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Mr. Murray Clamen
Secretary Canadian Section
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RE: 2004 Progress Report of the Government's Air Quality Committee

Dear Mr. Clamen,

Thank you for sending me this Report with an invitation to comment on it.

I found it to be well written and particularly well illustrated, so that it was a pleasure to go through it. I will list the following comments numerically for ease of reference.

1. The formation and long distance transport of ozone are complex processes. I note from Figure 17 on page 22 that the fourth highest 8-hour ozone maxima for sites within 500 km of the US-Canadian border, have shown an upward trend both in Canada and in the United States. This may be the reason why it has been reported that the ozone level over the North Atlantic has been steadily rising over the same period [1].

Some integrating comments on this would be of interest.

2. Data are given for sulfate deposition and for critical loads for forest soils (Fig 37 page 39). There were no data presented on the level of pH in rain or snow melt over the region affected by acid rain. Presumably these measurements have been made continuously over at least ten years, and the reader might expect to be shown not only the reduced emission levels, but the resulting changes one would expect in rain acidity as a result of the reductions achieved. Are these concordant?

3. In Table 2 on page 41 are shown the USDA Ozone Biosite Index Categories. These apply to black cherry and other naturally occurring species. However, the issue of ozone impact on crops is also very important and should be summarised here. The ozone at its present level in the Fraser Valley is believed to be having substantial economic effects due to reduced yields of crops such as alfalfa; any similar data for the Niagara peninsula should be noted here as well.

4. The brief section on Health Effects is unbalanced. Mention should be made of the recent experimental work in the Hamilton region [2], and there is a considerable body of work on ozone not mentioned here. This includes a study of the impact of ozone on

respiratory school absences in children [3], and the economic analysis of the costs of these is particularly noteworthy and relevant [4].

5. A notable omission is the lack of any mention or analysis of SO₂, NO₂ and particulate emissions from ships. I do not know whether actual work has been done on this source of these pollutants, but data for Halifax and for the St. Lawrence Seaway might be important. There are now a lot of European studies showing the importance of this source, and west coast ports are actively engaged in studying ways in which these emissions might be reduced – they are far from insignificant.

[1] LELIEVELD, J., Van AARDENNE, J., FISCHER, H., De REUS, M., WILLIAMS, J., & WINKLER, P.

Increasing ozone over the Atlantic Ocean

Science 304: 1483-1487; 2004

[2] SOMERS, C.M., YAUK, C.L., WHITE, P.A., PARFETT, C.L.J., & QUINN, J.S.

Air Pollution induces heritable DNA mutations

Proc. Nat. Acad. Sciences 99: 15905-15907; 2002

[3] GILLILAND, F.D., BERHANE, K., RAPPAPORT, E., THOMAS, D.C., AVOL, E., GAUDERMAN, W. J., LONDON, S.J., MARGOLIS, H.G., McCONNELL, R., ISLAM, K.T., & PETERS, J.M.

The Effects of Ambient Air Pollution on School Absenteeism due to respiratory illness

Epidemiology 2001: 12; 43-54

[4] HALL, J.V., BRAJER, V., & LURMANN, F.W.

Economic valuation of ozone-related school absences in the South Coast Air Basin of California

Contemporary Economic Policy 21; 407-417; 2003

I hope these observations are of use to you,

Yours sincerely,



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