No. CT-91/1

Public VERSION

THE COMPETITION TRIBUNAL

IN THE MATTER of an application by the Director of Investigation and Research for orders pursuant to section 92 of the Competition Act R.S.C. 1985, c. C-34, as amended;

AND IN THE MATTER of the acquisition by Hillsdown Holdings (Canada) Limited of 56% of the common shares of Canada Packers Inc.

B E T W E E N:

THE DIRECTOR OF INVESTIGATION AND RESEARCH

Applicant,

- and -

HILLSDOWN HOLDINGS (CANADA) LIMITED,
MAPLE LEAF MILLS LIMITED,
CANADA PACKERS INC. and
ONTARIO RENDERING COMPANY LIMITED

Respondents

AFFIDAVIT OF DR. EARL E. SHANNON

I, Earl E. Shannon, of the County of Oxford, in the Province of Ontario, MAKE OATH AND SAY:

1. I received a B.S.A. degree in Agricultural Engineering from the University of Guelph in 1965, a M.A.Sc. degree in Civil Engineering, Water Resources from the University of Waterloo in 1967 and a Ph.D. in Environmental Engineering from the University of Florida in 1970.

2. Since 1979, I have been working in Ontario in the environmental engineering field, and as a result have frequently dealt with the Ministry of the Environment ("MOE") in obtaining, or seeking to obtain, Certificates of Approval ("C of A") for

clients. In the course of such assignments and my other dealings with the MOE, I have become thoroughly familiar with the MOE's regulations and policies dealing with the discharge by industrial plants of contaminants into the environment.

3. I am a current member in the following professional organizations: Association of Professional Engineers of Ontario, Water Pollution Control Federation, American Society of Civil Engineers (Environmental), American Water Works Association, Pollution Research, International Association for Great Lakes Research and North American Lake Management Society.

4. I have held adjunct professor positions at the University of Ottawa, Department of Civil Engineering, and the University of Florida, Department of Environmental Engineering and Sciences.

5. I am currently the Regional Manager, Ontario Region, at CH2M HILL, an environmental consulting firm specializing in water, wastewater, hazardous waste, solid waste, transportation and other like matters.

6. I have been asked by Maple Leaf Foods Inc. (formerly Canada Packers Inc.), the owners of Rothsay Rendering ("Rothsay"), to provide my opinion on the process it will face in attempting to obtain MOE regulatory approval to expand the Moorefield plant, and to provide an estimate of the costs of obtaining the pollution control devices which such an expansion would require.

7. For the purpose of giving my report in the present proceeding before the Competition Tribunal, I have had full and free access to the Moorefield rendering plant and to Rothsay Rendering's information about the plant. I also rely on knowledge gained through my previous involvement with environmental issues involving Rothsay.

8. Attached hereto as Exhibit "A" to this my affidavit is my resume. Attached hereto as Exhibit "B" to this my affidavit is a true copy of my report in the present proceeding before the Competition Tribunal.

Sworn before me at the)
County of Oxford in)
the Province of Ontario)
this 2nd day of August 1991.)

Earl Shannon
Dr. Earl E. Shannon

A. Svoboda
A Commissioner, etc.

9460D/11-13

This is Exhibit "A" to the
Affidavit of Dr. Earl E. Shannon,
Sworn before me on the 2nd day
of August, 1991.

A. Svoboda
A Commissioner, etc.

DR. EARL E. SHANNON

EARL E. SHANNON
Regional Manager, Ontario Region

Education

B.S.A., Agricultural Engineering, University of Guelph, 1965
M.A.Sc., Civil Engineering, Water Resources, University of Waterloo, 1967
Ph.D., Environmental Engineering, University of Florida, 1970

Experience

Dr. Shannon has served as project manager on many CH2M HILL projects, including:

Industrial Wastes

- Preparation of Best Available Technology Economically Achievable (BATEA) document for the decommissioning of ICI's Lambton, Ontario phosphate fertilizer operation. Project included characterization, treatability, pilot testing, and public meetings.

- Carried out a comprehensive water use and conservation investigation for the General Motors complex in Oshawa, Ontario

- Design of stormwater and wastewater treatment facilities for the CAMI small car manufacturing plant in Ingersoll, Ontario

- Characterization, pilot plant studies, process design, and detailed design for the sludge reduction system for General Motors water treatment and oil recovery facility in St. Catharines, Ontario

- Development of a wastewater pretreatment and glaze and slip recycle system for American Standard's Toronto, Ontario manufacturing facility

- Treatability investigations, process design, and design for a wastewater equalization facility for a specialty chemical manufacturer, Hart Chemical, Guelph, Ontario

- Characterization, treatability studies, and process design investigation for several other industries, including Budd Canada, Uniroyal Tire, Firestone Steel, Elmira Refiners, Pinecrest Foods, Still Meadow Farms, Atlas Steel, Stelco Inc., Tend-R-Fresh Poultry, Waterloo Metal Stampings, GM-Diesel, Dare Foods, and Weston Bakeries

Hazardous Wastes Treatment

- Overall present manager for the Elmira/St. Jacobs contaminated water supply project. Project involved a multi-disciplinary approach to solving nitrodimethyalmine (NDMA) contamination of a municipal water supply aquifer and included toxicological, hydrogeological, and engineering components. Total project cost is in excess of $20 million and is being carried out on a fast-track basis. Extensive public participation is involved.

- Carried out a feasibility study, MOE certificate applications, and design for a mobile sludge dewatering system for liquid and special wastes. Provided technical direction and management of the company (Envirosite Inc.) during startup year.

- Survey of 1,200 manufacturing establishments in Ontario to develop estimates of the quantities of liquid industrial and special wastes being generated in the province, and to establish present handling and disposal practices

Municipal Wastewater Treatment

- Preparation of pollution control strategy planning (PCP) guidelines for the Ontario Ministry of the Environment

Water Quality

Carried out Ph.D work on lake eutrophication and managed several water quality projects including:

- Assessment of euthrophication factors in Lake Okeechobee (second largest fresh water lake in the U.S.), Florida. Continued ongoing involvement as a technical advisor on management of the lake.

- Water quality studies (nitrogen, phosphorus, and water balances) for major land use types in the Everglades Agricultural Area

- Assessment of the bioavailability of phosphorus loadings from municipal treatment plants discharging to the Great Lakes. Algal assays and chemical extractions were carried out at 12 different wastewater treatment plants in Ontario. Results were extrapolated to the Great Lakes as a whole with respect to loading reductions and associated cost for full-scale implementation of bioavailable phosphorus control

Prior to founding CANVIRO Consultants Ltd., Dr. Shannon held a number of positions including head of the chemical processes unit at the Wastewater Technology Centre of Environment Canada in Burlington, Ontario; and division manager for Water and Wastewater for CH2M HILL's Eastern U.S. District in Gainesville, Florida.

He also served as president and technical director of Envirosite Inc., a company providing mobile waste management services to industrial and municipal clients.

He has held adjunct professor positions at the University of Ottawa, Dept. of Civil Engineering; University of Sherbrooke, Dept. of Chemical Engineering; and the University of Florida, Dept. of Environmental Engineering and Sciences; and has served as external examiner for several Ph.D. and Master's degree candidates.

Previous Project Management Responsibilities

- Assessment of PCBs in wastewaters and sludges for 30 Ontario treatment plants
- Design of the largest potable water reverse osmosis plant (3 mgd) in North America for the City of Cape Coral, Florida
- Bench- and pilot-scale treatability studies for several other industries, including Hercules, Monsanto, General American Transport Corp., Air Products, American Cyanamid, ERCO, Alcan, Domtar, Kaiser Agricultural Products, U.S. Sugar, General Electric, and Mead Corporation

During his 25 years in the environmental field, Dr. Shannon has authored over 50 technical publications and is a recognized authority in the areas of industrial and municipal wastewater treatment, lake eutrophication, and water quality.

Professional Registration

Ontario

Membership in Professional Organizations

Designated Consulting Engineer (APEO)
Water Pollution Control Federation (WPCF)
American Society of Civil Engineers (Environmental) (ASCE)
American Water Works Association (AWWA)
Pollution Control Association of Ontario (PCAO)
National Solid Waste Management Association
International Association of Water Pollution Research (IAWPR)
International Association for Great Lakes Research (IAGLR)
North American Lake Management Society (NALMS)

SUPPLEMENTARY EXPERIENCE

EARL SHANNON

- Technical and economic assessment of biological treatment for a high strength chemical wastewater, including high levels of non-ionic surfactants, for Alkaril Chemical Inc.

- Process and detailed design for a sequencing batch reactor biological wastewater treatment system for Richardson Foods of St. Marys, Ontario

- Design and implementation of wastewater treatment process modifications including equalization, installation of dissolved air flotation for thickening waste activated sludge, and in-plant changes to reduce organic loads at Rothsay, the Rendering Division of Maple Leaf Mills Ltd.

- Conducted environmental assessment and appeal hearings for the discharge of a highly treated effluent to a small receiving stream for the Rendering Division of Maple Leaf Mills Ltd.

- Evaluation and upgrading of a metal plating treatment system including chromium and zinc recovery systems and filter press sludge dewatering, Rauscher Plating Ltd., Cambridge

- Process upgrading of a cannery wastewater system, Cobi Foods, Whitby, Ontario

- Treatment system upgrading for potato and corn chip plants, Hostess Foods Ltd., Cambridge and Frito Lay Ltd., Kitchener, Ontario

- Evaluated and made recommendations for upgrading odour control facilities at a New Brunswick-based rendering plant and two Ontario-based used oil recovery facilities

- Inventory of industrial liquid and special wastes for the Regional Municipality of Waterloo

- Evaluation of the operation of 30 municipal wastewater treatment systems in the Great Lakes Basin for the International Joint Commission

- Water quality element of the Orlando 208 facilities plan. Project involved watershed monitoring to establish nutrient, BOD, and other

pollutant loadings as well as assessment of various stormwater control options such as retention basins, swales, drainage wells, and wetlands

- Water quality monitoring at the 300,000-acre Deseret Ranch in order to quantify nutrient loadings to the St. John's River. Project was followed by environmental hearings at which expert witness testimony was provided

- Treatability studies and process design for full-scale phosphorus removal facilities at four Canadian Forces Bases

- Process design for five lime softening plants

- Utilization of industrial waste products and by-products for phosphorus removal

- Design of land application systems and odour abatement studies for Anheuser-Busch's breweries in Jacksonville, Florida, and Williamsburg, Virginia

This is Exhibit "B" to the
Affidavit of Dr. Earl E. Shannon,
Sworn before me on the 2nd day
of August, 1991

A. Svoboda
A Commissioner, etc.

DR. EARL E. SHANNON

REPORT OF DR. EARL SHANNON

Background of Environmental Matters of Moorefield Plant

1. The Moorefield plant is located just outside the hamlet of Rothsay on the west bank of Moorefield Creek, a trout stream which flows into the Conestoga Reservoir, which is a recreational lake created by a dam that restricts the flow of Moorefield Creek each year from March to October, inclusive. After flowing past the dam, the water in Moorefield Creek continues into the Grand River, and then to Lake Erie.

2. Until 1983, the Moorefield plant's wastewater was disposed of by spray irrigation onto the land on which the Moorefield plant is located. This wastewater had to be, and was, partially treated.

3. Management decided to upgrade the wastewater disposal system at the Moorefield plant. My firm was hired to design the new system. I was the manager of this project and, among other things, assisted management in ultimately obtaining a C of A for the upgrade.

4. The March 1985 application for a C of A for the upgraded wastewater disposal system was initially considered after a formal public hearing by the Environmental Assessment Board

("EAB") under section 26(1) of the Ontario Water Resources Act. The EAB in September, 1985, recommended that the application be denied, on the basis that the discharge of effluent into Moorefield Creek, which was part of the planned upgraded wastewater disposal system, would constitute an environmental impairment without a compensatory public benefit, and therefore the public interest would not be served. The company appealed successfully to the Environmental Appeal Board, and pursuant to the decision of that body in January, 1986, a C of A was issued in May 1986. This C of A permits effluent discharges into Moorefield Creek, but only during the months of November, December, January and February when the Conestoga Lake dam does not restrict the Creek's flow.

5. The current wastewater treatment and disposal system at the Moorefield plant operates under a C of A (# 4-079-84-866). The system consists of several steps. Wastewater is first passed through a preliminary treatment process which includes flotation and skimming as well as activated biological treatment. This wastewater then flows into the first of three lagoons at the Moorefield plant site, where it undergoes further aeration. It then flows into the second lagoon. There, lime is added to the wastewater. This raises its pH level and allows much of the ammonia to escape as a gas. Some of the resulting wastewater is spray irrigated at the plant site. The remainder is stored in this second lagoon or the third lagoon. During eight months of the year, this wastewater accumulates in the

second and third lagoons. It is then discharged from November to February into Moorefield Creek. The Moorefield plant's 1990-91 seasonal discharge was about million gallons. In 1990 (between the months of May and October, inclusive) about million gallons of wastewater was spray irrigated at the plant site.

7. For the purposes of my evidence in this proceeding, I have been asked to assume that the Moorefield plant would have to be expanded to accommodate the volumes (in metric tonnes) of renderable material per week appearing in the table below. These volumes reflect an up-to-date forecast (as of July 1991) of Rothsay's volumes if the Orenco plant had to be divested.

YEAR	BEEF	PORK	POULTRY OFFAL	FEATHERS	BLOOD	TOTAL
1991						
1992						
1993						
1994						
1995						
1996						

Costs of Wastewater Treatment Facilities

8. There is in effect a continuum of costs that could be incurred to ameliorate the environmental effects of the increased production at the Moorefield plant. There is, however, generally a diminishing marginal return on the costs borne to reduce pollution. In other words, as units of a contaminant are eliminated from a waste stream, the costs of eliminating an additional unit rise. Thus, a balance must be struck between the ideal of zero discharge and the economic reality of having to operate an industrial

business. The MOE is aware of this balancing requirement. Therefore, my cost analysis reflects the installed costs of wastewater treatment facilities which I believe would permit the Moorefield plant to continue its seasonal discharge of wastewater into Moorefield Creek within the parameters set by the current C of A.

9. The installed cost of the facilities for the treatment of wastewater resulting from the assumed increase in the Moorefield Plant's production on the basis discussed above is (+50%/-30%). The breakdown of these costs appears at Appendix 1.

10. The equipment set out in Appendix 1 for upgrading the wastewater treatment facilities at the Moorefield plant includes

Procedure For Obtaining Approval

11. Based on my experience with the MOE reglatory process, I believe that the assumed expansion in the volume of material processed by Moorefield would require a new C of A. While minor changes to processes and equipment for wastewater treatment may be accommodated by amendments to an existing C of A, in the case of the Moorefield plant, the expansion would necessitate changes which would require a new C of A, for which Rothsay would have to apply.

12. While there is no statutory requirement that a formal hearing be held before a C of A is issued, in the case of the Moorefield plant, I believe that a hearing would be required. This conclusion is based upon the practice of the MOE, and the particular circumstances of the Moorefield plant. Typically, notices of the company's intentions are

published and public comment is invited at one or more short, informal meetings. Unless there is insignificant opposition to the application, the MOE will require a formal hearing before the Environmental Assessment Board. In the case of the Moorefield plant, there will almost certainly be a significant amount of public opposition to any expansion. Rendering by its nature is an activity which most people find unattractive. Therefore, nearby residents as well as those at the Conestoga Lake reservoir would prefer that there be less of it, not more, at the Moorefield plant. This is especially true since the Moorefield plant has in the past been a source of periodic environmental problems.

13. Typically, where a formal hearing occurs, it now takes a year from the time an application is made until the EAB issues its final recommendation. Any appeals process, such as that undertaken in 1985, can extend another six to nine months at a minimum. As a result, even if a C of A to accommodate the expansion of the Moorefield plant is issued, it may well be that over 18 months will elapse. Only after a new C of A is issued would Rothsay be justified in ordering the wastewater treatment equipment for its proposed expansion.

14. Rothsay would almost certainly incur significant out-of-pocket costs in the C of A application process. These costs are not factored into the installed costs of the wastewater treatment facilities set out in Appendix 1, are distinct from the costs incurred by the delay inherent in the C of A application process, and are in addition to the company's internal costs (e.g., time spent by its personnel to work on the application). These out-of-pocket costs would include fees for environmental engineers/consultants to prepare reports and provide evidence to the MOE and at hearings, counsel fees for preparing and presenting the company's case to the MOE and at hearings, and public relations expenditures

These expenditures would have to be made up-front, before and at the various stages in the application process, and many months or even years before any C of A was granted or construction on the expansion could begin.

15. It is difficult to predict the amount of such out-of-pocket expenditures, because of such variables as whether an initial decision will be appealed, and how the company decides to allocate its expenditures

. However, given the circumstances of the Moorefield plant, it would be reasonable to expect such out-of-pocket expenditures to total perhaps to . These expenditure estimates are based on experiences with MOE approvals on projects with similar complexity. The lower value represents a relatively straightforward approval, and the higher value represents a more complicated situation (i.e., a hearing plus an appeal).

16. In addition to the cost and delay which would result from the need to obtain a C of A, there is a significant risk that the C of A would ultimately be denied altogether. Overall, in Ontario, environmental regulation has become more stringent. The balance, alluded to above, between the ideal of zero discharge and the reality of having to operate an industrial business has shifted perceptibly toward the former in the recent past. For example, an Ontario government policy referred to as "MISA" (Municipal and Industrial Strategy for Abatement) has been introduced since the 1985 C of A was issued. MISA requires the use of the "best available technology economically achievable" ("BATEA") and has as its stated goal the "virtual elimination of toxic discharges into our Great Lakes". While I cannot say that it is unlikely that a C of A will ultimately be issued for the assumed expansion, the risk that it will be denied is significant and should factor

into any cost analysis undertaken for the project. I estimate the probability that a C of A will ultimately be denied for the assumed expansion, even if it incorporates the wastewater treatment facilities set out in Appendix 1, to be on the order of per cent.

17. Based on my knowledge of the Moorefield plant, I estimate that the equipment set out in Appendix 1 will result in extra annual operating costs of . These costs include labour, chemicals, energy, maintenance, troubleshooting and laboratory analyses.

APPENDIX 1

SEE FIGURE 1 FOR OUTLINE OF BIOLOGICAL REQUIREMENTS FOR THE EXPANSION

Figure 1: Rothsay WTP for Organic Removal and Nitrification