

CT-91/2

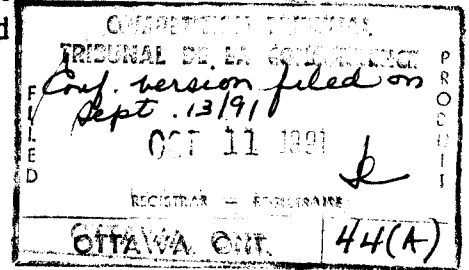
**THE COMPETITION TRIBUNAL**

IN THE MATTER OF an Application by the Director of Investigation and Research under s. 79 of the Competition Act, R.S.C., 1985, c. C-34, as amended;

AND IN THE MATTER OF certain practices by Laidlaw Waste Systems Ltd., in the communities of Cowichan Valley Regional District, Nanaimo Regional District and the District of Campbell River, British Columbia.

**B E T W E E N:**

**THE DIRECTOR OF INVESTIGATION  
AND RESEARCH**



**Applicant**

- and -

**LIDLAW WASTE SYSTEMS LTD.**

**Respondent**

---

**A F F I D A V I T**

---

I, JAMES J. MCRAE, of the District of North Saanich and the Province of British Columbia, make an oath and say as follows:

1. I am a Professor of Economics in the School of Public Administration at the University of Victoria, and have been retained by the Director of Investigation and Research to provide an assessment of the economic and industrial organization aspects of issues raised in the Application filed by the Director in this proceeding.

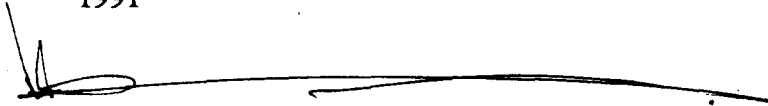
2. Attached hereto, and marked as Exhibit "A", is a true copy of my report. The content of Exhibit "A" and the findings expressed therein are true to the best of my knowledge, information and belief.

3. I have taught courses and conducted research in the areas of industrial organization, transportation economics, international trade, regulatory economics and regional economic development. Attached hereto, and marked as Exhibit "B", is a true copy of my curriculum vitae.

4. I make this affidavit pursuant to Rule 42(1) of the Competition Tribunal Rules.

SWORN before me at the )  
City of Victoria, in the )  
Province of British Columbia )  
this 12<sup>th</sup> day of September, )  
1991

  
\_\_\_\_\_  
JAMES J. MCRAE

  
\_\_\_\_\_  
Commissioner for Taking  
Affidavits  
MADELEINE BARRIE  
NOTARY PUBLIC  
817A FORT STREET  
VICTORIA, B.C. V8W 1H6  
382-5331

This is Exhibit A referred to in the  
affidavit of JAMES J. MCRAE  
Sworn before me at Victoria  
in the Province of British Columbia, this  
12<sup>th</sup> day of September 1991  
A Notary Public in and for the Province  
of British Columbia

**EXHIBIT "A"**

**THE COMPETITION TRIBUNAL**

IN THE MATTER OF an Application by the Director of Investigation and Research under s. 79 of the Competition Act, R.S.C., 1985, c. C-34, as amended;

AND IN THE MATTER OF certain practices by Laidlaw Waste Systems Ltd., in the communities of Cowichan Valley Regional District, Nanaimo Regional District and the District of Campbell River, British Columbia.

MADELEINE BARRIE  
NOTARY PUBLIC  
817A FORT STREET  
VICTORIA, B.C. V8W 1H6  
382-5331

**BETWEEN:**

**THE DIRECTOR OF INVESTIGATION  
AND RESEARCH**

Applicant

- and -

**LIDLAW WASTE SYSTEMS LTD.**

Respondent

  
~~CONFIDENTIAL~~ AFFIDAVIT EVIDENCE OF JAMES J. MCRAE

1. I have been retained by the Director of Investigation and Research (the "Director") to provide a written assessment of the economic and industrial organization aspects of issues raised in the Application filed by the Director in this proceeding.
2. My report and opinions are based on my professional training as an economist, my review of relevant learned literature, my review of documents provided by the Director and my independent research, data gathering and data analysis activities.

3. My professional qualifications are contained in my curriculum vitae, which is marked as Exhibit "B".

4. Section I contains a definition of the relevant product and geographic markets. Section II develops and analyzes information on Laidlaw's market share, while Section III considers the ease of entry into the marketplace. Section IV evaluates Laidlaw's dominant position, and Section V provides a brief analysis of Laidlaw's market conduct in terms of alleged anti-competitive acts. Finally, Section VI relates Laidlaw's conduct on central Vancouver Island to its overall corporate strategy. An Appendix to the Report contains three relevant tables of statistical information based on information provided by the Respondent.

## **I THE ISSUE OF MARKET DEFINITION**

5. Economic analysis of the structure, conduct and performance of any microeconomic market requires that the analyst first define the market by identifying the boundary to be drawn between products and services deemed to be "in" and those lying "outside" of the market.

6. The critical criterion for the purpose of defining the relevant product market is the extent to which the behaviour of the firm under study with respect to key economic variables such as price, quality of service and method of production is constrained by the actions of consumers (demand substitution) and/or other producers (supply substitution).

7. Demand substitution evaluates the potential that consumers will switch over to other products or services which are capable of satisfying their demands, while supply substitution estimates the possibility of "capacity switchovers" by existing sellers of other related products or services.
8. Thus, a market is defined sufficiently broadly to include all the products and firms whose competition with the subject firm constitutes substantial constraints on its behaviour, i.e. it should include all products and firms that do, or easily could, offer reasonable alternatives to the purchaser if the subject firm were to charge high prices or produce inferior products. Products and firms are deemed to be outside of the market if the demand and/or supply constraining effects on the subject firm are deemed to be relatively weak.
9. The geographic - as opposed to the product - dimension of the market may be determined in a similar way, i.e., as the likely substitution to producers whose production facilities are located in other regions or countries.

### **The Solid Waste Hauling Industry**

10. Demand and/or supply substitution possibilities in the solid waste collection and disposal industry are limited by the physical volume of waste generated per week by each customer, and the distinct transportation technology used to most efficiently serve customer needs.
11. Establishments which generate low volumes of solid waste per week, e.g. single or multiple-dwelling residential customers and some small

commercial establishments, do not require containerized storage facilities as they are able to store the small volume of waste generated in plastic garbage bags or trash cans. Other establishments which produce moderate volumes of solid waste - in the range of one to ten cubic yards per week - desire their waste to be stored in more substantial (usually metal) containers. Typical customers in this middle category are stores, restaurants, shopping malls, office buildings, industrial parks, etc. Finally, large volume industrial customers also desire containerized service. However, due either to the large volume of waste generated per week, or the fact that it may be "stored" longer in the container without health or odor problems, the containers used are much larger (up to 50 cubic yards) than the ones used for medium volume customers. Manufacturing establishments and construction sites are typical users of this type of service.

12. From the set of available transportation technologies which may be used to provide service to the three different classes of solid waste customers, four methods are economically relevant. The first method of producing solid waste collection and disposal services uses a rear-load vehicle and two-man crew. In this technology, the solid waste is loaded manually into the rear of the vehicle after which it may be compacted if the vehicle is so equipped. Side-loaders use the same manual loading method except that the waste is loaded in the side of the vehicle. The system uses a one or two-man crew. Both the rear and side load transportation technologies may be adapted to accommodate container lifting capacity to complement the manual loading method, but the container must be in a location (or moved to a location) which makes it accessible to the truck's rear or side mounted lifting mechanism.

13. The third production method uses front-load vehicles and a one-man crew. In this technology, the lifting mechanism (a pair of forks), is mounted on the front of the truck, and hence is visible to the driver in his cab. This system allows the driver to approach the container in the fashion of a fork-lift vehicle, pick up the container, swing it over the cab, and dump the contents into the hopper of the truck. Container capacity for this technology ranges between two and ten cubic yards, but most containers are in the middle range of three, and four cubic yards.
  
14. The final transportation technology uses a so-called "roll-off" method in which the container is winched onto the back of a flat-bed type truck by means of a cable system, and secured to the truck by means of a set of rails. The truck and attached container are then driven to the dump site where the contents are emptied and the container returned to the customer's premises. The containers used in this technology range from 12 to 50 cubic yards.
  
15. Low volume customers who are able to store their waste in garbage bags or trash cans are most efficiently served by means of rear or side load vehicles where the bags and small cans of garbage are loaded manually into the truck. Medium volume establishments requiring containerized storage of the solid waste produced are most efficiently served by means of front-load vehicles, or less frequently, by automated rear or side loaders which have container lifting capacity. Large volume customers also requiring containerized storage are most efficiently served by the roll-off technology.

## Application Of The Market Defining Criterion

16. With this background information on the different classes of customer demands and economically relevant transportation technologies, it is possible to define the boundaries of the relevant product market.
  
17. Two sets of constraints - one economic and the other regulatory - restrict medium volume commercial customers' ability and willingness to obtain solid waste collection and disposal services by demanding service either as a low volume or as a large volume customer.
  
18. Consider first the economic constraints facing medium volume commercial customers who wish to obtain service as low volume customers. This implies that the customer will forgo his desire to have the week's waste stored in a single appropriately sized metal container and instead accumulate the week's waste in several plastic garbage bags or trash cans for manual pick-up. This is not likely to be a practical economic solution given the large number of cans (or bags) which must be moved to the curbside each week. For example, a three cubic yard container translates into sixteen large, residential-style trash cans. Also, trash cans, and especially plastic garbage bags, do not provide the same degree of yard cleanliness and protection from scavengers. This latter point is explicitly used by Laidlaw in their **Sales Manual**. Salespeople are instructed to stress this benefit as illustrated by the following quotation:

"Good morning, Mr. \_\_\_\_, I'm (your name) from Laidlaw. I couldn't help noticing that pile of trash against the back of your building. As you can see from this Polaroid picture I took this morning,



it's quite a mess. It's a fire hazard and breeding ground for rats and vermin. I'm sure you'd agree that a clean-up of this area would improve its appearance, reduce the danger of fire and avoid the chance of a City Inspector filing a complaint against your business."

19. Furthermore, various municipal and regional district solid waste and fire by-laws in the three geographic areas identified by the Director can be interpreted as severely constraining the ability of most consumers from using low volume hand bag or trash can service.
20. In a parallel fashion, there are both economic and regulatory constraints severely inhibiting the ability of most customers previously using a medium volume containerized service from switching to a large volume containerized one.
21. Consider first the economic considerations. Obviously, the attempted substitution implies that a customer accumulating (say) three cubic yards of solid waste per week would require over thirteen weeks to fill a forty cubic yard roll-off container. Thus, the customer is faced with the health, odor and mess problems of "storing" his garbage for an unduly long time. Also, many customers desiring containerized service simply do not have the space required to accommodate large roll-off containers.
22. The regulatory constraints inhibiting this substitution are equally severe. For example, the District of Campbell River (consolidated By-Law 1386 and 1604) requires that "every owner of a multiple dwelling and every owner or occupier of all trade premises within the District shall remove all rubbish from

his premises at least once weekly or more frequently if so instructed..." The City of Nanaimo (By-Law 2841) requires trade waste to be picked up "at least once every collection period".

23. I conclude that for both economic and regulatory reasons, there are no reasonable substitutes to which a significant number of medium volume customers wishing containerized service could turn if they desired to obtain substitute service as low volume customers.

24. Supply substitution, i.e. capacity switchovers by producers of either low volume, hand bag/trash can service, or large volume industrial containerized service are equally constrained. Service to medium volume customers desiring containerized service by providers using manual rear or side-load vehicles would be unduly costly as the container of waste would have to be manually unpacked, and placed in the truck by the crew. Likewise, a firm providing industrial roll-off service could not realistically enter the medium volume containerized market due to the higher costs involved in picking-up, transporting, dumping and returning a single container for each customer.

25. In summary, I conclude that solid waste collection and disposal service provided to medium volume, commercial customers desiring the containerized storage of their refuse - hereafter called commercial containerized service - is a relevant product market for further analysis. This placement of market boundary lines follows from the observation that both supply and demand substitutions are severely constrained by economic and regulatory forces.

26. The problem of defining the relevant geographic boundaries of the market may be solved by using a similar framework to that used for the product market definition. Specifically, can a significant number of commercial containerized customers obtain service from firms domiciled in other regions if they so desired?
27. In order to investigate this question, two issues - one regulatory and the other economic - must be understood. First, all three geographic areas under investigation have By-Laws or operating rules which allow only solid waste from defined areas to be dumped in the local landfills. The District of Campbell River (By-Law 1261) allows only residents of the district, and surrounding Electoral Areas D, E, F and a defined portion of J to dispose of garbage at the sanitary landfill. The Nanaimo Regional District uses School District Boundaries. Residents of School District 69 are required to dump at the Qualicum landfill, and the residents of School District 68 must use the Cedar landfill. The southern boundary of School District 68 includes the northern portion of the Cowichan Valley Regional District. Finally, the Cowichan Valley Regional District requires that only solid waste from within the Regional District can be disposed of at one of the Regional District's disposal facilities.
28. The second issue of importance to the question of geographic market definition is an economic one. To serve customers in one area with equipment domiciled in another requires the trucks to make two "empty" trips each day. Thus, in comparison to a locally domiciled competitor, the "outside" firm will experience a lower number of revenue producing miles per shift. Whether or not this situation results in a significant competitive disadvantage for outside

firms depends on the distance which must be travelled, the size of the market areas to be served, i.e., the number of times each week that the truck (or trucks) must make the trip, and the number of customers in the local area who desire "on-call" service.

29. Based on the location decisions made by the solid waste collection and disposal firms in the central portion of Vancouver Island, it may be concluded that the industry is very localized in its market orientation. The smaller firms provide service to customers located in their immediate market area. Large, multi-jurisdictional firms like Laidlaw prefer to serve customers by establishing a series of local storage and parking areas for their trucks ("hubs"), and using the hub as a base to provide service on a regularly scheduled localized route network to customers located in the immediate area.

30. Thus, the Nanaimo location is a transportation hub from which Laidlaw is able to provide service north to customers in Parksville (35 km) and Qualicum (46 km) and south to the Ladysmith/Chemainus area (27 km). The Duncan yard is a second hub used to serve customers, the vast majority of whom are located 50 km or less from the city. On one day per week, Laidlaw moves a rear-loader with container lifting capacity from Duncan to Nanaimo (51 km). Finally, it would appear that the District of Campbell River, which is 153 km north of Nanaimo, is too far to be competitively served from Nanaimo. Laidlaw has established a third operational hub at Campbell River to serve customers within a 50 km radius of the District.

31. Given the configuration of population centres and dump sites on Central Vancouver Island, I estimate that Laidlaw perceives itself to be competitive with actual or potential rivals within a 50 km radius of each of their three operating hubs. For customers located more than 50 km away, Laidlaw would appear to be at a competitive disadvantage vis-a-vis locally domiciled service providers, and is likely to lose a significant proportion of the available commercial containerized customers to locally established firms.

32. Thus, for the purpose of further analysis, I have concluded that the relevant geographic market for the commercial containerized solid waste market on central Vancouver Island is 50 km or less from any of Laidlaw's three operational hubs. For purposes of identification, the three relevant market areas will be referenced as the District of Campbell River (Campbell River), the Nanaimo Regional District (Nanaimo) and the Cowichan Valley Regional District (Cowichan Valley).

## **II MARKET SHARE ANALYSIS**

33. In the Director's Notice of Application, it is alleged that Laidlaw's market share of the commercial containerized business in the three market areas is very high. The estimated market share of commercial containerized revenue captured by Laidlaw is 99% in the Cowichan Valley Regional District, 90% in the Nanaimo Regional District and 88% in the District of Campbell River.

34. The estimates were produced by the Director through information received from Laidlaw's competitors in the relevant markets.

35. In order to provide an independent check on the accuracy of the estimates, it is possible to measure Laidlaw's market share using a different estimating technique which is based on the physical volume of solid waste dumped at the various landfill sites.
36. In the Nanaimo Regional District, solid waste generated within the School District 69 boundaries of the Regional District is dumped at the Qualicum landfill site. Because there is no "tipping" fee at this dumpsite, no records are kept on either the volume of waste or company doing the dumping. However, at the Cedar landfill site, which receives waste from the School District 68 portion of the Regional District, there is a tipping fee and hence, records are kept to produce billing statements. The Regional District Engineer estimates that approximately 66% of the solid waste generated in the Regional District goes to the Cedar landfill site.
37. Because vehicle numbers are recorded in addition to the weight of solid waste being dumped, it is possible to generate monthly totals on the weight of waste dumped by the various types of solid waste trucks - front-load, rear-load, roll-off, etc. Also, since commercial containers are almost always serviced with front-load vehicles, it is possible to estimate the market share in the commercial containerized market by measuring the volume of waste dumped by the front-load vehicles owned by the various firms operating in the market.

**TABLE 1**  
**WEIGHT OF SOLID WASTE DUMPED AT THE CEDAR LANDFILL SITE BY**  
**FRONT-LOAD VEHICLES**

DATE	LAIDLAW (lbs)	BFI (lbs)	WESTCOAST (lbs)	TOTAL (lbs)	LAIDLAW'S MARKET SHARE
June, 1990	2,218,600	34,660	29,400	2,282,660	97.2%
September, 1990	1,862,040	75,980	0	1,938,020	96.1%
January, 1991	2,169,220	201,420	9,540	2,380,180	91.1%
March, 1991	1,803,500	258,760	49,860	2,112,120	85.4%
June, 1991	1,825,780	365,260	60,840	2,251,880	81.1%

*Source: Produced from the Regional District of Nanaimo List of Weighbills.*

38. Data obtained from the Nanaimo Regional District on tipping volumes at the Cedar dump during the months of June and September, 1990, and January, March and June, 1991, have been used to produce Table 1.

39. Thus, in June, 1990, Laidlaw accounted for 97.2% of the solid waste dumped by front-load vehicles at the Cedar landfill site. In June, 1991, after both Browning Ferris Inc. (BFI) and WestCoast Waste had more time to establish themselves in the market, Laidlaw's share had fallen to 81.1%.

40. There is no reason to expect that totals from the Qualicum dump - if they were available - would change these proportions significantly.

41. Thus, it may be concluded that the Director's estimate that Laidlaw has a 90% market share in the commercial containerized market in the Nanaimo Regional District would appear to be a slight underestimate given that it was made for the period prior to January, 1991.
42. Because there are three different organizational structures in the Cowichan Valley Regional District for the collection and disposal of commercial containerized solid waste, it is necessary to divide the Regional District into sub-areas and summarize the organizational structure in each before discussing the issue of market share.
43. Both the City of Duncan and the Village of Lake Cowichan provide commercial containerized service as a local government activity, using local government employees and equipment, and financing the activity by means of specified taxes.
44. The Town of Ladysmith and Electoral Areas F and I in the Cowichan Lake area also collect specified taxes, but contract the service out to the commercial solid waste firm which wins a tender process. Currently, Laidlaw has contracts to supply both residential and commercialized service in both Ladysmith and Electoral Areas F and I.
45. In all other areas of the Regional District, i.e., the Municipality of North Cowichan, Electoral Areas A to E (Duncan south to the Malahat) and Electoral Areas G and H (West and North of Ladysmith), commercial containerized



service is provided on the basis of a "market" system, i.e. private individual contracts between those wishing the service and those willing to provide it.

46. The situation in the Cowichan Valley Regional District may be summarized in the following way. In three areas - the Municipality of North Cowichan, Electoral Areas A to E, and Electoral Areas G and H - establishments wishing to obtain commercial containerized collection and disposal service arrange for it on an individual basis by contracting with the firm of their choice. In two other areas - the Town of Ladysmith and Electoral Areas F and I - the service is a "quasi-government" function in that the local government collects taxes to finance the service, but contracts with a commercial haulage firm to actually provide the collection and disposal activity. Finally, in the two remaining portions of the Regional District, the service is a "purely governmental" one provided by local government employees and equipment, and financed via local government taxation.

47. Within the Regional District, solid waste is disposed of by means of incineration at one of three thermal reduction plants (TRPs) at Lake Cowichan (TRP #1), Duncan (TRP #2 at Koksilah Rd.) and Ladysmith (TRP #3 at Peerless Road). A small landfill site is located adjacent to TRP #2 to receive solid waste when the incinerator is shut down for repairs and maintenance, or its capacity has been temporarily exceeded.

48. Given the location of the thermal reduction plants, the "pure market" areas (the Municipality of North Cowichan, Electoral Areas A to E and

Electoral Areas G and H) are served by TRP #2 and TRP #3.<sup>1</sup> The "quasi-government" systems (the Town of Ladysmith and Electoral Areas F and I) are served by TRP #3 and #1 respectively. The "pure government" organizational structure (the City of Duncan and the Village of Lake Cowichan) use TRP #2 and TRP #1 respectively.

49. To produce unbiased estimates of Laidlaw's market share in the Cowichan Valley Regional District, it is desirable to exclude transactions which occur under non-market circumstances. Thus, the volume of commercial containerized solid waste collected under the pure government system should be excluded from any market share calculations because the customers served under this organizational structure are not realistically available to Laidlaw or any other private market provider. Similarly, areas which use the local government as a tendering agent should also be excluded due to the binary nature of the outcome, i.e. market share will be 100% if the subject firm wins the contract and 0% if it loses it.

50. The three areas of the Regional District which operate under a market-based organizational structure use TRP #2 and TRP #3. The City of Duncan also dumps its commercial containerized solid waste at TRP #2, but it is possible to exclude the volumes dumped by the City from the total. The Town of Ladysmith, which contracts with Laidlaw to provide commercial containerized service to approximately 100 accounts in the township, uses TRP #3. Thus market share information obtained from this plant will have a small

---

<sup>1</sup>Actually, some parts of Electoral Areas G and H dump in the Cedar landfill site of the Nanaimo Regional District due to the closer proximity of that facility.

upwards bias due to the fact that Laidlaw has 100% of the tax-paying customers in the Town of Ladysmith by virtue of their contract. However, this slight upwards bias will be partially offset by a downwards bias due to the fact that commercial containerized solid waste collected by Laidlaw in some parts of Electoral Areas G and H is dumped at the Cedar landfill site in the Nanaimo Regional District.

51. After netting out most of the transactions which occur under non-market circumstances, it is possible to produce Table 2 showing that Laidlaw captures just under 90% of the privately contracted commercial containerized solid waste generated in the Regional District.

52. This table has been constructed using the same methodology as used in Table 1 with one exception. Pan Disposal uses a rear-loader with container-lifting capacity to service its commercial containerized customers. However, Pan's rear-loader is simultaneously used to produce low volume, hand bag/trash can service to residential customers, and thus the reported volumes tend to overestimate the importance of Pan as a competitor in the market for commercial containerized service.<sup>2</sup>

53. From this market share analysis, I conclude that the Director's estimate of a 99% market share for Laidlaw in the Cowichan Valley market is slightly high, but extremely close to the mark.

---

<sup>2</sup>The Principal of Pan Disposal estimates that he carries approximately 16,000 lbs per week of commercial containerized waste. Thus, approximately one-half of the reported monthly total for Pan in Table 2 is actually commercial containerized waste.

**TABLE 2**  
**WEIGHT OF SOLID WASTE TRANSPORTED TO TRP #2 AND TRP #3 BY**  
**FRONT-LOAD\* VEHICLES**

DATE	LIDLAW (lbs)	PAN (lbs)	BFI (lbs)	TOTAL (lbs)	LIDLAW'S MARKET SHARE
January, 1991					
TRP #2	999,295	125,495	0	1,124,790	88.8%
TRP #3	188,775	0	0	188,775	100 %
Total	1,188,070	125,495	0	1,313,565	90.5%
June, 1991					
TRP #2	918,010	127,295	0	1,045,305	87.8%
TRP #3	130,560	0	17,500	148,060	88.2%
Total	1,048,570	127,295	17,500	1,193,365	87.9%

\* Pan Disposal services its commercial containerized customers using an automated rear-loader with container-lifting ability. Since this vehicle also services non-containerized (residential) customers, Pan's reported volumes will be inflated in this table.

*Source: Produced from waybill information from the Cowichan Valley Regional District.*

54. The relevant dumpsite used by the District of Campbell River does not keep records on the volume of solid waste dumped, hence it is not possible to generate an independent check on the accuracy of the Director's estimate that Laidlaw has an 88% market share.

55. In summary, one of the two indicia of market power - a high market share in an appropriately defined market - is present in all three market areas. I now turn my attention to the other indicator of market power, the ease of entry in the marketplace.

### **III EASE OF ENTRY**

56. Entry into the commercial containerized market, i.e., the creation of new production capacity, cannot be relied upon to discipline Laidlaw's economic conduct or performance. This observation follows from three features of the commercial containerized market.

57. First, the minimum efficient scale of operations for full equipment utilization is large relative to the size of the market in all three geographic areas.

58. Second, normal market growth is not sufficient in magnitude to provide enough additional customers to allow a new firm to enter the market.

59. Third, access to customers by new firms, or existing firms wishing to expand the scale of their operations, is limited due to various anti-competitive features in Laidlaw's container service agreements.

60. Based on the same dumpsite waybill information used to produce Table 1, I have calculated that full utilization of one front-load vehicle requires (on average) access to 260 three-cubic yard containers (or 200 four-cubic yard containers) per week.

61. Entry at this minimum efficient scale represents a significant proportion of the total number of containers in each of the geographic markets, i.e. approximately 40% of the commercial containers in Campbell River; 23% in

Nanaimo and 50% in the Cowichan Valley. Entry on this scale relative to the size of the market is difficult.

62. All three market areas have shown positive population growth averaging 3% over the period of 1986 to 1990. A larger population creates additional local commercial opportunities and hence, an expanding market for commercial solid waste collection and disposal. However, the magnitude of the market growth is not sufficient to provide enough additional customers to allow a new entrant to reach minimum efficient scale in any realistic time frame.
63. Two features contained in Laidlaw's container service agreements combine to give a good deal of long-term stability to their customer portfolio, and hence, serve as a barrier to entry for new firms. The automatic renewal ("evergreen") clause combined with the onerous conditions required for termination tend to bind customers to Laidlaw for long periods of time.
64. An empirical measure of the height of the various barriers to entry facing competitors is the length of time it takes new market entrants to establish a market share sufficiently large enough to provide full equipment utilization of a single front-load vehicle. Table 1 provides the required information for entry by BFI and WestCoast Waste in the Nanaimo market.
65. In the one-year period since June 1990 when BFI entered the commercial containerized market in the Nanaimo Regional District, the firm has been able to increase its market share from zero to 16%.

66. While this might seem a significant accomplishment, I conclude that it has been achieved by BFI's willingness to absorb considerably higher operating costs due to the low level of equipment utilization in comparison to that achieved by Laidlaw in the same market area. During the period June 1990 to June 1991, BFI's average level of equipment utilization was less than one-third of Laidlaw's.

67. Based on the rate of market penetration achieved by BFI in the period June 1990 to June 1991, it may be estimated that it will take a large firm able to absorb higher operating costs ("deep pockets") a total of two years to achieve a market share large enough to support one front-load vehicle at Laidlaw's average level of equipment utilization.

68. The equivalent information on market entry for the much smaller WestCoast Waste can be used to estimate that it will take the firm five to seven years to achieve a market share large enough to support one front-load vehicle at full capacity utilization. It is not realistic to expect that a small firm can absorb higher operating costs for this length of time. Hence, entry by smaller firms is not "sustainable".

#### **IV MARKET DOMINANCE**

69. Market control by a dominant firm can be inferred by the joint presence of a large market share and blockaded conditions of entry.

70. Since Laidlaw's market share is substantial in all three geographic markets, and entry is difficult for the reasons discussed in Section III, I conclude that Laidlaw is - in the language of section 79 of the Competition Act - in a position to "...substantially or completely control..." the market for commercial containerized solid waste collection and disposal in the three market areas.

## **V ADDITIONAL ANTI-COMPETITIVE ACTS**

71. By its aggressive acquisition of smaller commercial containerized solid waste firms previously operating on central Vancouver Island, and the acquisition of smaller firms attempting to enter one of the three market areas, Laidlaw has created and protected its dominant position.

72. Six of the nine previously existing commercial containerized firms in the three market areas were purchased during Laidlaw's entry phase from March to August, 1986. The total purchase price amounted to \$2.7 million.

73. These initial acquisitions consolidated nearly all of the commercial containerized assets under Laidlaw's control as two of the three firms not initially purchased were extremely small.

74. Since August 1986, three of five smaller firms, i.e. excluding BFI, which attempted to enter one of the market areas have been purchased by Laidlaw. The total purchase price of these additional acquisitions amounted to \$668,000.



75. Also, Laidlaw has obtained an additional degree of "post acquisition" protection through the use of non competition agreements. Principals of the acquired firms with the necessary skills, expertise and local market knowledge to start-up new firms after selling out to Laidlaw have been blocked from subsequent participation in the industry for a period of five years.

76. Laidlaw's use and threatened use of litigation to enforce the terms of its container service agreements may in this case be regarded as an anti-competitive act due to the unequal size of Laidlaw in comparison to individual customers. The threat of litigation by Laidlaw is a "credible threat" that can bind customers to the letter of the container service agreements because the legal cost of "escaping" would greatly exceed the anticipated individual benefits. Given Laidlaw's large size, and in-house legal department, customers presume that the effective legal costs to Laidlaw are much lower.

## **VI LAIDLAW'S CORPORATE STRATEGY**

77. Laidlaw's economic conduct of aggressive acquisition and attempted market dominance in the commercial containerized solid waste market on central Vancouver Island is consistent with its declared corporate strategy.

78. Their 1989 Annual Report, in discussing the corporation's major investment in another (unrelated) industry, provides a window on their overall corporate strategy which is also applicable to their solid waste operations.

"This major investment by your Company in these rapidly growing non-cyclical fragmented service businesses is consistent with our objectives of expanding in high growth high operating margin service businesses which have a high barrier to entry."

79. I conclude that Laidlaw has achieved substantial or complete control of the commercial containerized solid waste market in the specified regional markets of central Vancouver Island, and has used a series of anti-competitive acts for the purpose of creating and protecting its dominant position in these markets.

**APPENDIX A TO EXHIBIT "A"**

**TABLE A.1**

**Open Contracts - Number of Customers by Container Size**

	1x2	1x3	1x4	1x6	2x3	2x4	2x6	3x3	HB	*	Other	Total
Campbell River	3	411	106	14	15	10	3	4	37	20	13	636
Nanaimo	86	706	204	126	24	10	11	7	76	7	20	1277
Cowichan	15	317	78	58	13	6	2	4	60	5	15	573
<b>TOTAL</b>	<b>104</b>	<b>1434</b>	<b>388</b>	<b>6</b>	<b>52</b>	<b>26</b>	<b>16</b>	<b>15</b>	<b>173</b>	<b>32</b>	<b>48</b>	<b>2486</b>

Note: \* - Container of unknown size  
 Other - Combination of containers other than above  
 HB - non-containerized hand bomb service

**TABLE A.2**

**Open Contracts - Number of Customers by Type of Contract**

Type of Contract	1	2	3	5	In	N.S.	*	#	%NS	Total
Campbell River	32	20	380	9	0	182	5	8	29%	636
Nanaimo	108	27	719	23	30	348	11	11	27%	1277
Cowichan	36	19	289	7	9	203	3	7	35%	573
<b>TOTAL</b>	<b>176</b>	<b>66</b>	<b>1388</b>	<b>39</b>	<b>39</b>	<b>733</b>	<b>19</b>	<b>26</b>		<b>2486</b>

Note: NS - Contract not signed  
 \* - Unknown contract type  
 # - Second container under same contract

**TABLE A.3**

**Open Contracts -Number of Customers with changes to Length or Notice**

	Total	Change	% Change										
Campbell River	636	37	5.8%										
Nanaimo	1277	91	7.1%										
Cowichan	573	31	5.4%										
<b>TOTAL</b>	<b>2486</b>	<b>159</b>	<b>6.4%</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

EXHIBIT "B"

JAMES J. MCRAE  
PROFESSOR  
SCHOOL OF PUBLIC ADMINISTRATION  
UNIVERSITY OF VICTORIA  
VICTORIA, B.C. V8W 2Y2

This is Exhibit *b* referred to in the  
affidavit of JAMES J. MCRAE  
Sworn before me at Victoria  
in the Province of British Columbia, this  
12<sup>th</sup> day of September 1991  
A Notary Public in and for the Province  
of British Columbia

1. **BIOGRAPHICAL INFORMATION**

- Born December 16, 1945, Vancouver, B.C.
- Canadian Citizenship
- Married with two teenage children
- Excellent health

MADELEINE BARRIE  
NOTARY PUBLIC  
817A FORT STREET  
VICTORIA, B.C. V8W 1H6  
382-5331

*Education and Professional Designations*

- BA (Honours Economics) University of Victoria, 1968
- MA (Economics) University of Western Ontario, 1969
- Ph.D. (Economics) University of Western Ontario, 1974

2. **ACADEMIC AND RESEARCH POSITIONS HELD**

- 1971-72 Lecturer, Huron College (Affiliated with the University of Western Ontario).
- 1972-77 Assistant Professor of Economics, University of Guelph. (Tenure granted 1976).
- 1975 Visiting Scholar, International Monetary Research Program, London School of Economics, London, England.
- 1977 Promoted to Associate Professor of Economics, University of Guelph.
- 1979 Visiting Scholar, Department of Economics, Stanford University, California.
- 1980-81 Visiting Associate Professor, School of Public Administration, University of Victoria.
- 1982-83 Associate Professor, School of Public Administration, University of Victoria.
- 1984 Associate Professor with Tenure, School of Public Administration, University of Victoria.
- 1986-present Promoted to Professor, School of Public Administration, University of Victoria.

### 3. PUBLICATIONS

#### *Books*

- McRae, James J., and David Prescott, *Regulation and Performance in the Canadian Trucking Industry*, Economic Council of Canada, Ottawa, 1982.
- McRae, James J., and Martine M. Desbois (eds.), *Traded and Non-Traded Services: Problems of Theory, Measurement and Policy*, Institute for Research on Public Policy, Halifax, 1988.
- McRae, James J. and William Coffey, *Service Industries in Regional Economic Development*, Institute for Research of Public Policy, Halifax, 1990.

#### *Refereed Journal Articles*

- McRae, James J., "Economic Theory and Non-Replenishable Resource Prices", *Canadian Public Policy - Analyse de Politiques*, Winter 1975.
- McRae, James J., "La Stabilité des Prix des Ressources Non Renouvelables", *L'Actualité Economique*, October - November 1977.
- McRae, James J., "Optimal and Competitive Use of Replenishable Natural Resources by Open Economies", *Journal of International Economics*, February 1978.
- McRae, James J., "On the Stability of Non-Replenishable Resource Prices", *Canadian Journal of Economics*, May 1978.
- McRae, James J. and F. Tapon, "A New Test of the Administered Pricing Hypothesis with Canada Data", *Journal of Business of the University of Chicago*, July 1979.
- McRae, James, "An Empirical Measure of the Influence of Transportation Costs on Regional Income", *Canadian Journal of Economics*, February 1981.
- McRae, James J., David M. Prescott and A. Manoucherhri, "Ontario Highway Transport Board Decision Making: A Logit Analysis", *The Logistics and Transportation Review*, December 1981.
- McRae, James J. and David M. Prescott, "Second Thoughts on Tariff Bureaus", *Canadian Public Policy - Analyse de Politiques*, June 1983.
- McRae, James J., and Francis Tapon, "Compulsory Licensing as a Policy Instrument", *Canadian Public Policy - Analyse de Politiques*, March 1984.
- McRae, James J. and Francis Tapon, "Some Empirical Evidence on Post Patent Barriers to Entry in the Canadian Pharmaceutical Industry", *Journal of Health Economics*, March 1985.
- McRae, James J., "A Dubious Rescue", *Policy Options*, June 1985.
- McRae, James J., "Can Growth in the Service Sector Rescue Western Canada?", *Canadian Public Policy - Analyse de Politiques*, Supplement, July 1985.

- McRae, James J., and James C. McDavid, "Computer Based Technology in Police Work: A Benefit-Cost Analysis of a Digital Communications System", *Journal of Criminal Justice*, February 1988.
- McRae, James J. and G. Chow, "Non-Tariff Barriers and the Structure of the U.S.-Canadian Transborder Trucking Industry", *Transportation Journal*, Winter 1990.

#### ***Published Research Monographs***

- McRae, James J. and David M. Prescott, *Definitions and Characteristics of the Trucking Market: A Statistical Analysis*, 1980, Research Report TP 2907 (Ottawa: Transport Canada).
- McRae, James J. and D. Prescott, *An Analysis of the Role of Freight Tariff Bureau Members in Less-than-Truckload Markets*, 1981, Research Report TP 335 (Ottawa: Transport Canada).
- McRae, James J., *Competition and Regulation in Inter-City Trucking in Canada*, 1982, Research Report TP 3337 (Ottawa: Transport Canada).
- McRae, James, J., *Canada/United States Trade in Transportation Services*, Technical Report of the Traded Service Sector Series, Institute for Research on Public Policy, Halifax, 1989.

#### **4. RECENT CONSULTING EXPERIENCE**

- Consultant to the Economic Council of Canada on regulatory reform of the transportation industry.
- Consultant to Transport Canada on the anti combines implications of collective rate making in the motor carrier industry.
- Consultant to Stevenson Kellogg Ernst and Whinney evaluating the Canada-British Columbia Industrial Development Subsidiary Agreement.
- Consultant to Stevenson Kellogg Ernst and Whinney on regional development strategies for Surrey, Revelstoke, Colwood and Fort St. John.
- Consultant to a large Vancouver based property development firm on the location of a major cross border truck stop in the Lower Mainland area.
- Consultant to Stevenson Kellogg Ernst and Whinney evaluating the Co-operative Overseas Market Development Program (COMDP) to promote exports of B.C. softwood lumber and plywood.
- Consultant to B.C.'s Ministry of Forests on revising the cost estimation formula in stumpage calculations.
- Research Director for the Institute for Research on Public Policy for a two year study of policy issues relevant to Canadian trade in service commodities. This research was funded by a grant from Industry Science and Technology Canada.

- Consultant to Stevenson Kellogg Ernst and Whinney on an economic development strategy for the Greater Vancouver Regional District (GVRD).
- Consultant to Transport Canada on non tariff barriers facing Canadian carriers in the Canada-U.S. cross border transportation market.
- Senior researcher to British Columbia's Royal Commission on Education (Sullivan Commission) on taxation and expenditure issues.
- Economic Advisor to the British Columbia Task Force on Small Business Programs and Services.
- Research consultant to the Economic Council of Canada on the employment opportunities dependent on traded service outputs.

**Contract forms TOC #1 to TOC #5  
contains confidential information**