

IN THE MATTER of an application for
a Certificate of Approval for the
Ridge Landfill Corporation Limited
site in the Township of Harwich, in
the County of Kent,

AND IN THE MATTER of an Environmental
Assessment Board Hearing commencing
July 14, 1981.

WITNESS STATEMENT

DRAFT

Name: Kay H. Jones, Ph.D.

Position: Civil Engineer, Sanitary Engineer,
Environmental Engineer

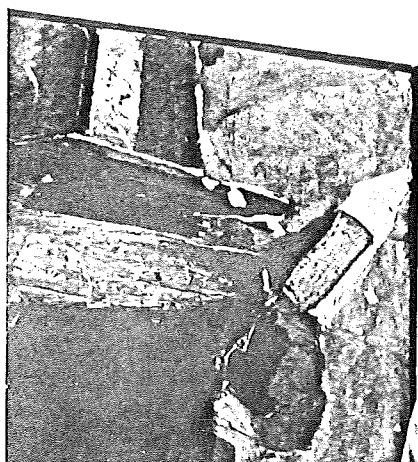
Address: Weston International Inc.
Weston Way
West Chester, PA 19380
USA

Phone: 215-692-3030

I have an interest herein, being an employee of Weston International Inc. carrying on business in Ontario as WESTON DESIGNERS-CONSULTANTS, an international engineering, consulting, environmental, planning, development and design firm retained by the Township of Harwich, a party herein, to provide environmental and other technical and opinion consultation services to the Township of Harwich and the Environmental Assessment Board in these matters.

The evidence presented in this witness statement will be both factual and opinion in nature.

My qualifications and experiences relevant to these matters are set forth in the following biographical, professional profile on page 2.



Kay H. Jones, Ph.D.

DRAFT

Fields of Competence

Air quality management planning; ambient air quality data analysis; air pollution impact analysis; research program development; population exposure modeling; environmental epidemiology; environmental toxicology; industrial hygiene; international program development.

Experience Summary

Twenty years experience in all phases of environmental engineering as a senior governmental advisor, international consultant, research director, program manager, and teacher. For the past four years, has served as senior advisor for air pollution at the President's Council on Environmental Quality. This involved development of a major Presidential initiative on the acid rain problem, development of state-of-the-art air pollution data analysis methods, and development of advanced methods of air pollution risk analysis.

As a World Health Organization consultant, established a national air pollution control program. In the same capacity, assisted the State of Sao Paulo in Brazil establish auto emissions standards. Directed major international cooperative programs under NATO and US/USSR auspices. Developed and managed government/industry cooperative air pollution research programs.

Experience includes ten years involvement in environmental problems associated with Air Force operations, including nuclear health physics, toxic propellants, microwave radiation, noise hazards, water supply, waste disposal, and basic sanitation.

Credentials

B.S. Civil Engineering — University of Washington (1956)

M.S. Sanitary Engineering — University of California, Berkeley (1961)

Ph.D. Sanitary Engineering — University of California, Berkeley (1968)

American Society of Civil Engineers

Member, National Environmental Systems Policy Committee

Member, Executive Committee of the Environmental Engineering Division

Past Member, Air Resources and Environmental Management Committee

Past Board Member, Conference of Environmental Engineers

Tau Beta Pi

Chi Epsilon

Outstanding Senior ASCE Award, University of Washington (1956)

USAF Commendation Medal, Vandenburg AFB (1966)

USPHS Commendation Medal (1971)

USPHS Commendation Medal (1975)

ASCE State-of-the-Art Civil Engineering Award (1975)

Employment History

1981-Present	WESTON
1979-1981	Professor of Environmental Engineering Drexel University, Philadelphia, PA
1975-1979	Executive Office of the President Council on Environmental Quality
1974-1975	WHO Consultant
1970-1974	Environmental Protection Agency Office of Air Programs
1967-1970	DHEW National Air Pollution Control Administration
1956-1966	Biomedical Science Corp. U.S. Air Force

Key Projects

Developed the air quality analytical program contained in CEQ's comprehensive environmental data analysis program (UPGRADE).

Conducted special analyses and prepared the air quality chapters in the 1976 through 1979 annual Presidential Environmental Quality Reports to Congress.

Developed and established the national research program for assessing the acid rain problem.

Developed two computerized air pollution health risk models which combine air quality, population, and health effects data.

Conducted extensive policy analyses on proposed air pollution legislation and regulations.

Coordinated an interagency task committee evaluating the adequacy of Federal air pollution monitoring activities.

Conducted extensive technical analyses of the visibility protection provisions of the Clean Air Act.

Professional Profile

Developed and directed the NATO/CCMS pilot study which involved a multinational effort in assessing urban air pollution.

Coordinated the U.S./Soviet bilateral program on mobile source pollution control.

Was Vice Chairman of the cooperative research program on automotive air pollution sponsored by the government, the auto manufacturers, and the petroleum industry (CRC/APRAC).

Publications

Jones, K.H., Thomas, J.F., Brink, D.L., "Malodorous Products from the Combustion of Kraft Black Liquor V, Steady State Pyrolysis," presented at the TAPPI Conference, February 1968.

Jones, K.H., "Status Report on Legislative Developments on Air Pollution," presented at the Seminar on Management of Air Resources, Industrial College of the Armed Forces, Fort McNair, Washington, D.C., 8 October 1968.

Jones, K.H., Thomas, J.F., and Brink, D.L., "Control of Malodors from Kraft Recovery Operations by Pyrolysis," Journal of the Air Pollution Control Association, Vol. 19 (7), 1969.

Brink, D.L., Thomas, J.F., and Jones, K.H., "Malodorous Products from the Combustion of Kraft Black Liquor III, A Rationale for Controlling Odors," TAPPI Journal, May 1970.

Jones, K.H., and Peck, J.C., "The Pilot Study of Air Pollution for the NATO Committee on the Challenges of Modern Society," Proceedings of the Second International Clean Air Congress, H.M. Englund and W.T. Beery (ed.), Academic Press, New York and London, 1971.

Jones, K.H., and Monti, D.R., "The Clean Air Act, Legislation Encompassing the Systems Approach to Air Pollution Control," Systems Approach to Environmental Pollution, Proceedings of the Symposium on Environmental Pollution of the Operations Research Society of America at the 137th Annual Meeting of the American Association for the Advancement of Science, G.K. Chacko (ed.), Operations Research Society of America, Arlington, Virginia, 1972.

Jones, K.H., and Peck, J.C., "The Regional Approach to the Control of Air Pollution - A Case Study of the St. Louis Interstate Area (Missouri-Illinois)," ECE Symposium on Problems Relating to Environment, Publication No. E.71.II.E.6., United Nations, New York, 1971.

Locklin, D.W., Weller, A.E., Hoess, J.A., and Jones, K.H., "An Overview of Research Needs for Air Pollution Control by Combustion Process Modification," presented at the American Institute of Chemical Engineers Annual Conference, Atlantic City, August 1971.

Jones, K.H., "Cooperative Program on Low Pollution Power Systems Development," presented to the Scientific and Technical Committee at the 17th Annual Session of the North Atlantic Assembly, Ottawa, Canada, 24 September 1971.

Jones, K.H., "The Aims and Achievements of the EPA Air Pollution Control Program," presented at the Applied Science Extension Course 130B, University of California at Riverside, 15 February 1972.

Jones, K.H., "The NATO Committee on the Challenges of Modern Society Air Pollution Pilot Project Goals and Accomplishments," presented at a Round Table on the Legal Aspects of Air Pollution, Council of Europe and the French Centre National de la Recherche Scientifique, Strasbourg, France, 10-11 March 1972.

Jones, K.H., "EPA's Investigation of Aircraft Air Pollution Emissions--Their Impact and Control," presented at the Air Transport Association's Engineering and Maintenance Conference, Kansas City, Missouri, 11 October 1972.

Jones, K.H., Holmes, J.G., "The Rationale for and Feasibility of Aircraft Emission Control," presented at the 3rd International Clean Air Congress, Dusseldorf, Federal Republic of Germany, 8-12 October 1973.

Jones, K.H., "Air Pollution Control and Implementation Planning," presented at the Symposium of Environmental Problems, Ankara, Turkey, 20-22 May 1974.

Jones, K.H., Chairman, et al, CCMS Document No. 33: Final Report on the Air Pollution Pilot Study NATO Committee on Challenges to Modern Society, Brussels, May 1974. The 15 recommendations contained in this report were adopted by the North Atlantic Council and became binding air quality management policy for the NATO membership.

Jones, K.H., Chapman, T., Ferrari, R., Walker, J., "Urban Air Quality Impacts of the National Energy Plan: An Assessment of Six Cities." A contribution to the Presidential Ball Committee Study on the Environmental Implications of Increased Coal Use, August 1977.

Jones, K.H., "CEQ Projections of Ozone Air Quality in 1990," NTIS, February 1978.

Jones, K.H., Bushwick, N., "A Risk vs. Cost Analysis Model for Ozone," CEQ Staff Paper, December 1978.

Jones, K.H., "Ozone Air Pollution: The Public Impact of the New Standard," CEQ Staff Paper, April 1979.

Jones, K.H., Ferrari, R., Chapman, T., "The Council on Environmental Quality Air Pollution Health Risk Model," submitted to Environmental Science and Technology, May 1979.

Jones, K.H., Ferrari, R., "Development of a Relative Exposure Factor for the CEQ Air Pollution Health Risk Model," submitted to Environmental Science and Technology, May 1979.

Ferrari, R., Jones, K.H., "An Upper Limit Analysis of Carbon Monoxide Monitoring in the U.S.," Journal of APCA, October 1979.

Bushwick, N., Jones, K.H., "An Evaluation of the Adequacy of Carbon Monoxide Monitoring in the U.S.," being submitted to the Journal of APCA.

I am a qualified Civil Engineer, Sanitary Engineer, Environmental Engineer and have studied and been actively involved in planning, siting, permitting, assessment, and field analysis of hazardous and industrial waste landfills, other landfills, and solid and liquid waste treatment facilities, including their present and potential effects and control.

I am unable to presently reference and identify exhibits which may be part of my evidence, and therefore cannot attach a list of exhibits, since the applicant has only filed "DRAFT" materials until this time.

My evidence will be directed to the following matters:

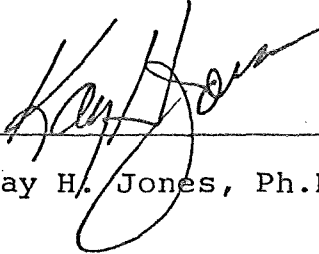
1. sufficiency of the applicant's environmental impact statement and application;
2. insufficiency of the applicant's environmental impact statement and application;
3. matters addressed in the letter dated May 29, 1981 from Tom Cross to Tom Murphy;
4. non-compliance and compliance with regulatory requirements;
5. comparative analysis of state-of-the-art methods, analysis, protocols and designs;
6. deficiencies, assumptions, criteria, adequacy and methodology;
7. necessary quality control and contingency capabilities;
8. continuing analysis, monitoring, responsibility and maintenance;
9. by-laws 5044, 5296, 5613, and 5618 of the Township of Harwich;
10. effect of the proposal on the Township of Harwich and other persons, flora and/or fauna;
11. inaccuracies; and
12. other matters raised upon further information supplied to this Board by the applicant and other persons.

I will also address the following matters as well as matters which Counsel for the Township of Harwich deems appropriate:

The above named witness will attend before the Board and be subject to examination and cross examination if required to do so.

DRAFT

Date: July 13, 1981



Kay H. Jones, Ph.D.



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WITNESS STATEMENT

KAY H. JONES, Ph.D.

DRAFT

VAUGHAN, WILLMS
BARRISTERS AND SOLICITORS
73 Richmond Street West
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Toronto, Ontario
M5H 1Z4

(416) 863-0711

Comments and Requests for Additional Data and Information Related
to Present Landfilling Operations - Air Quality-Related Issues

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1. Of the material available there was a table, identified as Table 2, which contained a summary of results of an organic ambient air sampling survey conducted in the vicinity of the Ridge Landfill site on September 18, 1980. A cursory risk analysis accompanied the results presented in Table 2.

The measured concentration levels for the detectable organics that were reported were compared to acceptable working occupational standards (i.e. TLV or threshold limit values) and, in some cases, ambient concentration levels obtained in urban and rural areas of the U.S.A. No cited references were footnoted on the table concerning these reported ambient values.

This cursory risk analysis, in terms of potential exposure levels to the general public at offsite locations, is not considered state-of-the-art relative to U.S. EPA procedures for evaluating the potential population exposure level in the vicinity of hazardous and toxic waste disposal sites. The comparison to threshold limit values are not acceptable indices of risk. The sampling program and risk analysis should be based on a complete inventory of known hazardous and toxic wastes disposed of at the site as defined by the U.S. EPA. A range of potential offsite exposure levels should be established based on dispersion conditions in the vicinity of the site as well as the potential release rate of hazardous and toxic substances disposed of at the site. As suggested by the U.S. EPA, these predicted ambient concentration levels for various organics should be compared to computed cancer risk assessment thresholds. If predicted values for certain substances are approaching or exceeding

these values, a comprehensive ambient air sampling should be initiated at critical receptors in the vicinity of the disposal site.

It is important to note that:

- the reported concentration of tetrachlorethlene may be 5 to 10 times an acceptable cancer risk level and
- existing air quality was not addressed in the environmental analysis for the expanded landfill operations as suggested in Ontario's MOE guidelines for assessing the impact of waste disposal sites.

Required: A more comprehensive and detailed analytical evaluation using cancer risk assessment techniques suggested by the U.S. EPA, to determine the magnitude and extent of potential offsite exposure levels to hazardous and toxic wastes previously disposed of at the existing site.

2. The results of an ambient air monitoring survey were presented by the Ministry of the Environment to Harwich Council on March 31, 1981. The results of the monitoring program indicate that both organic air compounds and total suspended particulates (including analysis for heavy metal concentrations) were obtained in the vicinity of the existing Ridge Landfill Site during the months of August, September, October, November and early December 1980. The information presented to Council contained only summary tables on the results of the ambient air monitoring program and the locations of the monitoring sites. No information was provided, for example on sampling period(s) and other sampling procedures such as quality assurance activities. In addition, there was no indication from the information provided that any on-site meteorological

monitoring was performed or any indication of the overall vehicle activity at the Landfill Site during the day when sampling was conducted. Finally, from the information provided there is no way of knowing who actually was responsible for the collection of the data and the checking of the validity of the results that were reported.

Required: A copy of the complete report, if it exists, on the results of the ambient air sampling (both TSP and organic compounds) conducted in the vicinity of the Ridge Landfill site. The report should document the entire sampling methodology and protocol that was followed, including the rationale for site selection, as well as the sampling procedures, quality assurance activities, and analytical methods used. The person or persons involved and responsible for the actual collection and analysis of the samples should be identified.

3. With regard to the organic monitoring program one day of sampling at one location to assess the potential exposure levels to the residents in the area surrounding the landfill site is totally inadequate. The results presented in Table 2 entitled Organics Sampling Analysis are not necessarily predictive of the range of potential exposure levels or conditions associated with the operation of the existing landfill.

The results indicate that sampling analytical procedure, which was not described in the available documents may not have been sensitive enough to detect highly carcinogenic compounds such as benzene, etc.

Required: A program outlining the design and specification of an ambient organic sampling survey that would be necessary to establish the magnitude and extent of organic compound concentrations in the vicinity of the site, especially carcinogenic substances, is requested. The sampling and analytical procedures should be identified.

Comments and Requests for Additional Information and Data
Related to the Proposed Expanded Landfill Operations at the
Ridge Landfill Site - Air Quality-Related Issues

1. None of the supporting documents accompanying the permit application addresses the air quality impact associated with fugitive dust emissions from the increased truck traffic at the expanded site. It is important to note that based on the brief sampling conducted in 1980 in the vicinity of the existing landfill site, measured total suspended particulate concentration levels were in excess of U.S. EPA's secondary standards.

Required: Mitigative measures or steps to be implemented to ensure that total suspended particulate concentration levels attributable to fugitive emissions at the landfill site and unpaved access roads do not exceed the established TSP standards.

2. There is no provision addressed within any of the supporting documents for an off-site total suspended particulate ambient air monitoring program to ensure compliance with the ambient total suspended particulate standards.

Required: Details and specifications of a TSP ambient air monitoring are requested that will characterize the potential peak TSP concentration levels attributable to the operation of the expanded landfill site.

3. In addition, there is no provision that was contained in any of the support documentation on the kind of organic compound ambient air monitoring program that may be required in order to demonstrate that such organic emissions are not increasing over those already being emitted from the present landfill operation.

Required: A monitoring plan documenting the sampling protocol and frequency sampling necessary to ensure that hazardous and toxic substances previously disposed of at the Ridge Landfill site potentially do not create an imminent^{hazard} to the local residents in the community surrounding the landfill site.

4. There are no provisions made for a contingency plan in case of an emergency where a dangerous release of potentially toxic air pollutants were to take place either from the existing landfill area or in future operations of the new site.

Required: A contingency plan for providing public warning and the handling of emergency releases of toxic air pollutants should be provided.