.	118.		28.9	19.0		43.2		1.67	.69	.50						
	d	d	d		m	m		d		m	m	m						
	100%	100%	100%					100%										
Jan91	-1.1	78.	149.		28.3	11.7		21.5	4.79	1.80	.80	1.50	26.0					
	d	d	d		m	m		d	m	m	m	m	m					
	100%	100%	100%					100%										
Feb91	-5.2	77.	34.		38.6	12.0		21.3	5.15	3.30	1.70	1.50	40.0					
	d	d	d		m	m		d	m	m	m	m	m					
	100%	100%	100%					100%										
Mar91	3.2	82.	267.		18.9	9.4		37.1	5.17	12.00	3.00	.50	47.0					
	d	d	d		m	m		d	m	m	m	m	m					
	100%	100%	100%					100%										
Apr91	4.5	72.	193.		16.6	6.6		32.5	3.80	12.00	7.00	.50	35.0					
	d	d	d		m	m		d	m	m	m	m	m					
	100%	100%	100%					100%										
May91	7.0	73.	278.		17.8	6.6		56.5	3.95	10.00	6.50	.50	52.0					
	d	d	d		m	m		d	m	m	m	m	m					
	100%	100%	100%					100%										
Jun91	12.5	69.	196.		8.1	7.0		144.6	3.96	3.00	1.00	.50	27.0					
	d	d	d		m	m		d	m	m	m	m	m					
	100%	100%	100%					100%										
Jul91	16.8	71.	198.		14.1	6.6		186.9	4.37	4.00	1.50	.50	21.0					
	d	d	d		m	m		d	m	m	m	m	m					
	100%	100%	100%					100%										
Aug91	15.4	73.	268.		14.3	4.5		80.8	6.45	13.00	2.00	1.00	89.0					
	d	d	d		m	m		d	m	m	m	m	m					
	100%	100%	100%					100%										
Mean	5.8	79.	2939.		18.4	9.4		832.1	4.21	4.84	1.78	.60	38.3					
	d	d	d		m	m		d	*m	m	m	m	*m					
	100%	100%	100%					100%										

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (03) Kopisty, Czechoslovakia

	CLIMATE				GASES			PRECIPITATION						PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	12.4	71.	215.	105.	37.2	21.4		43.4		10.70	.23	1.00						
	d	d	d	d	m	m		d		m	m	m						
	100%	100%	100%	100%				100%										
Oct90	8.7	80.	386.	138.	66.7	43.0		32.2		7.30	.23	1.50						
	d	d	d	d	m	m		d		m	m	m						
	100%	100%	100%	100%				100%										
Nov90	4.8	81.	329.	29.	70.3	34.3		46.9		4.00	.23	.50						
	d	d	d	d	m	m		d		m	m	m						
	100%	100%	100%	100%				100%										
Dec90	.4	83.	157.	28.				19.9		13.00	1.02	2.50						
	d	d	d	d				d		m	m	m						
	100%	100%	100%	100%				100%										
Jan91	.7	78.	131.	50.	106.6	43.5		4.0	5.29	23.40	1.20	3.00	242.0					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Feb91	-3.4	79.	39.	83.	107.8	44.6		9.7	5.00	27.50	3.05	5.50	342.0					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Mar91	5.7	79.	343.	40.	70.6	40.1		13.0	5.18	14.10	3.05	2.50	212.0					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Apr91	7.8	66.	173.	153.	58.3	20.9		34.8	5.91	20.90	2.00	2.00	253.0					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
May91	10.5	65.	115.	173.	84.8	30.5		26.9	4.47	7.90	1.30	.60	131.0					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Jun91	15.4	64.	135.	202.	92.0	39.6		61.4	5.54	4.60	.70	.50	69.0					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Jul91	20.6	64.	75.	273.	67.4			63.5	4.25	5.60	1.00	.50	74.0					
	d	d	d	d	m			d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Aug91	18.6	69.	154.	210.	72.8	33.0		60.7	3.86	18.00	2.00	1.00	74.0					
	d	d	d	d	m	m		d	m	m	m	m	m					
	100%	100%	100%	100%				100%										
Mean	8.6	73.	2252.	1484.	75.9	35.1		416.4	4.31	10.47	1.09	1.13	119.7					
	d	d	d	d	m	m		d	*m	m	m	m	*m					
	100%	100%	100%	100%				100%										

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

	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						P R E C. - O P T I O N				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	9.6	82.	420.	102.		22.0		89.7	4.30	1.80	.60	.90	28.0					
	m	m	m	d		m		m	m	m	m	m	m					
				100%														
Oct90	5.6	85.	464.	84.		17.0		63.8	4.50	2.40	.70	1.40	33.0					
	m	m	m	d		m		d	m	m	m	m	m					
				100%				100%										
Nov90	.3	88.	382.	43.		23.0		70.5	4.60	6.50	2.70	4.80	22.0					
	m	m	m	d		m		d	m	m	m	m	m					
				100%				100%										
Dec90	-.7	89.	272.	23.		19.0		46.1	4.20	3.65	2.13	5.47	57.0					
	m	m	m	d		m		d	m	m	m	m	m					
				100%				100%										
Jan91	-2.6	87.	227.	35.		21.0		78.4	4.30	1.10	.60	1.50	27.0					
	m	m	m	m		m		d	m	m	m	m	m					
								100%										
Feb91	-5.2	86.	138.	66.		39.0		18.0	4.30	4.30	2.10	2.90	72.0					
	d	m	m	m		m		d	m	m	m	m	m					
	100%							100%										
Mar91	-.6	86.	260.	91.		33.0		36.2	4.20	9.40	1.80	1.70	53.4					
	m	m	m	m		m		d	m	m	m	m	m					
								100%										
Apr91	2.9	76.	255.	164.				25.8	4.20	6.10	2.10	1.50	53.5					
	m	m	m	d				d	m	m	m	m	m					
				100%				100%										
May91	7.7	69.	243.	253.				40.9	4.50	1.20	.30	.50	24.0					
	m	m	m	d				d	m	m	m	m	m					
				100%				100%										
Jun91	12.0	77.	422.	210.				72.9	4.30	2.80	.70	.80	35.0					
	m	m	m	d				d	m	m	m	m	m					
				100%				100%										
Jul91	17.4	74.	293.	307.				18.5	4.70	1.00	.10	.40	15.0					
	m	m	m	d				d	m	m	m	m	m					
				100%				100%										
Aug91	16.5	81.	458.	249.		25.0		89.0	4.50	.80	.30	.20	22.0					
	m	m	m	d		m		d	m	m	m	m	m					
				100%				100%										
Mean	5.2	82.	3834.	1627.		24.9		649.8	4.36	2.99	1.05	1.75	32.8					
	m	m	m	m		*m		m	m	m	m	m	m					

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

	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						P R E C. - O P T I O N				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	6.5	83.	423.	70.	.5	3.6	36.	45.4	4.69	.41	.18	.17	12.4	.14	.15	.10	.02	.08
	d	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%			100%	100%	100%	100%	100%	99%	99%	99%	99%	99%	96%	96%	99%	99%	96%
Oct90	3.4	85.	405.	91.	1.0	3.5	47.	17.4	4.55	.56	.32	.26	17.5	.24	.15	.23	.04	.10
	d	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	97%	97%	97%	97%	97%
Nov90	-4.5	89.	204.	42.	1.3	5.7	43.	39.1	4.50	.29	.34	.20	16.7	.13	.08	.04	.01	.04
	d	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%			100%	100%	86%	100%	100%	99%	99%	99%	99%	99%	93%	93%	96%	96%	93%
Dec90	-3.2	89.	156.	15.	2.7	6.3	42.	38.6	4.25	.93	.60	.62	34.1	.48	.38	.11	.05	.09
	d	m	m	d	d	*d	d	d	d	d	d	d	d	d	d	d	d	d
	100%			100%	100%	74%	100%	100%	98%	98%	98%	98%	98%	97%	97%	98%	98%	97%
Jan91	-6.3	86.	66.	41.	2.9	7.3	45.	36.0	4.47	.44	.30	.48	19.5	.17	.29	.07	.04	.05
	d	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%				100%	93%	100%	100%	99%	99%	99%	99%	99%	98%	98%	98%	98%	98%
Feb91	-10.2	83.	87.	84.	6.2	9.9	44.	11.3	4.26	.66	.68	.27	30.0	.35	.18	.11	.03	.07
	d	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%				100%	96%	100%	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Mar91	-2.9	81.	120.	107.	4.5	6.3	64.	52.2	4.39	.66	.36	.27	23.2	.27	.14	.07	.02	.03
	d	m	m	m	d	*d	d	d	d	d	d	d	d	d	d	d	d	d
	100%				100%	74%	100%	100%	100%	100%	100%	100%	100%	98%	98%	98%	98%	98%
Apr91	2.3	69.	162.	192.	1.1	4.9	70.	19.4	4.42	1.22	.55	.36	28.5	.84	.28	.22	.05	.10
	d	m	m	d	d	xd	d	d	d	d	d	d	d	d	d	d	d	d
	100%			100%	100%	16%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May91	5.7	70.	264.	181.	.5		62.	39.2	4.60	.61	.25	.12	16.8	.30	.14	.16	.04	.09
	d	m	m	d	d		d	d	d	d	d	d	d	d	d	d	d	d
	100%			100%	100%		100%	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Jun91	11.9	74.	333.	179.	.4		67.	106.6	4.65	.65	.23	.16	16.7	.46	.11	.13	.06	.26
	d	m	m	d	d		d	d	d	d	d	d	d	d	d	d	d	d
	100%			100%	100%		93%	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Jul91	16.0	70.	321.	277.			51.	30.8	4.93	.45	.13	.15	13.8	.65	.18	.05	.04	.43
	d	m	m	d			d	d	d	d	d	d	d	d	d	d	d	d
	100%			100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	98%	100%	100%	98%
Aug91	14.7	80.	471.	201.	.4	2.0	40.	107.5	4.74	.42	.15	.17	12.0	.24	.09	.07	.02	.07
	d	m	m	d	d	*d	xd	d	d	d	d	d	d	d	d	d	d	d
	100%			100%	100%	67%	48%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean	2.9	80.	3012.	1480.	1.8	5.6	51.	543.5	4.55	.57	.28	.24	18.0	.33	.16	.10	.03	.13
	d	m	m	m	d	*d	d	d	d	d	d	d	d	d	d	d	d	d
	100%				100%	58%	95%	100%	99%	99%	99%	99%	99%	98%	98%	99%	99%	98%

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

	CLIMATE				GASES			PRECIPITATION						PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	9.6	82.	420.	102.	11.0	35.0		89.7	4.40	2.10	.70	1.30	31.0					
	d	m	m	d	m	m		d	m	m	m	m	m					
	100%			100%				100%										
Oct90	6.2	85.	504.	84.	14.0	32.0		81.2	4.50	1.80	.60	1.60	39.0					
	d	m	m	d	m	m		d	m	m	m	m	m					
	100%			100%				100%										
Nov90	.3	88.	382.	43.	22.0	43.0		65.7	4.40	6.10	2.70	6.40	29.0					
	d	m	m	d	m	m		d	m	m	m	m	m					
	100%			100%				100%										
Dec90	.0	88.	336.	23.	25.0	37.0		36.9	4.10	3.40	1.80	4.90	76.0					
	d	m	m	d	m	m		d	m	m	m	m	m					
	100%			100%				100%										
Jan91	-2.0	86.	264.	35.	20.0	42.0		77.4	4.30	.80	.50	1.70	35.0					
	d	m	m	m	m	m		d	m	m	m	m	m					
	100%							100%										
Feb91	-5.2	86.	138.	66.	40.0	49.0		18.1	4.00	1.00	2.30	3.70	120.0					
	d	m	m	m	m	m		d	m	m	m	m	m					
	100%							100%										
Mar91	.0	85.	294.	91.	19.0	47.0		38.5	4.10	4.50	1.70	4.40	67.3					
	d	m	m	m	m	m		d	m	m	m	m	m					
	100%							100%										
Apr91	3.7	78.	276.	164.	18.0	53.0		15.8	4.30	6.10	1.45	2.70	62.5					
	d	m	m	d	m	m		d	m	m	m	m	m					
	100%			100%				100%										
May91	8.2	68.	204.	253.	13.0	31.0		40.9	4.20	1.70	.50	1.60	39.0					
	d	m	m	d	m	m		d	m	m	m	m	m					
	100%			100%				100%										
Jun91	12.7	79.	390.	210.	16.0	27.0		65.0	4.20	3.30	.80	1.50	42.0					
	d	m	m	d	m	m		d	m	m	m	m	m					
	100%			100%				100%										
Jul91	18.0	71.	240.	307.	11.0	26.0		22.6	4.40	1.20	.20	.50	31.0					
	d	m	m	d	m	m		d	m	m	m	m	m					
	100%			100%				100%										
Aug91	17.5	77.	372.	249.	10.0	38.0		85.1	4.30	1.10	.30	.60	32.0					
	d	m	m	d	m	m		d	m	m	m	m	m					
	100%			100%				100%										
Mean	5.8	81.	3820.	1627.	18.2	38.3		636.9	4.28	2.54	.98	2.33	42.2					
	d	m	m	m	m	m		d	m	m	m	m	m					
	100%							100%										

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (07) Waldhof-Langenbrugge, Fed.Rep.of Germany

	CLIMATE				GASES			PRECIPITATION						PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	12.7	85.	485.		3.3	10.0	46.	94.7	4.43	.99	.61	1.10	30.5	.53	.50	.36	.13	.15
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	99%	93%	93%	93%	99%	93%	93%	93%	93%	93%
Oct90	10.8	82.	422.		27.8	14.3	51.	25.0	4.36	1.45	.72	.50	34.5	.88	.19	.55	.09	.13
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	94%	94%	94%	94%	94%	94%	94%	94%	94%	94%
Nov90	5.5	95.	639.		8.0	18.6	24.	58.3	4.54	1.09	.61	1.38	28.7	.57	.67	.71	.19	.24
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	98%	95%	95%	95%	98%	95%	95%	95%	95%	95%
Dec90	1.8	92.	485.		21.5	18.6	26.	60.6	4.60	.71	.43	.90	21.4	.50	.44	.23	.08	.08
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	98%	97%	97%	97%	98%	97%	97%	97%	97%	97%
Jan91	2.5	85.	430.		17.0	14.0	34.	25.7	4.55	.48	.44	.63	24.6	.29	.29	.39	.09	.13
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		90%	96%	96%	100%	99%	87%	87%	87%	99%	87%	87%	87%	87%	87%
Feb91	-2.7	84.	116.		33.8	17.0	36.	14.0	4.23	.56	.73	.38	35.8	.18	.13	.56	.07	.12
	d	d	d		d	d	d	d	d	*d	*d	*d	d	*d	*d	*d	*d	*d
	100%	100%	100%		96%	96%	100%	100%	95%	65%	65%	65%	95%	65%	65%	65%	65%	65%
Mar91	6.6	81.	378.		22.9	12.9	35.	19.6	5.01	.91	.61	.84	25.9	1.51	.31	.23	.08	.14
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		96%	96%	100%	100%	100%	90%	90%	90%	100%	90%	90%	90%	90%	90%
Apr91	7.3	72.	244.		7.6	7.9	56.	7.8	4.74	2.53	1.33	5.69	60.5	2.63	2.80	1.52	.41	.52
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		96%	100%	100%	100%	94%	92%	92%	92%	94%	92%	92%	92%	92%	92%
May91	10.1	75.	320.		2.1	6.5	53.	31.7	4.40	1.23	.70	2.18	31.8	.81	1.13	.71	.23	.38
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		87%	93%	93%	100%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%
Jun91	13.9	75.	316.		3.3	8.7	58.	69.5	4.47	.84	.58	.71	25.5	.37	.30	.49	.11	.18
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		90%	100%	93%	100%	99%	93%	93%	93%	97%	91%	91%	91%	91%	91%
Jul91	20.1	68.	230.		4.4	7.3	56.	20.1	4.14	1.69	1.37	.85	50.1	1.10	.42	.97	.15	.38
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		96%	100%	100%	100%	99%	94%	94%	94%	99%	96%	94%	94%	94%	94%
Aug91	17.8	77.	409.		2.7	7.1	61.	102.1	4.51	.94	.51	.44	22.5	.82	.20	.43	.08	.19
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	99%	98%	98%	98%	99%	98%	98%	98%	98%	98%
Mean	8.9	81.	4474.		12.9	11.9	45.	529.1	4.47	.99	.61	.98	28.2	.68	.46	.49	.12	.19
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		96%	98%	98%	100%	98%	94%	94%	94%	98%	94%	93%	93%	93%	93%

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (08) Aschaffenburg, Fed.Rep.of Germany

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	13.9	70.	182.		8.2	29.6		83.6	4.87	2.44	.98	3.62	35.8	.93				
	m	m	d		*d	xd		m	m	m	m	m	m	m				
			100%		66%	40%												
Oct90	12.4	69.	562.		13.0	39.0	21.	54.5	5.04	1.43	.53	1.00	26.4	.49				
	m	m	m		m	m	m	m	m	m	m	m	m	m				
Nov90	6.2	79.	762.		14.0	37.0	11.	118.2	4.56	1.05	.59	.76	25.0	.54				
	m	m	m		m	m	m	m	m	m	m	m	m	m				
Dec90	2.1	77.	569.			45.0	11.	65.8										
	m	m	m			m	m	m										
Jan91	3.5	67.	311.		30.0	36.0	20.	41.6										
	m	m	m		m	m	m	+m										
Feb91	.3	67.	151.		61.0	54.0	18.	67.0										
	m	m	m		m	m	m	+m										
Mar91	9.1	65.	379.		23.0	40.0	25.	49.8										
	m	m	m		m	m	m	+m										
Apr91	10.0	57.	246.		18.0	36.0	45.	13.4	6.88	10.39	3.22	4.68	160.2	2.02		4.71	12.61	
	m	m	m		m	m	m	m	m	m	m	m	m	m		m	m	
May91	12.5	59.	358.		15.0	32.0	41.	34.8	6.59	3.85	1.30		66.3	2.72		1.47	1.14	
	m	m	m		m	m	m	m	m	m	m		m	m		m	m	
Jun91	16.3	62.	405.		6.0	25.0	42.	78.1	7.10	1.99	.88		83.0	3.49		3.79	.73	
	m	m	m		m	m	m	m	m	m	m		m	m		m	m	
Jul91	22.8	53.	150.		11.0	28.0		26.6	6.71	1.92	.85		46.9	1.24		1.27	1.67	
	m	m	m		m	m		m	m	m	m		m	m		m	m	
Aug91	22.1	53.	152.		9.0	46.0	56.	20.4	6.92	3.00	1.32		61.1	2.10		1.80	1.91	
	m	m	m		m	m	m	m	m	m	m		m	m		m	m	
Mean	10.9	65.	4227.		18.9	38.0	29.	653.8	4.94	2.20	.90	1.89	48.5	1.49		2.77	2.01	
	m	m	m		m	m	m	m	*m	*m	*m	xm	*m	*m		xm	xm	

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (09) Langenfeld-Reusrath, Fed.Rep.of Germany

	CLIMATE				GASES			PRECIPITATION						PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	12.5	86.	490.	75.	12.7	43.8		62.2	4.26	1.78	.92	.88	37.8	1.45	.48	.62	.16	.36
	d	d	m	m	d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			76%	100%		100%										
Oct90	12.6	79.	412.	133.	11.3	49.2		48.4		.94	.36	.54		5.87	.34	.42	.16	.30
	d	d	m	m	d	d		d		m	m	m		m	m	m	m	m
	100%	100%			80%	93%		100%										
Nov90	6.5	91.	596.	46.	20.0	46.1		52.2	4.12	2.44	.60	1.20	30.2	2.57	1.25	1.58	.23	.20
	d	d	m	m	d	d		d	m	m	m	m	m	m	m	m	m	m
	96%	96%			96%	83%		100%										
Dec90	3.1	89.	469.	33.	26.9	45.5		80.3	4.58	2.10	.61	2.60	40.2	1.92	1.27	.88	.21	.10
	d	d	m	m	d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	100%		100%										
Jan91	3.2	78.	291.		26.5	45.1		42.5	4.33	.90	.27	.91	17.7	.51	.55	.32	.07	.06
	d	d	m		d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	100%		100%										
Feb91	-.1	78.	130.		58.5	58.0		20.5	4.03	3.64	1.92	4.67	87.6	1.79	3.44	3.46	.33	.48
	d	d	m		d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	96%		100%										
Mar91	8.9	76.	366.		25.7	54.8		52.6	4.68	2.25	.91	.84	36.5	1.89	.65	1.30	.16	.34
	d	d	m		d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	100%		100%										
Apr91	8.5	70.	255.		22.5	43.1		34.7	4.41	2.60	1.12	3.02	60.4	2.91	1.83	1.66	.43	.41
	d	d	m		d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	100%		100%										
May91	10.6	76.	363.		19.2	38.2		30.6	4.50	1.98	.91	2.16	42.7	1.46	1.11	1.00	.17	.81
	d	d	m		d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	90%		100%										
Jun91	13.6	79.	378.		14.2	34.3		92.8	4.43	1.96	.74	1.27	40.3	1.29	1.04	1.21	.15	.80
	d	d	m		d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	76%		100%										
Jul91			315.					94.9	4.54	1.64	.85	.84	33.2	.88	.40	1.43	.14	.39
			m					+m	m	m	m	m	m	m	m	m	m	m
Aug91			300.					50.0	4.69	1.40	.80	.67	28.6	.94	.33	1.44	.24	.40
			m					m	m	m	m	m	m	m	m	m	m	m
Mean	7.9	80.	4365.	1471.	23.8	45.8		661.7	4.41	1.88	.77	1.41	38.1	1.84	.89	1.17	.19	.39
	m	m	m	+	m	m		m	m	m	m	m	m	m	m	m	m	m

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (10) Bottrop, Fed.Rep.of Germany

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	13.1	82.	446.	83.	35.0	45.6	20.	83.0	4.54	1.91	.93	.90	45.3	1.43	.36	1.06	.15	.25
	d	d	m	m	d	d	xd	d	m	m	m	m	m	m	m	m	m	m
	100%	100%			83%	96%	46%	100%										
Oct90	12.6	77.	372.	145.	41.9	51.4	21.	34.9		1.41	.46	.72		1.01	1.03	.85	.28	.54
	d	d	m	m	d	d	d	d		m	m	m		m	m	m	m	m
	100%	100%			96%	80%	100%	100%										
Nov90	6.5	88.	542.	42.	52.2	46.0	11.	66.2	3.63	2.32	.72	2.06	42.3	1.32	1.71	1.26	.37	.36
	d	d	m	m	d	d	d	d	m	m	m	m	m	m	m	m	m	m
	100%	100%			90%	100%	100%	100%										
Dec90	3.8	87.	489.	35.	54.0	37.5	14.	79.4	4.51	2.15	.52	2.91	40.0	.96	1.61	.89	.27	.05
	d	d	m	m	d	d	d	d	m	m	m	m	m	m	m	m	m	m
	100%	100%			83%	100%	100%	100%										
Jan91	3.9	79.	320.		70.3	43.3	17.	40.3	4.51	2.43	.39	2.95	37.9	1.21	.63	1.07	.23	.19
	d	d	m		d	d	d	d	m	m	m	m	m	m	m	m	m	m
	100%	100%			83%	100%	100%	100%										
Feb91	.0	75.	95.		109.2	69.0	17.	14.0	4.43	4.00	.64	2.95	62.6	1.80	1.47	2.65	.34	.28
	d	d	m		d	d	d	d	m	m	m	m	m	m	m	m	m	m
	100%	100%			89%	85%	96%	100%										
Mar91	9.7	73.	278.		54.6	54.5	25.	25.3	4.98	3.26	.50	1.33	38.0	1.46	.77	1.80	.26	.27
	d	d	m		d	*d	d	d	m	m	m	m	m	m	m	m	m	m
	100%	100%			83%	67%	100%	100%										
Apr91	9.3	71.	269.		43.7	48.1	46.	33.6	5.72	2.95	.99	2.66	50.5	1.96	3.92	2.13	.30	.53
	d	d	m		d	d	d	d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	93%	100%	100%										
May91	11.2	74.	333.		35.2	35.2	49.	26.0	4.88	2.31	.61	2.79	46.9	1.92	2.40	1.19	.26	.17
	d	d	m		d	d	d	d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	96%	100%	100%										
Jun91	13.6	73.	349.		34.1	37.4	44.	97.9	4.63	2.98	.91	1.31	49.6	1.73	1.00	1.63	.18	.43
	*d	d	m		*d	*d	*d	d	m	m	m	m	m	m	m	m	m	m
	73%	76%			70%	70%	70%	100%										
Jul91			267.					65.1	4.56	1.98	.70	.96	35.5	.83	.49	1.58	.58	.82
			m					+m	m	m	m	m	m	m	m	m	m	m
Aug91			242.					53.7										
			m					+m										
Mean	8.4	78.	4002.	1644.	53.0	46.8	27.	619.4	4.30	2.38	.71	1.79	43.7	1.36	1.23	1.35	.28	.36
	m	m	m	+	m	m	*m	m	m	m	m	m	m	m	m	m	m	m

ECE-PROGRAMME ON EFFECTS ON MATERIALS SITE: (11) Essen-Leithe, Fed.Rep.of Germany

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	12.9	85.	491.	83.	14.8	42.7		59.8	4.32	1.65	.79	1.25	36.1	1.18	.45	.75	.16	.56
	d	d	m	m	d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			80%	100%		100%										
Oct90	12.8	80.	434.	145.	14.3	41.2		27.2		1.53	.33	.56		1.19	.97	.89	.28	.35
	d	d	m	m	d	d		d		m	m	m		m	m	m	m	m
	100%	100%			96%	93%		100%										
Nov90	6.3	91.	599.	42.	28.7	49.0		55.6	3.86	1.51	.67	1.55	31.0	1.17	1.67	.75	.21	.18
	d	d	m	m	d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	90%		100%										
Dec90	3.4	85.	447.	35.	29.8	41.0		62.8	4.80	1.75	1.24	2.81	37.3	1.26	1.50	.68	.22	.12
	d	d	m	m	d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	100%		100%										
Jan91	3.5	79.	308.		28.1	40.8		48.8	4.56	1.04	.23	1.39	18.9	.45	.78	.37	.08	.07
	d	d	m		d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	100%		100%										
Feb91	-.4	81.	118.		70.5	51.1		7.5	4.20	3.40	1.27	3.23	65.3	1.71	1.14	1.81	.24	.22
	d	d	m		d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	100%		100%										
Mar91	9.2	76.	314.		17.1	48.1		25.7	4.68	2.22	.73	1.32	35.3	1.65	.77	1.40	.17	.28
	d	d	m		d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	96%		100%										
Apr91	8.6	72.	260.		17.0	40.9		28.0	4.87	2.04	.93	2.52	49.2	2.15	3.12	1.79	.27	.47
	d	d	m		d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			93%	93%		100%										
May91	10.5	76.	353.		13.8	33.6		34.8	4.52	2.60	.73	1.94	54.8	2.35	2.72	.85	.14	.19
	d	d	m		d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			100%	100%		100%										
Jun91	13.6	77.	336.		10.0	31.0		80.7	4.49	2.12	.82	1.05	43.0	1.21	1.32	1.42	.14	.58
	d	d	m		d	d		d	m	m	m	m	m	m	m	m	m	m
	100%	100%			96%	100%		100%										
Jul91			299.					70.1	4.61	1.49	.69	.71	27.5	.53	.41	1.74	.13	.64
			m					+m	m	m	m	m	m	m	m	m	m	m
Aug91			257.					76.5	4.99	1.51	.59	.41	.0	1.22	.22	1.45	.20	.23
			m					m	m	m	m	m	m	m	m	m	m	m
Mean	8.0	80.	4216.	1644.	24.4	41.9		577.5	4.43	1.74	.73	1.36	31.3	1.20	1.11	1.12	.17	.35
	m	m	m	+	m	m		m	m	m	m	m	m	m	m	m	m	m

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	11.1	84.		146.				120.7	4.40	.37	.29	.13	9.7	.80	.06	.18		.02
	m	m		m				m	m	m	m	m	m	m	m	m		m
Oct90				154.				126.5	4.84	.28	.22	.10	7.5	.23	.05	.14		.01
				m				m	m	m	m	m	m	m	m	m		m
Nov90				75.				78.0	5.50	.55	.38	.26	13.8	.28	.24	.23		.04
				m				m	m	m	m	m	m	m	m	m		m
Dec90				47.				37.9	5.71	.78	.46	.65	19.4	.21	.36	.20		.05
				m				m	m	m	m	m	m	m	m	m		m
Jan91	-3.6	94.			10.0	25.8	25.	33.7	4.99	.50	.35	.25	17.5	.44	.14	.14		.02
	m	m			m	m	m	m	m	m	m	m	m	m	m	m		m
Feb91	-3.7	86.			15.4	21.1	43.	11.9	4.53	.68	.49	.55	20.4	.26	.39	.40		.04
	m	m			m	m	m	m	m	m	m	m	m	m	m	m		m
Mar91	5.6	82.			5.4	13.6	43.	67.9	5.50	.74	.49	.21	15.6	.70	.14	.35		.02
	m	m			m	m	m	m	m	m	m	m	m	m	m	m		m
Apr91	4.9	78.			2.9	8.2	65.	78.1	4.96	.73	.76	.19	24.5	.76	.05	.24		.02
	m	m			m	m	m	m	m	m	m	m	m	m	m	m		m
May91	7.1	82.			2.6	8.8	74.	157.5	4.34	1.55	1.36	.49	43.3	.97	.22	.48		.07
	m	m			m	m	m	m	m	m	m	m	m	m	m	m		m
Jun91	13.3	77.			1.7	6.1	69.	163.6	5.47	.51	.34	.14	10.6	.48	.05	.37		.07
	m	m			m	m	m	m	m	m	m	m	m	m	m	m		m
Jul91	17.5	78.			2.0	8.4	72.	164.7	5.31	.52	.39	.13	12.5	.48	.04	.22		.02
	m	m			m	m	m	m	m	m	m	m	m	m	m	m		m
Aug91	16.4	79.			1.7	9.2	68.	77.8	5.73	.81	.56	.18	16.6	.79	.07	.60		.11
	m	m			m	m	m	m	m	m	m	m	m	m	m	m		m
Mean	7.6	82.		1722.	5.2	12.6	57.	1118.3	4.81	.68	.53	.23	17.6	.58	.11	.30		.04
	*m	*m		+	*m	*m	*m	m	m	m	m	m	m	m	m	m		m

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

	CLIMATE				GASES			PRECIPITATION						PREC. -	
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l
Sep90	21.9	68.	195.		50.5	70.4	28.	25.5	4.60						
	m	m	m		m	m	m	m	m						
Oct90	18.8	75.	155.		42.8	88.8	12.	110.5	4.95						
	m	m	m		m	m	m	m	m						
Nov90	11.1	66.	111.		70.3	110.9	10.	33.4	4.30						
	m	m	m		m	m	m	m	m						
Dec90	10.0	68.	175.		57.7	89.3	6.	58.8	4.82						
	m	m	m		m	m	m	m	m						
Jan91	8.4	70.			14.3	52.3		.0							
	d	d			d	d		m							
	100%	100%			100%	100%									
Feb91	9.1	70.			9.8	58.8		62.9	4.59				38.5		
	d	d			d	d		d	d				d		
	100%	100%			100%	100%		100%	100%				100%		
Mar91	14.6	62.			8.1	75.6		9.6	5.90				27.8		
	d	d			d	d		d	d				d		
	100%	100%			100%	100%		100%	100%				100%		
Apr91	13.0	67.			6.1	58.7		48.0	4.90				34.3		
	d	d			d	*d		d	d				d		
	100%	100%			90%	60%		100%	100%				100%		
May91	15.9	60.			4.7	54.7		129.4	4.90				32.4		
	d	d			d	d		d	d				d		
	100%	100%			90%	83%		100%	100%				100%		
Jun91								.0							
								m							
Jul91	28.5				2.7		31.	.0							
	*d				*d		*d	m							
	58%				58%		58%								
Aug91	27.8				1.6		29.	2.4							
	d				d		d	d							
	96%				96%		96%	100%							
Mean	16.3	67.			24.4	73.3	19.	480.5	4.76				34.1		
	m	*m			m	*m	*m	m	m				*m		

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

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	20.0	76.	343.		3.3	17.1	65.	.0										
	d	d	d		*d	*d	*d	d										
	100%	100%	100%		73%	73%	70%											
Oct90	19.4	83.	482.		3.1	21.7	39.	177.2	5.76	.75	.26	.71	26.4					
	d	d	d		*d	d	d	d	d	d	d	d	d					
	100%	100%	100%		67%	100%	93%	100%	100%	100%	100%	100%	100%					
Nov90	16.1	82.	436.		3.8	24.3	40.	96.9	4.75	1.65	.22	2.30	42.0					
	d	d	d		*d	xd	*d	d	d	xd	xd	xd	d					
	100%	100%	100%		66%	13%	63%	100%	100%	9%	9%	9%	100%					
Dec90	7.2	75.	335.		9.9	12.2	32.	117.3	5.32				30.0					
	d	d	d		*d	xd	*d	d	d				d					
	100%	100%	100%		67%	16%	67%	100%	100%				100%					
Jan91	6.9	71.	280.		18.1		4.	.0										
	d	d	d		*d		*d	d										
	100%	100%	100%		51%		58%											
Feb91	5.9	71.	244.					58.8	4.69	1.18	.16	5.75	49.1	4.40	1.39	.81	.37	
	d	d	d					d	d	d	d	d	d	d	d	d	d	
	92%	92%	92%					100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Mar91	11.7	70.	229.		6.4	5.9	49.	29.3	4.51	1.28	.11	1.19	41.3	.92	2.27	.86	.29	
	d	d	d		*d	xd	*d	d	d	d	d	d	d	d	d	d	d	
	90%	90%	90%		64%	35%	64%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Apr91	10.2	77.	344.		6.1	13.7	57.	131.0	5.20	.69	.08	3.81	25.7	1.89	2.22	.59	.27	
	d	d	d		*d	xd	*d	d	d	d	d	d	d	d	d	d	d	
	86%	86%	86%		60%	33%	60%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
May91	12.7	72.	259.		5.4	10.8	64.	110.5	5.11	.88	.06	3.02	36.0	1.79	1.99	1.05	.19	
	d	d	d		*d	*d	*d	d	d	d	d	d	d	d	d	d	d	
	87%	87%	87%		58%	54%	58%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Jun91	19.9	69.	268.		2.4	33.7	36.	.0										
	d	d	d		d	*d	d	d										
	100%	100%	100%		76%	73%	76%											
Jul91	24.7	57.	146.		6.2	7.0	55.	.0										
	d	d	d		d	xd	d	d										
	100%	100%	100%		100%	9%	100%											
Aug91	25.0	61.	186.		8.5		51.	.0										
	d	d	d		*d		d	d										
	87%	87%	87%		74%		90%											
Mean	15.1	72.	3577.		6.4	18.8	45.	721.0	5.05	.86	.15	2.62	32.9	2.22	2.00	.81	.26	
	d	d	d		*d	xd	*d	d	d	*d	*d	*d	d	xd	xd	xd	xd	
	95%	95%	95%		63%	34%	67%	100%	100%	71%	71%	71%	100%	45%	45%	45%	45%	

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

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	21.2	70.	176.		14.9	129.3	18.	4.2	4.01	2.45	2.09	.66	50.0	2.36	.46	2.03	.27	.23
	d	d	d		d	d	d	d	d	m	m	m	m	m	m	m	m	m
	100%	100%	100%		100%	100%	100%	100%	100%									
Oct90	15.4	84.	427.		35.2	111.5	6.	182.6	4.53	1.64	.84	.41	27.3	1.25	.21	.76	.11	.06
	d	d	d		d	d	d	d	d	m	m	m	m	m	m	m	m	m
	100%	100%	100%		100%	100%	100%	100%	99%									
Nov90	7.8	82.	431.		87.3	117.1	5.	53.4	4.25									
	d	d	d		d	d	d	d	d									
	100%	100%	100%		100%	100%	100%	100%	98%									
Dec90	3.0	75.	229.		107.9	125.3	5.	49.8	4.10									
	d	d	d		d	d	d	d	d									
	100%	100%	100%		100%	100%	100%	100%	98%									
Jan91	3.8	80.	412.		97.7	104.6	4.	49.0	4.10	9.07	6.30	6.47	86.2	1.83	.98	.20	.09	4.11
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb91	3.7	72.	119.		127.9	162.1	5.	10.2	5.44				88.0					
	d	d	d		d	d	d	d	m				m					
	100%	100%	100%		100%	100%	100%	100%										
Mar91	12.4	74.	347.		49.3	101.5	10.	48.2	4.70	14.12	6.88	8.01	102.1	1.25	1.94	7.34	.46	5.97
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr91	12.8	64.	203.		32.4	100.4	22.	134.8	5.54	4.37	2.12	1.54	33.6	1.98	.28	1.14	.17	1.22
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May91	15.8	62.	244.		20.2	97.2	30.	39.2	4.65	4.96	4.90	2.00	44.0	1.30	.18	1.10	.13	2.03
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun91	21.7	55.	152.		10.6	90.4	42.	40.2	5.28	4.49	4.32	2.01	40.0	2.33	.29	.69	.12	3.01
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jul91	26.6	55.	120.		13.4	101.9	51.	30.6	5.88	5.25	5.55	2.91	42.3	1.90	.40	1.41	.21	3.31
	d	d	d		d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug91	25.9	55.	81.		12.7	58.2	52.	16.2	5.62				40.4					
	d	d	d		d	d	d	d	d				d					
	100%	100%	100%		100%	100%	100%	100%	100%				100%					
Mean	14.2	69.	2941.		50.3	107.8	21.	658.4	4.54	4.84	3.07	2.34	45.1	1.62	.47	1.47	.16	1.83
	d	d	d		d	d	d	d	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%		100%	100%	100%	100%										

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	18.5	82.	430.		13.7	58.7	30.	26.0	6.94	2.02	.91	3.00	51.8					
	d	d	d		*d	d	d	d	d	d	d	d	d					
	100%	100%	100%		73%	86%	86%	100%	100%	100%	100%	100%	100%					
Oct90	14.1	88.	478.		41.1	51.4	14.	201.0	6.17	.82	.62	1.30	29.8					
	d	d	d		xd	*d	d	d	d	d	d	d	d					
	100%	100%	100%		48%	61%	90%	100%	100%	100%	100%	100%	100%					
Nov90	8.5	87.	461.		22.2	33.6	10.	38.0	6.26	6.00	.68	10.00	64.0					
	d	d	d		*d	d	d	d	d	d	d	d	d					
	100%	100%	100%		73%	93%	100%	100%	100%	100%	100%	100%	100%					
Dec90	3.5	83.	414.		30.2	48.8	10.	39.0	6.30	.70	.46	9.00	47.0					
	d	d	d		d	d	d	m	m	m	m	m	m					
	100%	100%	100%		87%	80%	93%											
Jan91	3.7	81.	362.		19.2	42.0	7.	58.0	5.24	1.61	.95	5.21	48.1					
	d	d	d		d	xd	d	d	d	d	d	d	d					
	100%	100%	100%		100%	45%	93%	100%	100%	100%	100%	100%	100%					
Feb91	3.1	78.	270.		22.1	63.1	11.	30.0	6.40	3.60	.77	2.60	57.0					
	d	d	d		d	*d	*d	d	d	d	d	d	d					
	100%	100%	100%		100%	50%	53%	100%	100%	100%	100%	100%	100%					
Mar91	9.7	84.	523.		4.3	42.9	20.	49.0	6.54	4.17	.21	2.87	82.3					
	d	d	d		d	d	d	d	d	d	d	d	d					
	100%	100%	100%		100%	83%	83%	100%	100%	100%	100%	100%	100%					
Apr91	11.9	75.	314.					67.0	6.47	2.11	.61	7.06	65.9					
	d	d	d					d	d	d	d	d	d					
	100%	100%	100%					100%	100%	100%	100%	100%	100%					
May91	14.1	77.	378.					121.0	6.73	1.26	.51	2.12	30.3					
	d	d	d					d	d	d	d	d	d					
	100%	100%	100%					100%	100%	100%	100%	100%	100%					
Jun91	19.8	79.	385.		1.1			110.9	6.60	1.79	.82	1.41	40.0					
	d	d	d		d			d	d	d	d	d	d					
	100%	100%	100%		100%			100%	100%	100%	100%	100%	100%					
Jul91	24.4	72.	273.		15.9			40.0	8.26	6.20	2.20	7.20	107.0					
	d	d	d		d			d	d	d	d	d	d					
	100%	93%	96%		80%			100%	100%	100%	100%	100%	100%					
Aug91	23.5	71.	261.		8.5			30.0	6.91	4.91	2.15	4.06	83.9					
	d	d	d		d			d	d	d	d	d	d					
	90%	90%	90%		83%			100%	100%	100%	100%	100%	100%					
Mean	12.9	80.	4565.		16.4	47.7	14.	809.9	6.12	2.18	.77	3.56	48.7					
	d	d	d		*d	xd	*d	m	m	m	m	m	m					
	99%	98%	98%		70%	41%	50%											

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

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	13.7	84.	446.	105.	18.3	42.1	28.	108.1	4.60	1.76	.52	6.39	54.0	1.08	3.91	.36	.48	.28
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					93%	90%	86%											
Oct90	12.5	86.	514.	105.	43.9	50.1	19.	51.6	4.65	1.31	.41	3.55	34.0	.80	1.86	.56	.22	.13
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Nov90	6.4	94.	627.	35.	38.5	46.9	12.	97.0	4.48	1.06	.52	4.62	42.0	.57	2.35	.20	.29	.11
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					86%	86%	93%											
Dec90	4.6	88.	553.	24.	34.7	41.6	17.	59.9	4.64	1.25	.35	12.25	64.0	.52	6.03	.40	.75	.31
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Jan91	3.5	85.	468.	74.	37.0	58.6	14.	39.6	4.56	1.08	.31	4.51	40.2	.63	2.28	.24	.29	.13
	m	m	m	m	d	d	m	w	w	w	w	w	w	w	w	w	w	w
					93%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb91	-.4	88.	258.	64.	54.5	83.2	10.	24.9	4.86	2.44	.86	4.05	52.0	1.55	2.87	.95	.27	.91
	m	m	m	m	d	d	m	w	w	w	w	w	w	w	w	w	w	w
					100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar91	8.8	83.	443.	122.	36.9	65.5	18.	31.8	4.76	3.09	1.10	.85	48.0	2.68	.48	.78	.09	.14
	m	m	m	m	d	d	m	w	w	w	w	w	w	w	w	w	w	w
					100%	93%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr91	8.5	76.	317.	200.	23.0	53.1	44.	23.8	4.91	2.38	.84	7.91	64.4	1.86	4.16	.99	.54	.64
	m	m	m	m	d	d	m	w	w	w	w	w	w	w	w	w	w	w
					100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May91	9.5	83.	464.	159.	11.9	45.7	43.	42.3	4.43	2.12	1.15	4.84	61.1	1.85	2.66	.47	.34	.18
	m	m	m	m	d	d	m	w	w	w	w	w	w	w	w	w	w	w
					100%	96%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun91	12.8	82.	421.	143.	23.3	41.9	38.	58.1	4.81	2.53	.82	3.67	51.0	1.91	1.99	.70	.29	.39
	m	m	m	m	d	d	m	w	w	w	w	w	w	w	w	w	w	w
					100%	96%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jul91	18.6	80.	390.	206.	24.3	56.7	47.	169.3	4.22	2.04	.76	1.26	51.6	1.20	.39	.60	.09	.12
	m	m	m	m	d	d	m	w	w	w	w	w	w	w	w	w	w	w
					100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug91	18.0	80.	392.	237.	23.1	61.0	43.	16.2	4.53	2.19	.82	1.68	43.6	1.41	1.08	.60	.11	.63
	m	m	m	m	d	d	m	w	w	w	w	w	w	w	w	w	w	w
					100%	93%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean	9.7	84.	5293.	1474.	30.6	53.8	28.	722.6	4.48	1.81	.66	4.44	50.4	1.18	2.35	.50	.30	.24
	m	m	m	m	d	d	m	m	m	m	m	m	m	m	m	m	m	m
					97%	96%												

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

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	12.2	86.	515.	76.	3.7	22.4	32.	104.5	5.41	1.22	.48	1.81	26.0	1.46	1.06	.08	.12	.08
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Oct90	11.8	80.	407.	119.	12.6	33.6	24.	40.2	5.58	1.02	.39	1.14	21.0	1.19	.62	.48	.10	.08
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					93%	100%	96%											
Nov90	5.4	93.	595.	38.	6.0	32.8	13.	119.4	5.06	1.06	.43	1.81	24.0	.99	.99	.08	.12	.09
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	96%	100%											
Dec90	3.5	88.	507.	30.	10.8	26.8	20.	92.8	5.92	1.02	.32	2.56	25.0	1.18	1.50	.08	.17	.17
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Jan91	2.9	83.	382.	85.	11.9	26.6	25.	73.3	5.88	.82	.25	2.19	20.9	.96	1.27	.08	.12	.11
	m	m	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
					100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb91	-.9	82.	160.	87.	31.8	39.3	24.	20.3	5.33	1.48	.70	1.19	28.2	1.81	6.80	.22	.08	.11
	m	m	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
					100%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar91	8.3	76.	326.	112.	9.5	29.9	32.	16.9	6.84	2.23	.99	1.09	47.5	4.10	.72	.19	.06	.21
	m	m	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
					100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr91	8.1	69.	243.	186.	7.9	15.1	61.	30.8	5.64	1.96	.89	2.79	41.1	2.61	1.55	.20	.19	.12
	m	m	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
					100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May91	9.7	76.	359.	148.	4.4	10.8	59.	34.2	6.44	1.82	.59	2.51	37.2	2.02	2.15	.19	.17	.64
	m	m	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
					100%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun91	12.6	78.	380.	90.	4.3	17.0	50.	67.2	5.82	1.36	.63	.93	24.5	1.63	.58	.22	.10	.20
	m	m	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
					96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jul91	18.8	70.	253.	225.	7.0	19.4	61.	70.8	5.88	1.05	.45	.54	18.0	1.26	.41	.12	.04	.14
	m	m	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
					100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug91	17.3	71.	295.	214.	5.1	22.5	52.	31.4	6.16	1.67	.84	.49	28.2	2.31	.22	.32	.04	.11
	m	m	m	m	d	d	d	w	w	w	w	w	w	w	w	w	w	w
					90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean	9.1	79.	4422.	1410.	9.5	24.6	38.	701.8	5.51	1.22	.49	1.68	25.6	1.46	1.19	.15	.11	.15
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					98%	99%	99%											

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

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	12.7	82.	466.	96.	6.0	32.5	35.	63.4	6.20	1.92	.60	1.95	33.0	2.45	1.15	.16	.12	.22
	m	m	m	m	d	d	*d	m	m	m	m	m	m	m	m	m	m	m
					100%	96%	56%											
Oct90	11.7	81.	455.	121.	11.9	38.5	24.	63.9	5.57	1.09	.39	1.24	21.0	1.12	.81	.24	.10	.20
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	96%											
Nov90	5.6	89.	582.	49.	8.7	36.7	15.	61.4	5.81	1.98	.55	4.23	40.0	2.00	2.23	.16	.27	.16
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Dec90	3.4	87.	472.	30.	9.5	33.2	20.	71.6	6.06	.67	.21	2.31	18.0	.84	1.13	.08	.12	.08
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	96%	100%											
Jan91	2.7	84.	346.	91.	14.0	35.8	25.	66.2	5.68	.77	.24	1.37	18.0	.90	.88	.08	.09	.12
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Feb91	-1.2	86.	175.	92.	29.9	51.7	21.	13.1	4.97	2.73	.83	1.95	46.0	2.77	1.29	.22	.13	.41
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Mar91	8.4	79.	373.	118.	10.2	41.7	30.	14.3	6.71	4.43	.16	.87	58.3	4.65	.39	.84	.08	.11
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	83%	100%											
Apr91	8.2	72.	276.	190.	8.4	32.3	57.	30.1	6.42	2.47	.75	3.15	47.7	3.19	2.49	.08	.02	.34
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
May91	10.2	75.	317.	153.	5.6	22.5	56.	29.3	5.86	3.74	1.35	1.95	53.3	3.88	.87	.61	.14	.13
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Jun91	12.9	77.	348.	96.	5.4	20.4	50.	22.9	5.11	3.24	1.37	1.54	52.9	3.21	1.12	.33	.09	.53
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					96%	96%	96%											
Jul91	19.1	73.	301.	229.	8.6	26.6	58.	68.6	6.39	1.27	.42	.45	22.1	1.72	.36	.20	.05	.22
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Aug91	18.5	70.	290.	219.	7.5	31.1	50.	39.1	5.68	1.47	.69	.34	23.5	1.75	.28	.24	.03	.18
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					90%	96%	100%											
Mean	9.3	80.	4401.	1484.	10.4	33.4	37.	543.9	5.74	1.68	.53	1.82	30.2	1.92	1.08	.21	.11	.19
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					98%	97%	95%											

Date	CLIMATE Temp C	Rh %	Tow hours	Sun hours	GASES SO2 ug/m3	NO2 ug/m3	O3 ug/m3	PRECIPITATION mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	PREC.-OPTION NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	12.6	85.	478.	96.	9.7	31.3	26.	95.0	4.59	1.54	.66	1.92	35.0	1.16	1.04	.36	.15	.14
	m	m	m	m	xd	xd	xd	m	m	m	m	m	m	m	m	m	m	m
					33%	33%	33%											
Oct90	12.2	82.	428.	119.	8.1	27.0	37.	36.4	5.27	.70	.32	.78	16.0	.57	.60	.28	.07	.13
	m	m	m	m	*d	*d	*d	m	m	m	m	m	m	m	m	m	m	m
					67%	67%	64%											
Nov90	5.9	94.	642.	57.	13.0	35.7	16.	68.0	4.70	1.09	.45	1.85	29.0	.71	1.04	.28	.12	.13
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					93%	93%	90%											
Dec90	3.1	91.	492.	32.	19.2	37.8	17.	92.5	4.87	1.57	.38	2.52	31.0	1.18	1.27	.48	.17	.09
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					87%	83%	87%											
Jan91	2.8	85.	365.	85.	14.7	35.4	28.	51.7	5.28	.80	.27	.99	17.3	.65	.68	.29	.09	.15
	m	m	m	m	*d	*d	*d	m	m	m	m	m	m	m	m	m	m	m
					70%	67%	70%											
Feb91	-.6	87.	184.	71.	37.6	53.9	23.	28.8	6.60	7.21	1.84	4.61	107.1	7.85	2.81	.76	.20	.89
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Mar91	8.7	81.	441.	92.	10.5	37.0	31.	37.4	5.77	2.05	.74	.70	29.1	1.80	.38	.86	.08	.16
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					96%	96%	100%											
Apr91	8.2	74.	286.	185.	9.2	27.9	56.	24.0	4.64	1.86	.85	3.41	46.6	1.80	1.68	.55	.24	.16
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
May91	10.3	80.	421.	144.	9.5	24.1	53.	30.1	4.85	2.06	.80	1.63	36.1	1.94	.89	.42	.14	.12
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Jun91	13.2	82.	436.	108.	6.7	20.3	51.	53.6	6.14	2.22	.76	.67	34.0	2.61	.34	.52	.09	.30
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	96%	100%											
Jul91	19.1	78.	361.	212.	8.4	26.1	55.	62.0	4.85	.90	.41	.25	18.4	.67	.07	.32	.03	.05
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					100%	100%	100%											
Aug91	18.6	73.	290.	233.	7.4	26.3	52.	67.5	5.80	1.36	.59	.35	21.1	1.48	.19	.48	.06	.09
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					93%	100%	100%											
Mean	9.5	83.	4824.	1434.	12.9	31.7	39.	647.0	4.93	1.68	.60	1.52	31.5	1.54	.84	.44	.12	.17
	m	m	m	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
					86%	86%	87%											

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

	CLIMATE				GASES			PRECIPITATION						PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	11.8	70.	215.	131.	4.6	42.7		25.9	5.10	.89	.30	1.36	19.0	.01	.81	1.28	.18	.09
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	99%	98%	98%	98%	100%	98%	98%	98%	98%	98%
Oct90	8.0	79.	385.	91.	8.0	48.7		49.8	5.00	1.08	.52	.62	22.2	.41	.34	1.06	.12	.08
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	96%		100%	100%	98%	98%	98%	100%	98%	98%	98%	98%	98%
Nov90	-.3	81.	145.	88.	13.7	61.7		65.2	4.67	1.02	.46	.55	21.2	.46	.28	.84	.10	.07
	*d	*d	*d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	73%	73%	73%		100%	100%		100%	99%	99%	99%	99%	100%	99%	99%	99%	99%	99%
Dec90	.2	83.	318.	47.	12.1	63.1		70.1	4.30	1.17	.54	2.91	38.5	.51	1.42	.49	.20	.10
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		93%	93%		100%	100%	99%	99%	99%	100%	99%	99%	99%	99%	99%
Jan91	-2.3	85.	174.	57.	12.8	74.5		20.4	5.22	.62	.30	1.39	16.2	.27	.69	.51	.13	.18
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		96%	96%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb91	-3.4	75.	121.	86.	14.0	58.0		18.6	4.79	3.67	1.52	7.90	76.8	1.39	4.51	5.06	.55	.70
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar91	2.1	83.	386.	65.	8.2	54.6		54.6	4.60	2.41	1.25	1.12	43.9	1.77	.57	1.63	.20	.17
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr91	2.8	73.	264.	176.	6.5	50.4		4.9	4.36	11.58	6.80	11.15	193.5	6.73	5.03	14.75	1.49	1.10
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May91	10.6	55.	74.	328.	4.0	35.2		3.9	6.16	3.91	1.16	2.13	93.0	1.07	1.31	12.42	.54	.87
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		96%	100%		100%	97%	87%	87%	87%	100%	87%	87%	87%	87%	87%
Jun91	12.9	74.	323.	129.	8.4	53.0		87.3	5.04	.74	.34	.71	15.8	.31	.45	1.20	.11	.18
	d	d	d	m	d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	96%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jul91	19.9	73.	312.	259.	6.3	41.5		8.8	6.25	1.38	.28	1.75	21.3	.32	.82	1.79	.30	.17
	d	d	d	m	d	d		w	*w	*w	*w	*w	*w	*w	*w	*w	*w	*w
	100%	100%	100%		100%	100%		100%	72%	72%	72%	72%	72%	72%	72%	72%	72%	72%
Aug91	19.2	71.	269.	229.	5.2	41.0		23.6	5.65	1.06	.10	1.16	20.2	.27	.74	1.84	.28	.21
	d	d	d	m	d	d		w	w	w	w	w	w	*w	*w	*w	*w	*w
	100%	100%	100%		77%	93%		100%	100%	100%	100%	100%	100%	70%	70%	70%	70%	70%
Mean	7.0	75.	3013.	1686.	8.6	51.9		433.1	4.71	1.41	.64	1.64	30.5	.66	.87	1.51	.19	.17
	d	d	d	m	d	d		m	m	m	m	m	m	m	m	m	m	m
	97%	97%	97%		96%	98%												

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

	CLIMATE				GASES			PRECIPITATION							PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	9.7	74.	311.		28.8	13.0		9.2	4.62	1.48	.24	1.46	28.6	.76	1.02	.65	.15	.13
	d	d	d		d	d		w	w	w	w	w	w	w	w	w	w	w
	90%	90%	90%		100%	100%		100%	96%	96%	96%	96%	96%	96%	96%	96%	96%	96%
Oct90	7.3	83.	470.		43.2	16.4		24.5	3.77	3.78	.96	1.71	86.5	1.58	.58	.75	.12	.27
	d	d	d		d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Nov90	2.7	86.	409.		35.1	25.5		25.5	3.80	3.13	1.08	2.64	84.1	1.24	1.11	.58	.12	.25
	d	d	d		d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dec90	-.5	86.	221.		26.6	26.6		65.8	3.91	2.45	.94	5.33	80.5	1.26	2.25	.28	.26	.18
	d	d	d		d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	98%	98%	98%	100%	98%	98%	98%	98%	98%
Jan91	-1.3	89.	208.		37.9	30.9		45.9	4.11	1.74	.41	7.22	56.9	.53	3.28	.17	.42	.14
	d	d	d		d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	98%	100%	100%	100%	98%	98%	98%	98%	98%	98%
Feb91	-3.4	75.	147.		14.0	21.9		9.6	3.71	4.83	2.67	11.75	154.3	3.76	4.45	1.61	.44	.43
	d	d	d		d	d		w	w	w	w	w	w	w	w	w	w	w
	100%	100%	100%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar91	1.6	84.	357.		32.2	18.2		55.3	3.98	3.34	1.52	1.72	76.6	2.48	.85	.79	.11	.22
	d	d	d		d	d		w	w	w	w	w	w	w	w	w	w	w
	87%	87%	87%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr91	6.7	64.	218.		30.1	14.4		10.4	3.56	4.89	2.36	10.16	164.1	3.10	3.25	.74	.40	.36
	d	d	d		d	d		w	w	w	w	w	w	w	w	w	w	w
	96%	76%	76%		100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May91	15.2	55.	156.		17.4	10.1		.0										
	d	d	d		d	d		w										
	96%	90%	90%		100%	96%												
Jun91	12.7	75.	393.		43.5	12.0		19.4	4.79	1.94	.33	.92	29.3	2.26	.58	.74	.11	.41
	d	d	d		d	*d		w	w	w	w	w	w	w	w	w	w	w
	76%	100%	76%		80%	70%		100%	100%	91%	91%	91%	100%	100%	100%	100%	100%	100%
Jul91	17.3	75.	361.		35.1	9.5		15.6	4.55	.61	.15	.97	17.0	.21	.21	.30	.06	.11
	d	*d	*d		d	*d		w	w	w	w	w	w	w	w	w	w	w
	80%	54%	54%		87%	70%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug91	16.4	75.	390.		26.4	12.9		5.0	4.56	3.19	1.16	4.43	67.0	3.54	2.48	2.04	.38	1.11
	d	d	d		d	d		w	*w	*w	*w	*w	*w	*w	*w	*w	*w	*w
	80%	77%	77%		100%	96%		100%	58%	58%	58%	58%	58%	58%	58%	58%	58%	58%
Mean	6.7	77.	3599.		30.7	18.0		286.2	3.96	2.70	.99	4.10	73.5	1.59	1.75	.56	.22	.24
	d	d	d		d	d		m	m	m	m	m	m	m	m	m	m	m
	92%	89%	87%		97%	94%												

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

	CLIMATE				GASES			PRECIPITATION						PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	10.8	80.	437.	180.	.2	.6	44.	164.6	4.62	.40	.14	1.56	17.1	.09	.87	.07	.10	.08
	d	d	d	+m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	93%	93%		90%	90%	96%	100%	100%	99%	99%	99%	100%	99%	99%	99%	99%	99%
Oct90	8.2	90.	564.	80.	2.0	3.9	39.	216.8	4.23	1.28	.62	5.54	48.7	.72	2.87	.21	.35	.21
	d	d	d	+m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	83%	83%	83%		96%	100%	100%	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Nov90	2.1	89.	417.	89.	.5	4.1	32.	64.9	4.94	.77	.50	1.62	30.5	.41	.81	2.97	.10	.22
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Dec90	2.3	90.	492.	36.	.4	2.7	44.	178.8	4.52	.76	.44	5.77	38.2	.43	3.00	.22	.36	.19
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		93%	100%	100%	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Jan91	1.0	82.	254.	72.	.8	4.7	46.	169.0	4.70	.56	.27	5.60	30.4	.20	3.01	.21	.39	.18
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb91	-5.2	80.	125.	84.	2.0	4.2	58.	72.7	4.15	.92	1.02	2.86	43.5	.67	1.65	.15	.18	.17
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Mar91	1.4	87.	258.	94.	1.7	4.5	55.	109.3	4.09	1.73	1.01	1.24	51.1	1.23	.53	.23	.09	.13
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	100%	99%	99%	99%	100%	99%	99%	99%	99%	99%
Apr91	2.9	78.	314.	160.	2.6	4.8	75.	68.8	4.08	1.70	1.31	2.60	57.5	1.36	1.49	.24	.18	.18
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May91	8.3	57.	108.	346.	.6	1.8	82.	2.2	4.44	1.43	.69	1.64	38.3	1.49	.99	1.08	.25	.88
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	100%	100%	100%	100%	81%	81%	81%	100%	81%	81%	81%	81%	81%
Jun91	9.6	81.	466.	189.	.7	1.8	65.	121.3	4.43	.68	.33	.75	22.2	.37	.48	.09	.05	.22
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		96%	100%	100%	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Jul91	16.4	73.	337.	277.	.9	1.8	65.	64.9	4.21	.96	.46	1.05	32.2	.44	.60	.12	.09	.14
	d	d	d	+m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	96%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug91	14.7	76.	383.	213.	.7	2.1	59.	54.3	4.25	.79	.39	1.46	31.9	.12	.89	.20	.11	.16
	d	d	d	+m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%		100%	96%	100%	100%	99%	97%	97%	97%	99%	97%	97%	97%	97%	97%
Mean	6.1	80.	4114.	1820.	1.1	3.1	55.	1287.6	4.35	.92	.53	3.35	36.2	.52	1.78	.32	.22	.17
	d	d	d	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
	98%	98%	98%		98%	98%	99%	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%

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

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	10.8	80.	443.	76.	4.0	28.0	33.	138.0	4.57	.46	.20	.23	14.0	.17	.15	.11	.02	.03
	d	d	d	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%		100%	100%	100%											
Oct90	7.6	40.	493.	91.	6.1	27.1	33.	37.0										
	d	m	d	m	d	d	d	+m										
	100%		100%		100%	100%	100%											
Nov90	2.2	85.	480.	57.	7.9	30.2	22.	72.0	4.44	.72	.49	.84	23.0	.36	.33	.27	.04	.02
	d	d	d	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%		100%	100%	100%											
Dec90	1.4	84.	434.	35.	9.1	27.6	29.	17.1										
	d	d	d	m	d	d	d	+m										
	100%	100%	100%		100%	100%	100%											
Jan91	.1	81.	288.	57.	7.8	29.0	30.	52.0	4.59	.45	.31	.96	19.0	.17	.48	.14	.06	.02
	d	d	d	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%		100%	100%	100%											
Feb91	-2.0	79.	114.	51.	13.6	31.4	35.	13.0	4.49	1.09	.72	1.24	34.0	.65	.92	.66	.08	.04
	d	d	d	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%		92%	100%	100%											
Mar91	2.4	81.	418.	62.	8.6	28.5	32.	21.0	4.08	2.33	1.26	.81	64.0	1.48	.36	1.10	.11	.08
	d	d	d	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
	96%	93%	100%		93%	93%	93%											
Apr91	6.8	67.	142.	211.	5.7	24.9	50.	19.3										
	*d	*d	d	m	*d	*d	*d	+m										
	56%	50%	90%		53%	56%	56%											
May91	8.7	58.	76.	195.	4.0	26.6	50.	60.0	4.57				17.0	.40	.07	.13	.02	.01
	d	*d	d	m	d	d	d	m	m				m	m	m	m	m	m
	100%	67%	100%		100%	100%	90%											
Jun91	12.2	73.	301.	174.	4.0	24.0	56.	85.0	4.86	.84	.25	.00	18.0	.38	.09	.26	.06	.04
	d	d	d	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%		100%	100%	100%											
Jul91	19.0	65.	153.	306.	2.4	23.4	54.	62.0	4.74	.25	.15	.00	10.0	.12	.07	.05	.01	.00
	d	d	d	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%		100%	87%	100%											
Aug91	17.9	72.	284.	212.	3.4	23.5	48.	67.0	4.58	.35	.23	.00	12.0	.21	.10	.09	.02	.02
	d	d	d	m	d	xd	d	m	m	m	m	m	m	m	m	m	m	m
	96%	96%	96%		96%	38%	96%											
Mean	7.3	72.	3643.	1527.	6.3	27.3	39.	643.4	4.57	.61	.32	.34	18.1	.31	.20	.20	.04	.02
	d	m	d	m	d	d	d	m	m	m	m	m	m	m	m	m	m	m
	95%		98%		94%	89%	94%											

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

	CLIMATE				GASES			PRECIPITATION						PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	10.8	80.	443.	76.				138.0	4.57	.46	.20	.23	14.0	.17	.15	.11	.02	.03
	d	d	d	m				m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Oct90	7.6	40.	493.	91.				37.0										
	d	m	d	m				+m										
	100%		100%															
Nov90	2.2	85.	480.	57.				72.0	4.44	.72	.49	.84	23.0	.36	.33	.27	.04	.02
	d	d	d	m				m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Dec90	1.4	84.	434.	35.				17.1										
	d	d	d	m				+m										
	100%	100%	100%															
Jan91	.1	81.	288.	57.				52.0	4.59	.45	.31	.96	19.0	.17	.48	.14	.06	.02
	d	d	d	m				m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Feb91	-2.0	79.	114.	51.				13.0	4.49	1.09	.72	1.24	34.0	.65	.92	.66	.08	.04
	d	d	d	m				m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Mar91	2.4	81.	418.	62.				21.0	4.08	2.33	1.26	.81	64.0	1.48	.36	1.10	.11	.08
	d	d	d	m				m	m	m	m	m	m	m	m	m	m	m
	96%	93%	100%															
Apr91	6.8	67.	142.	211.				19.3										
	*d	*d	d	m				+m										
	56%	50%	90%															
May91	8.7	58.	76.	195.				60.0	4.57				17.0	.40	.07	.13	.02	.01
	d	*d	d	m				m	m				m	m	m	m	m	m
	100%	67%	100%															
Jun91	12.2	73.	301.	174.	2.9			85.0	4.86	.84	.25	.00	18.0	.38	.09	.26	.06	.04
	d	d	d	m	m			m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Jul91	19.0	65.	153.	306.	2.4	29.0		62.0	4.74	.25	.15	.00	10.0	.12	.07	.05	.01	.00
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	100%	100%	100%															
Aug91	17.9	72.	284.	212.	2.9	23.3		67.0	4.58	.35	.23	.00	12.0	.21	.10	.09	.02	.02
	d	d	d	m	m	m		m	m	m	m	m	m	m	m	m	m	m
	96%	96%	96%															
Mean	7.3	72.	3643.	1527.	2.7	26.2		643.4	4.57	.61	.32	.34	18.1	.31	.20	.20	.04	.02
	d	m	d	m	xm	xm		m	m	m	m	m	m	m	m	m	m	m
	95%		98%															

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

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	10.0	82.	435.	74.	1.3	2.6	45.	134.5	4.61	.77	.35	.71		.48	.44	.19	.07	.09
	m	m	m	m	d	d	d	d	d	d	d	d		d	d	d	d	d
					100%	100%	100%	100%	100%	99%	99%	99%		99%	98%	98%	98%	98%
Oct90	7.5	85.	453.	108.	3.0	3.5	47.	49.8	4.49	.75	.43	1.54		.41	.81	.13	.10	.08
	m	m	m	m	d	d	d	d	d	d	d	d		d	d	d	d	d
					100%	100%	83%	100%	100%	98%	98%	98%		98%	98%	98%	98%	98%
Nov90	.8	89.	219.	58.	2.0	5.2	35.	45.9	4.52	.44	.32	.83		.22	.47	.05	.05	.03
	m	m	m	m	d	d	*d	d	d	d	d	d		d	d	d	d	d
					100%	100%	60%	100%	100%	99%	99%	99%		99%	98%	98%	98%	98%
Dec90	.2	88.	188.	29.	4.4	7.5	36.	23.6	4.09	1.53	.90	2.05		.78	1.11	.16	.14	.14
	m	m	m	m	d	d	*d	d	d	d	d	d		d	d	d	d	d
					100%	100%	64%	100%	100%	98%	98%	98%		98%	88%	88%	88%	88%
Jan91	-1.1	85.	131.	73.	3.5	6.4	42.	24.1	4.61	.45	.38	1.74	19.3	.15	1.10	.15	.12	.06
	m	m	m	m	d	d	*d	d	d	d	d	d	d	d	d	d	d	d
					93%	100%	61%	100%	100%	98%	98%	98%	91%	98%	93%	93%	93%	93%
Feb91	-2.7	80.	117.	68.	7.0	7.4	50.	35.7	4.07	2.33	.94	.91	50.2	.83	1.59	.26	.09	.14
	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					100%	96%	96%	100%	100%	98%	98%	98%	88%	98%	98%	98%	96%	98%
Mar91	1.9	85.	406.	64.	3.2	4.0	54.	18.6	4.19	1.22	1.09	.39	35.9	1.10	.30	.08	.02	.04
	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					100%	100%	90%	100%	100%	98%	98%	98%	86%	97%	92%	92%	92%	92%
Apr91	3.8	72.	225.	205.	1.9	2.4	74.	5.4	4.48	1.80	.99	.74	31.1	1.19	.53	.64	.15	.13
	m	m	m	m	d	d	d	d	d	d	d	d	*d	d	d	d	d	d
					100%	100%	93%	100%	96%	100%	100%	100%	61%	96%	75%	75%	75%	75%
May91	7.5	68.	247.	231.	1.2	1.7	71.	27.5	4.67	.49	.21	.10	14.2	.30	.07	.07	.03	.11
	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					100%	100%	90%	100%	100%	99%	99%	99%	75%	99%	98%	98%	98%	98%
Jun91	10.6	80.	268.	146.	1.3	1.4	67.	61.7	4.44	.92	.41	.24	22.4	.49	.14	.22	.05	.08
	m	m	m	m	d	d	*d	d	d	d	d	d	d	d	d	d	d	d
					100%	100%	60%	100%	100%	99%	99%	99%	98%	99%	97%	97%	97%	97%
Jul91	18.1	69.	198.	293.	1.2	1.6	62.	30.2	4.92	.17	.10	.24		.08	.13	.06	.02	.10
	m	m	m	m	d	d	d	d	d	d	d	d		d	d	d	d	d
					100%	100%	77%	100%	100%	99%	99%	99%		97%	94%	94%	94%	94%
Aug91	16.5	79.	428.	206.	1.3	2.2	57.	59.5	4.61	.61	.36	.21	18.5	.39	.12	.23	.03	.05
	m	m	m	m	d	d	d	d	d	d	d	d	d	d	d	d	d	d
					100%	100%	100%	100%	100%	99%	99%	99%	88%	99%	95%	95%	95%	95%
Mean	6.1	80.	3315.	1555.	2.6	3.8	54.	516.5	4.46	.84	.44	.74	25.7	.46	.50	.17	.07	.08
	m	m	m	m	d	d	d	d	d	d	d	d	xd	d	d	d	d	d
					99%	99%	81%	100%	99%	99%	99%	99%	40%	99%	96%	96%	96%	96%

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

	CLIMATE				GASES			PRECIPITATION							PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	13.3	75.	353.		14.9	26.1		21.5	3.96	2.08	.75	3.93	66.0	.98	.82	1.03	.19	.23
	d	d	m		d	w		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oct90	12.1	86.	551.		37.8	33.0		15.2	4.09	1.74	1.07	1.85	56.4	.78	.67	1.28	.15	.14
	d	d	m		d	w		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%			100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Nov90	6.7	95.	706.		12.2	36.1		28.0	4.10	1.58	.58	7.70	69.0	.41	2.99	1.49	.45	.39
	d	d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	100%	100%			100%			100%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%
Dec90	4.5	95.	722.		22.4	36.0		8.8	5.78	3.44	1.13	6.97	153.3	1.79	4.96	3.35	1.91	1.49
	d	d	m		d	w		w	w	w	w	w	w	w	w	w	w	w
	93%	93%			83%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jan91	3.1	94.	670.		35.9	31.3		19.9	5.74	2.52	.61	2.91	78.7	.93	2.22	2.21	.78	.86
	d	d	m		d	w		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			77%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb91	2.4	96.	618.		24.0	42.1		13.0	4.82	4.38	1.25	11.71	119.4	1.18	9.20	3.62	.97	.76
	d	d	m		d	w		w	w	w	w	w	w	w	w	w	w	w
	100%	100%			100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar91	8.5	95.	610.		18.1	28.9		4.7	4.37	2.64	.88	6.39	67.4	1.66	1.27	3.29	.26	.33
	d	d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	100%	100%			96%			100%	97%	97%	97%	97%	97%	97%	97%	97%	97%	97%
Apr91	8.1	92.	475.		11.2	18.7		29.4	4.69	2.13	.83	4.30	52.1	1.32	2.27	1.95	.34	.30
	d	d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	100%	100%			100%			100%	100%	98%	98%	98%	98%	98%	98%	98%	98%	98%
May91	11.2	85.	453.		8.4	18.5		8.2	4.07	2.37	1.57	6.06	83.0	2.04	1.65	2.68	.33	.63
	d	d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	100%	100%			90%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun91	12.5	91.	468.		17.5	22.0		39.0	4.29	1.72	.64	2.83	49.2	.74	.79	1.06	.15	.37
	d	d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	100%	100%			100%			100%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Jul91	18.8	74.	357.		13.2	18.8		9.7	4.37	1.14	.38	1.52	38.1	.46	.35	.81	.09	.31
	d	d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	100%	100%			90%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug91	18.3	71.	327.		28.0	28.4		8.9	4.31	1.80	1.08	2.38	47.1	1.18	.58	1.63	.12	.93
	d	d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	100%	100%			100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean	10.0	87.	6310.		20.2	28.3		206.3	4.30	2.14	.81	4.62	67.4	.98	2.15	1.76	.42	.48
	d	d	m		d	m		m	m	m	m	m	m	m	m	m	m	m
	99%	99%			94%													

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

	CLIMATE				GASES			PRECIPITATION						PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	16.2	77.	389.		3.3	23.5		29.5	6.04	.71	.18	1.89	27.0	.81	1.36	.54	.15	.50
	d	d	m		*d	w		d	d	d	d	d	d	d	d	d	d	d
	80%	80%			63%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oct90	13.1	94.	655.		4.5	22.8		68.0	6.29	1.28	.12	10.97	76.3	4.17	6.52	1.09	.63	3.17
	d	d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	90%	90%			100%			100%	100%	99%	99%	99%	100%	99%	99%	99%	99%	99%
Nov90	8.6	94.	641.		8.4	33.2		43.6	6.88	5.29	.23	16.43	140.0	9.55	6.48	.69	.38	11.21
	d	d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	93%	93%			100%			100%	100%	99%	99%	99%	100%	99%	99%	99%	99%	99%
Dec90	5.2	96.	677.		5.2	33.0		33.9	7.05	7.99	.05	13.29	258.4	21.79	13.21	1.37	.52	19.28
	d	d	m		*d	w		d	d	d	d	d	d	d	d	d	d	d
	87%	87%			61%			100%	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%
Jan91	4.6	94.	670.		7.2	30.4		46.2	6.92	2.46	.25	14.46	91.6	6.08	10.11	1.03	.77	1.82
	d	d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	90%	90%			96%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb91	3.9	92.	571.		10.5	30.3		20.5	7.23	7.56	.57	14.05	173.6	10.86	14.50	2.30	.66	12.46
	d	d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	85%	85%			100%			100%	100%	99%	99%	99%	100%	99%	99%	99%	99%	99%
Mar91	9.6	90.	618.		3.7	20.0		53.1	7.24	2.05	.21	3.77	63.4	3.70	4.51	1.23	.26	2.24
	d	d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	100%	100%			100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr91	9.9	81.	468.		3.2	15.6		58.4	6.13	3.46	.80	6.17	101.5	8.16	4.77	1.78	.42	3.99
	*d	*d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	73%	73%			100%			100%	100%	99%	99%	99%	100%	99%	99%	99%	99%	99%
May91	15.2	76.	394.		5.2	17.8		6.5	7.06	3.40	1.33	3.00	83.2	5.89	2.84	1.57	.46	1.12
	*d	*d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	74%	74%			100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun91	15.7	88.	526.		2.1	13.1		98.8	5.76	1.67	.95	4.54	49.6	2.29	2.93	1.63	.50	.82
	*d	*d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	73%	73%			96%			100%	100%	99%	99%	99%	100%	99%	99%	99%	99%	99%
Jul91	21.2	86.	528.		3.1	13.2		57.6	6.33	1.91	2.33	2.77	60.6	2.31	2.72	2.54	.58	.86
	*d	*d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	67%	67%			100%			100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug91	22.3	82.	491.		3.8	11.8		19.5	6.80	2.67	3.37	5.06	95.2	4.32	4.98	2.82	.88	1.21
	d	d	m		d	w		d	d	d	d	d	d	d	d	d	d	d
	100%	100%			100%			100%	100%	98%	98%	98%	100%	98%	98%	98%	98%	98%
Mean	12.0	88.	6628.		5.0	22.1		535.6	6.22	2.87	.76	7.86	90.9	5.82	5.71	1.50	.51	4.15
	d	d	m		d	m		d	d	d	d	d	d	d	d	d	d	d
	84%	84%			93%			100%	100%	99%	99%	99%	99%	99%	99%	99%	99%	99%

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

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	11.9				1.5	2.2	52.	107.2										
	d				d	d	d	d										
	100%				96%	96%	96%	100%										
Oct90	11.0				4.1	5.0	50.	263.2										
	d				d	*d	d	d										
	100%				100%	64%	100%	100%										
Nov90	6.3				3.9	8.2	43.	133.2										
	d				d	d	d	d										
	100%				100%	80%	100%	100%										
Dec90	4.6				3.7	3.1	42.	170.4										
	d				d	d	d	d										
	100%				100%	100%	100%	100%										
Jan91	3.4				9.0	.5	33.	174.2										
	d				d	xd	d	d										
	100%				100%	22%	100%	100%										
Feb91	2.6				10.1		45.	113.4										
	d				d		d	d										
	100%				100%		100%	100%										
Mar91	7.2				4.2		51.	177.8										
	d				d		d	d										
	100%				100%		100%	100%										
Apr91																		
May91																		
Jun91																		
Jul91																		
Aug91																		
Mean	6.7				5.2	4.6	45.											
	*m				*m	xm	*m											

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

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90			334.		3.6	31.6		19.4	4.53	1.43	.00	2.59		.00	2.86	1.48	.20	.16
			xd		d	w		w	w	w	w	w		w	w	w	w	w
			23%		83%			100%	99%	99%	99%	99%		99%	99%	99%	99%	99%
Oct90			518.		8.1	35.2		111.4	3.71	.77	.00	1.70		.00	.83	.43	.11	.06
			d		d	w		w	w	w	w	w		w	w	w	w	w
			100%		100%			100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
Nov90			602.		6.9	41.8		27.5	3.66	1.69	.04	3.27		.00		.86	.20	.15
			d		d	w		w	w	w	w	w		w		w	w	w
			100%		100%			100%	100%	100%	100%	100%		100%		100%	100%	100%
Dec90			574.		9.4	27.1		42.3	3.78	1.25	.20	5.60		.20	1.76	.51	.32	.21
			d		d	w		w	w	w	w	w		w	w	w	w	w
			100%		77%			100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
Jan91			511.		9.2	62.9		48.0	3.62	1.47	.03	16.92		.51	5.36	.56	1.04	.23
			d		d	w		w	w	w	w	w		w	w	w	w	w
			100%		100%			100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
Feb91			334.		21.6	25.8		13.6	3.59	4.12	.64	10.18		2.25	2.00	2.70	.53	.81
			d		d	w		w	w	w	w	w		w	w	w	w	w
			100%		100%			100%	88%	100%	100%	100%		100%	100%	100%	100%	100%
Mar91			478.		17.4	27.4		18.0	3.93	2.71	.27	4.70		1.09	.82	2.20	.37	.00
			d		d	w		w	w	w	w	w		w	w	w	w	w
			100%		100%			100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
Apr91			375.		17.2	47.2		42.7	2.77	4.14	.86	5.65		20.05	2.41	8.25	.71	5.41
			d		d	w		w	w	w	w	w		w	w	w	w	w
			100%		100%			100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
May91			418.		6.3	83.2		14.7	2.70	9.61	.00	16.30		.00	7.50	37.30	3.00	.00
			d		d	w		w	w	w	w	w		w	w	w	w	w
			77%		100%			100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
Jun91			427.		4.7	26.8		73.7	2.78	1.04	.36	1.27		1.30	.73	.48	.12	.10
			d		d	w		w	w	w	w	w		w	w	w	w	w
			100%		100%			100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
Jul91			233.		139.3	29.5		73.0	3.13	.63	.37	.50		.29	.30	.58	.09	.10
			d		d	w		w	w	w	w	w		w	w	w	w	w
			100%		77%			100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
Aug91			319.		99.5	32.1		14.2	5.38	24.85	4.53	5.41		29.37	3.20	1.89	.15	7.16
			d		d	w		w	w	w	w	w		w	w	w	w	w
			100%		100%			100%	100%	100%	100%	100%		100%	100%	100%	100%	100%
Mean			5200.		27.4	39.2		498.5	3.18	2.37	.36	4.59		2.96	1.82	2.47	.38	.79
			d		d	m		m	m	m	m	m		m	m	m	m	m
			91%		94%													

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

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	22.0	56.	63.	244.	12.8	17.9		42.4	6.58	1.01	.38	.30	22.1	.54	1.28	1.30	.24	.09
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oct90	14.7	64.	209.	159.	20.2	16.9		53.2	6.45	.56	.19	.48	15.9	.60	.71	.91	.14	.03
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	77%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Nov90	8.4	69.	290.	190.	20.2	19.1		45.5	5.67	.84	.24	.42	16.7	.50	.60	.93	.18	.06
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	96%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Dec90	3.8	70.	226.	153.	17.8	12.0		8.7	5.52	1.11	.37	.54	20.7	.58	.75	.93	.19	.11
	d	d	d	d	d	xd		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	12%		100%	100%	100%	100%	100%	100%	98%	98%	98%	98%	98%
Jan91	4.4	69.	231.	108.	4.9	32.2		12.6	6.22	1.56	.38	.70	19.8	.77	1.07	1.24	.28	.18
	d	d	d	d	d	*d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	96%	77%	74%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb91	4.8	68.	243.	193.	3.8	19.8		51.8	6.10	1.61	.22	1.02	33.1	.36	.66	3.05	.31	.07
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	82%	92%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar91	9.7	64.	222.	155.	9.8	28.2		42.0	6.94	1.87	.54	.74	32.2	1.13	.80	2.99	.19	.15
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr91	11.6	54.	54.	275.	10.3	10.0		31.2	6.69	1.18	.37	.57	30.8	.76	.35	1.44	.12	.02
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May91	15.6	48.	1.	335.	3.6	19.7		2.6	5.66	3.67	1.39	1.25	72.3	3.05	1.69	2.88	.58	.66
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun91	23.0	44.	4.	343.	3.1	23.6		6.5	6.50	2.79	1.41	.89	43.3	1.86	1.29	2.54	.33	.36
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	96%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jul91	26.7	42.	12.	334.	4.5	12.9		11.4	6.68	1.98	1.14	.79	40.3	1.51	.78	3.46	.26	.46
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug91	27.4	42.	0.	348.	12.2	24.6		.0										
	d	d	d	d	d	d		d										
	100%	100%	100%	100%	100%	100%												
Mean	14.4	57.	1555.	2843.	10.3	20.1		307.9	6.14	1.26	.37	.62	25.8	.71	.78	1.91	.21	.10
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	99%	94%	89%		100%	100%	100%	100%	100%	100%	99%	99%	99%	99%	99%

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

	CLIMATE				GASES			PRECIPITATION							PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	20.4	73.	363.	187.	28.5	36.1		36.6	6.28	14.91	4.46	7.56	86.8	3.05	1.65	10.25		
	d	d	d	d	w	w		d	w	w	w	w	w	w	w	w		
	100%	100%	100%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%		
Oct90	17.1	66.	272.	143.	19.9	32.3		115.4	6.15	5.97	.94	5.94	43.6	1.47	1.95	3.97		
	d	d	d	d	w	w		d	w	w	w	w	w	w	w	w		
	100%	100%	100%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%		
Nov90	10.9	77.	413.	75.	40.4	34.0		178.4	5.25	4.52	1.35	4.19	28.7	.92	1.67	2.85		
	d	d	d	d	w	w		d	w	w	w	w	w	w	w	w		
	100%	100%	100%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%		
Dec90	6.7	76.	393.	90.	36.0	30.2		113.1	5.10	6.98	2.09	9.91	56.7	1.73	4.69	3.17		
	d	d	d	d	w	w		d	w	w	w	w	w	w	w	w		
	100%	100%	100%	100%				100%	100%	100%	100%	100%	100%	100%	100%	100%		
Jan91	9.3	74.	329.	77.	19.3	34.9		88.6	6.42	10.42	2.22	6.00	58.3	2.33	2.68	5.62		
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d		
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%		
Feb91	8.2	71.	290.	103.	19.0	19.9		50.3	5.59	13.12	3.94	8.18	80.1	3.09	4.38	6.40		
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d		
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%		
Mar91	12.5	71.	308.	99.	13.0	23.1		146.3	6.06	8.25	4.87	6.47	57.9	3.44	2.70	3.33		
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d		
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%		
Apr91	10.9	71.	354.	135.	17.3	18.0		133.7	5.61	5.99	2.07	5.70	45.3	1.22	2.65	2.98	.00	.00
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%		
May91	13.1	79.	500.	158.	39.9	31.5		151.0	4.34	8.29	4.16	6.36	64.8	2.26	2.94	1.99	.00	.00
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%		
Jun91	16.4	76.	393.	167.	12.5	33.8		21.6	6.13	25.42	6.01	11.61	126.6	3.43	4.03	13.81		
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d		
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%		
Jul91	20.0	76.	451.	149.	22.5	40.8		46.1	6.16	20.38	4.13	8.46	96.5	2.06	2.16	11.50		
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d		
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%		
Aug91	21.5	77.	470.	194.	13.3	44.8		29.7	4.28	13.55	7.64	10.07	102.2	2.38	3.30	9.41		
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d		
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%		
Mean	13.9	74.	4536.	1577.	23.5	31.6		1110.8	5.00	8.61	2.98	6.65	57.1	2.03	2.75	4.33	.00	.00
	d	d	d	d	m	m		d	m	m	m	m	m	m	m	m	xm	xm
	100%	100%	100%	100%				100%										

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

	CLIMATE				GASES			PRECIPITATION						PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	22.5	50.	47.	207.	16.6	11.6		43.5	6.35	.94	.45	.60	23.8	.78	.72	1.48	.22	.14
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	96%	100%	100%		100%	100%	100%	100%	100%	100%	99%	99%	99%	99%	99%
Oct90	13.6	65.	175.	146.	6.7	18.2		103.3	5.62	.27	.11	.55	9.0	.04	.57	.27	.09	.03
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	96%	100%	100%		100%	100%	100%	100%	100%	100%	99%	99%	99%	99%	99%
Nov90	9.7	62.	109.	180.	7.8	13.6		58.6	5.56	.22	.06	.52	9.0	.04	.35	.11	.07	.02
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	99%	98%	98%	98%	98%
Dec90	5.0	66.	162.	130.	2.8	5.3		16.6	5.12	.29	.18	.35	8.1	.05	.31	.11	.06	.04
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	99%	99%	99%	100%	96%	96%	96%	96%	96%
Jan91	4.9	66.	146.	122.	6.5	12.7		25.9	5.45	.34	.12	.53	10.3	.10	.69	.18	.11	.06
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb91	4.5	64.	180.	132.	3.5	21.8		89.9	5.75	.35	.11	.44	12.7	.17	.32	.69	.07	.03
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar91	7.3	65.	123.	112.	5.4	13.3		104.6	6.53	.24	.06	.57	12.7	.05	.37	.36	.04	.03
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	77%	77%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr91	10.2	54.	0.	248.	4.1	10.4		21.2	5.80	.64	.29	.55	18.3	.41	.49	.83	.08	.04
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
May91	13.9	52.	0.	326.	2.9	19.1		2.6	6.65	1.55	.22	1.18	21.9	.04	1.04	2.01	.31	.41
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun91	21.9	46.	0.	336.	5.4	13.2		5.1	7.07	1.57	.70	.65	27.6	.73	1.21	1.56	.20	.40
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jul91	25.8	41.	9.	332.	2.2	38.5		5.8	6.85	3.43	2.04	1.09	73.4	2.11	.92	5.29	.59	.89
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug91	26.9	42.	4.	336.	8.4	15.0		.0										
	d	d	d	d	d	d		d										
	100%	100%	100%	100%	100%	100%												
Mean	13.9	56.	945.	2609.	6.0	16.1		477.1	5.74	.41	.17	.54	13.4	.18	.47	.56	.09	.06
	d	d	d	d	d	d		d	d	d	d	d	d	d	d	d	d	d
	100%	98%	98%	99%	100%	100%		100%	100%	99%	99%	99%	100%	99%	99%	99%	99%	99%

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

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	9.4	85.	519.	57.	41.1	66.0		31.2	6.00	2.40	.28	.43	49.5	.97				
	d	d	m	m	m	m		+m	m	m	m	m	m	m				
	100%	100%																
Oct90	5.5	79.	351.	105.	27.2	64.0		64.9	6.19	1.79	.10	.23	22.5	.40				
	d	d	m	m	m	m		m	m	m	m	m	m	m				
	100%	100%																
Nov90	.2	87.	372.	22.	12.6	57.9		105.8	6.18	1.77	.12	.33	26.0	.16				
	d	d	m	m	m	m		m	m	m	m	m	m	m				
	100%	100%																
Dec90	-4.3	78.	76.	22.	13.6	61.5		14.1	6.80	5.29	.33	1.21	81.7	.20				
	d	d	m	m	m	m		m	m	m	m	m	m	m				
	100%	100%																
Jan91	-5.9	77.	81.	28.	12.8	61.4		60.9	6.09	3.98	.28	1.31	74.8	.46				
	d	d	m	m	m	m		m	m	m	m	m	m	m				
	100%	100%																
Feb91	-7.3	74.	64.	23.	28.5	41.8		39.9	6.40	2.53	.17	.75	44.6	.42				
	d	d	m	m	m	m		m	m	m	m	m	m	m				
	100%	100%																
Mar91	-1.3	65.	129.	133.	40.7	56.3		16.1	6.17	2.42	.15	.49	31.9	.54				
	d	d	m	m	m	m		m	m	m	m	m	m	m				
	100%	100%																
Apr91	7.9	63.	134.	136.	35.3	62.1		61.0	5.99	3.31	.18	.63	43.6	.51				
	d	d	m	m	m	m		m	m	m	m	m	m	m				
	100%	100%																
May91	12.4	74.	225.	194.	41.9	43.8		60.4	6.39	3.61	.18	.60	43.4	.38				
	d	d	m	m	m	m		m	m	m	m	m	m	m				
	100%	100%																
Jun91	19.3	69.	203.	255.	20.8	32.1		165.9	6.01	2.24	.12	.13	40.7	.27				
	d	d	m	m	m	m		m	m	m	m	m	m	m				
	100%	100%																
Jul91	19.2	69.	162.	295.				80.8										
	d	d	m	m				m										
	100%	100%																
Aug91	16.5	75.	273.	232.	11.5	37.8		100.8	6.13	.64	.09	.16	19.6	.25				
	d	d	m	m	m	m		m	m	m	m	m	m	m				
	100%	100%																
Mean	6.0	75.	2589.	1502.	26.0	53.2		801.8	6.12	2.35	.15	.43	38.5	.35				
	d	d	m	m	m	m		m	m	m	m	m	m	m				
	100%	100%																

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

	CLIMATE				GASES			PRECIPITATION							PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	8.6	88.	597.	67.	.2	5.3		17.1	5.19	1.42	.31	1.66	23.7	.11	.25	2.18	.10	1.49
	d	d	m	m	*d	*d		d	d	d	d	d	d	d	d	d	d	d
	100%	100%			50%	63%		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	84%
Oct90	6.2	85.	480.	69.				48.8	5.04	.78	.19	.67	20.1	.03	.62	.94	.03	.46
	d	d	m	m				d	d	d	d	d	d	d	d	d	d	d
	100%	100%						100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Nov90	.7	87.	384.	24.				50.2	5.76	.50	.19	.53	12.3	.03	.28	.84	.03	.37
	d	d	m	m				d	d	d	d	d	d	d	d	*d	d	d
	100%	100%						100%	100%	100%	100%	86%	100%	100%	100%	66%	100%	100%
Dec90	-1.3	87.	234.	19.				26.5	4.37	1.07	.58	1.34	26.9	.16	.50	1.12	.06	.24
	d	d	m	m				d	d	d	d	d	d	d	d	d	d	d
	100%	100%						100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jan91	-1.8	85.	249.	37.				56.6	4.54	.55	.34	.80	18.2	.07	.60	.53	.06	.22
	d	d	m	m				d	d	d	d	d	d	d	d	d	d	d
	100%	100%						100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Feb91	-4.8	86.	135.	55.				12.8	5.44	1.95	.88	.71	36.5	.32	.49	2.20	.08	.51
	d	d	m	m				d	d	d	d	d	d	d	d	d	d	d
	100%	100%						100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mar91	-.3	84.	300.	99.				25.3	4.36	1.35	.64	.15	24.5	.23	.14	1.49	.01	.31
	d	d	m	m				d	d	d	d	d	d	d	d	d	d	d
	100%	100%						100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Apr91	4.1	79.	291.	175.				13.0	4.36	2.51	.90	1.51	53.1	1.27	.73	2.18	.10	.92
	d	d	m	m				d	d	d	d	d	*d	d	d	d	d	d
	100%	100%						100%	100%	100%	100%	100%	64%	100%	100%	100%	100%	100%
May91	7.3	76.	348.	256.				63.6	4.97	.79	.08	.30	11.8	.02	.14	1.89	.08	.20
	d	d	m	m				d	d	d	d	d	d	d	d	d	d	d
	100%	100%						100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jun91	13.1	79.	387.	238.				104.6	4.58	.97	.24	.14	13.2	.18	.09	.99	.04	.16
	d	d	m	m				d	d	d	d	d	d	d	d	d	d	d
	100%	100%						100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Jul91	16.9	81.	390.	315.				66.6	5.19	.31	.07	.10	4.4	.03	.13	.29	.03	.17
	d	d	m	m				d	d	d	d	d	d	d	d	d	d	d
	100%	100%						100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Aug91	16.6	83.	477.	280.				78.9	5.17	.60	.17	.41	9.3	.07	.17	.91	.04	.16
	d	d	m	m				d	d	d	d	d	d	d	d	d	d	d
	100%	100%						100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Mean	5.5	83.	4272.	1634.		5.3		564.0	4.76	.81	.26	.48	15.1	.12	.28	1.06	.05	.29
	d	d	m	m		xd		d	d	d	d	d	d	d	d	d	d	d
	100%	100%				5%		100%	100%	100%	100%	98%	99%	100%	100%	97%	100%	99%

	CLIMATE				GASES			PRECIPITATION						PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	23.0	65.	197.		6.5	32.4	50.	10.5	7.11									
	d	d	xd		d	d	d	w	w									
	90%	100%	23%		100%	100%	100%	100%	100%									
Oct90	20.5	63.	255.		5.2	26.7	54.	234.0	6.83		1.06	5.42	59.2	.52	4.67	2.16	.55	.37
	d	d	xd		d	d	d	d	d		w	w	d	w	w	w	w	w
	100%	100%	41%		93%	100%	100%	100%	100%		100%	100%	84%	100%	100%	100%	100%	100%
Nov90	16.9	62.	354.		7.2	34.4	33.	167.2	6.23		.00	1.60	53.4	.06	4.09	1.40	.39	1.38
	d	d	xd		d	d	d	d	d		xw	xw	d	xw	xw	xw	xw	xw
	100%	100%	16%		100%	100%	100%	100%	100%		86%	94%	95%	86%	86%	94%	94%	86%
Dec90	12.6	69.	525.		9.2	31.6	26.	59.2	6.19		2.44	3.65	53.4	1.77	1.93	1.93	.28	.50
	d	d	xd		d	d	d	d	d		w	w	d	w	w	w	w	w
	100%	100%	41%		100%	100%	100%	100%	100%		100%	100%	100%	100%	100%	100%	100%	100%
Jan91	13.1	65.	146.		13.1	33.0		51.0	6.13		1.10	2.38	65.7	.73	1.69	1.56	.18	.22
	d	d	d		d	d		d	d		xw	xw	d	xw	xw	xw	xw	xw
	96%	96%	96%		93%	93%		100%	100%		23%	23%	95%	23%	23%	23%	23%	23%
Feb91	12.4	65.	93.		10.7	22.6	31.	203.8	4.74		.95	2.09	31.3	.88	2.08	.83	.19	.13
	d	d	d		d	d	d	d	d		w	w	d	w	w	w	w	w
	100%	100%	100%		89%	89%	89%	100%	100%		100%	100%	77%	100%	100%	100%	100%	100%
Mar91	13.7	69.	137.		5.7	20.4	60.	147.7	6.15		2.15	3.44	56.4	.32	5.65	1.81	.43	.32
	d	d	d		d	d	d	d	d		w	w	d	w	w	w	w	w
	100%	100%	100%		100%	100%	100%	100%	100%		96%	96%	100%	96%	100%	100%	100%	100%
Apr91	15.6	63.	189.		8.9	30.0	61.	77.0	6.29		5.21	4.69	50.7	1.21	7.82	6.22	.19	.54
	d	d	xd		d	d	d	d	d		xw	xw	d	xw	xw	xw	xw	xw
	100%	100%	33%		100%	100%	100%	100%	100%		10%	10%	100%	10%	10%	10%	10%	10%
May91	19.7	52.	155.		14.2	41.3	36.	.0										
	d	d	xd		d	d	xd	w										
	93%	93%	6%		100%	100%	41%											
Jun91	21.6	57.	324.		6.6	21.6	17.	.0										
	d	d	xd		d	d	xd	w										
	93%	93%	16%		100%	100%	36%											
Jul91	24.2	53.			23.0	31.7		4.1	7.30									
	d	d			d	d		d	d									
	100%	100%			100%	100%		100%	100%									
Aug91	25.1	56.	241.		24.2	33.9	24.	.0										
	d	d	xd		d	d	xd	w										
	100%	100%	29%		100%	100%	35%											
Mean	18.2	62.			11.3	30.1	42.	954.5	5.37		1.45	3.37	51.0	.63	4.08	1.97	.36	.50
	d	d			d	d	*d	m	m		m	m	m	m	m	m	m	m
	97%	98%			98%	98%	66%											

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

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	12.7 m	83. m	533. m	137. m	1.7 m	1.0 m	46. m	76.0 m	4.29 m	1.07 m	.58 m	.07 m	29.0 m	.41 m	.01 m	.24 m		
Oct90	7.1 m	85. m	427. m	140. m	2.6 m	1.0 m	53. m	129.0 m	4.28 m	.87 m	.45 m	.12 m	25.0 m	.31 m	.05 m	.13 m		
Nov90	.4 m	86. m	297. m	108. m	4.3 m	1.0 m	47. m	139.0 m	4.38 m	.68 m	.43 m	.09 m	22.5 m	.31 m	.03 m	.08 m		
Dec90	-5.1 m	87. m	142. m	81. m	4.4 m	1.0 m	50. m	88.0 m	4.38 m	.57 m	.55 m	.08 m	23.0 m	.29 m	.04 m	.12 m		
Jan91	-10.1 m	82. m	61. m	101. m	5.3 m	1.0 m	54. m	84.0 m	4.43 m	.33 m	.42 m	.06 m	19.0 m	.12 m	.03 m	.04 m		
Feb91	-6.6 m	77. m	99. m	122. m	6.4 m	1.0 m	58. m	56.0 m	4.34 m	.38 m	.66 m	.15 m	24.0 m	.16 m	.07 m	.20 m		
Mar91	-1.6 m	71. m	135. m	136. m	3.1 m	1.0 m		72.0 m	4.38 m	.58 m	.43 m	.13 m	22.0 m	.22 m	.07 m	.10 m		
Apr91	5.7 m	72. m	341. m	137. m	1.5 m	1.0 m		120.0 m	4.35 m	.72 m	.47 m	.08 m	22.3 m	.35 m	.04 m	.14 m		
May91	14.1 m	76. m	401. m	240. m	1.3 m	1.0 m		126.0 m	4.40 m	.78 m	.39 m	.06 m	21.5 m	.37 m	.02 m	.18 m		
Jun91	17.3 m	74. m	356. m	319. m	1.2 m	1.0 m		32.0 m	4.55 m	.88 m	.40 m	.07 m	20.0 m	.50 m	.02 m	.31 m		
Jul91	18.7 m	78. m	400. m	282. m	.3 m	1.0 m		103.0 m	4.16 m	1.25 m	.42 m	.02 m	34.5 m	.42 m	.02 m	.18 m		
Aug91	18.1 m	75. m	374. m	258. m	.9 m	1.0 m	44. m	32.0 m	4.51 m	.60 m	.26 m	.05 m	16.0 m	.25 m	.00 m	.14 m		
Mean	5.9 m	79. m	3566. m	2061. m	2.7 m	1.0 m	50. *m	1057.0 m	4.34 m	.75 m	.46 m	.08 m	23.8 m	.31 m	.03 m	.14 m		

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

	CLIMATE				GASES			PRECIPITATION						PREC.-OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	22.4	60.		167.	9.1	24.1	78.	5.6	3.73	3.19	1.13	.91	97.4	1.06	.37	.18	.06	.06
	d	d		+m	m	d	d	m	m	m	m	m	m	m	m	m	m	m
	100%	100%				100%	100%											
Oct90	17.9	53.		209.	6.3	21.4	48.	177.4	4.68	.39	.18	1.06	15.2	.10	.27	.04	.04	.04
	d	d		m	m	d	d	m	m	m	m	m	m	m	m	m	m	m
	100%	100%				100%	93%											
Nov90	12.2	38.		225.	8.1	26.2	17.	37.1	4.61	.45	.18	.56	15.3	.16	.27	.04	.04	.04
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Dec90	8.9	37.		99.	13.1	36.3	14.	82.6	4.39	.58	.22	.63	22.4	.12	.31	.02	.03	.03
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Jan91	5.6	33.		125.	16.1	37.1	20.	122.4	4.30	.64	.33	.62	25.5	.12	.31	.01	.03	.03
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Feb91	8.3	31.		136.	9.3	26.1	28.	66.8	4.52	.44	.26	.54	17.8	.15	.27	.56	.03	.03
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Mar91	12.2	39.		154.	9.9	26.3	34.	79.8	4.74	.47	.24	.33	13.3	.18	.15	.20	.03	.09
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Apr91	16.7	50.		210.	5.1	28.1	70.	23.1	4.26	.98	.49	1.69	36.0	.27	.99	.13	.13	.08
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
May91	22.2	62.		242.	4.3	21.2	87.	88.1	4.64	.36	.16	.27	13.4	.12	.11	.02	.02	.03
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Jun91	24.4	64.		237.	5.0	18.1	80.	69.1	4.12	1.17	.47	.15	39.4	.27	.03	.06	.01	.03
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Jul91	27.2	71.		254.	3.7	17.1	72.	218.7	4.35	.59	.30	.12	21.7	.15	.03	.02	.01	.03
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Aug91	7.8	69.		180.	5.1	20.8	75.	122.6	4.50	.69	.36	.05	19.3	.27	.31	.04	.01	.04
	d	d		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	100%	100%																
Mean	15.5	51.		2238.	7.9	25.2	52.	1093.3	4.43	.59	.28	.47	20.9	.16	.21	.08	.03	.04
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

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

	CLIMATE				GASES			PRECIPITATION						PREC. - OPTION				
Date	Temp C	Rh %	Tow hours	Sun hours	SO2 ug/m3	NO2 ug/m3	O3 ug/m3	mm	pH	SO4-S mg/l	NO3-N mg/l	Cl mg/l	Cond uS/cm	NH4-N mg/l	Na mg/l	Ca mg/l	Mg mg/l	K mg/l
Sep90	17.8	70.		133.	51.9	34.6	32.	248.9	4.09	2.30	.56	.78	51.4	.60	.48	.34	.05	.45
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Oct90	12.8	63.		134.	60.3	37.2	21.	52.3	4.24	1.10	.25	.34	31.2	.20	.08	.17	.03	.03
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Nov90	7.8	59.		108.	75.9	44.6	19.	52.1	4.05	1.30	.33	.32	40.5	.13	.09	.18	.04	.04
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Dec90	3.3	65.		80.	53.2	38.6	12.	216.2	4.20	.81	.17	.41	27.1	.09	.07	.12	.02	.02
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Jan91	.0	69.		84.	61.1	39.2	11.	45.5	4.18	1.56	.72	1.10	43.9	.24	.50	.86	.15	.13
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Feb91	2.8	59.		73.	56.2	44.2	19.	29.7	4.29	2.20	.82	1.97	48.3	.36	.93	1.69	.27	.25
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Mar91	6.7	57.		89.	44.0	45.2	36.	53.1	3.44	2.10	.82	1.62	53.9	.55	.40	2.99	1.06	.16
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Apr91	13.9	56.		128.	158.4	40.1	61.	60.2	3.44	2.04	.83	1.65	55.6	.55	.43	3.03	1.09	.20
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
May91	22.2	54.		216.	47.5	167.4	66.	58.9	3.45	2.12	.60	1.67	63.1	.63	.42	3.01	1.10	.16
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Jun91	24.4	52.		274.	60.2	42.7	83.	35.6	3.95	1.90	.53	.68	60.5	.72	.03	.73	.04	.11
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Jul91	26.1	53.		248.	45.4	37.0	93.	61.0	3.80	2.44	1.02	.70	62.1	.70	.04	.66	.10	.12
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Aug91	25.0	54.		220.	56.9	39.9	81.	24.1	4.31	2.01	.61	.23	35.1	.32	.30	.42	.07	.04
	m	m		m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
Mean	13.6	59.	1737.	1787.	64.2	50.9	44.	937.6	3.88	1.74	.52	.83	45.4	.41	.29	.87	.25	.19
	m	m	+	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m

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ABSTRACT
The International Co-operative Programme on Effects on Materials, including Historic and Cultural Monuments has an extensive programme on material exposure in well defined environments. This report includes the environmental data from the fourth exposure year of temperature, relative humidity, time of wetness, sunshine hours, concentrations of SO_2, NO_2, O_3, and precipitation amount and quality. The yearly results from the previous years are also reported and the quality of data has been evaluated.

NORWEGIAN TITLE

DESCRIPTORS		
Environment	Air pollution	Precipitation

ABSTRACT (in Norwegian)

* *Classification:*
- *A* *Can be ordered from NILU, unclassified*
- *B* *Restricted distribution*
- *C* *Classified (not to be distributed)*