

INDUSTRIAL DEVELOPMENT

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WESTERN CANADA

OPPORTUNITY SERIES

PLASTIC
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DEPARTMENT OF REGIONAL
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WESTERN REGION HEADQUARTERS
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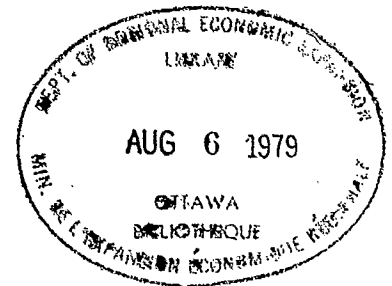
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INDUSTRIAL DEVELOPMENT STUDIES

THE DEPARTMENT OF REGIONAL ECONOMIC EXPANSION IN WESTERN CANADA IS COMMITTED TO THE ECONOMIC AND INDUSTRIAL DIVERSIFICATION OF THE REGIONAL ECONOMY. THIS STUDY REPRESENTS ONE IN A SERIES OF DIRECT INITIATIVES TAKEN BY THE DEPARTMENT TO REALIZE WESTERN CANADA'S DEVELOPMENT POTENTIAL.

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INTRODUCTORY SYNTHESIS

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INTRODUCTORY SYNTHESIS

OPPORTUNITY TO MANUFACTURE PLASTIC WINDOW FRAMES IN WESTERN CANADA

I. INTRODUCTION

The primary objectives of the plastic window frames opportunity study were to: identify the current Western Canadian window market; forecast its growth; determine the potential market share for plastic window profiles; and, compare the production and distribution costs associated with several western locations. The latter objective assessed the investment's attractiveness both with and without DREE financial assistance in the eligible locations.

The study presents Western Canada's opportunity and potential for plastic windows and the manufacture of the required profiles. The analysis is based on both available data and the results of interviews conducted with a majority of western window installers and wholesalers. In addition, other Canadian and U.S. suppliers, manufacturers, distributors and installers were also contacted.

This summary represents a synthesis of the study's principal findings and conclusions. Market scenarios were developed, however, by DREE Western Region, Industrial Analysis and Strategic Planning Branch and thus are not sourced in the main report.

II. SUMMARY

Western Canada's vinyl window market in 1979 is estimated to total from 59 200 units to 65 500 units representing 3.5 percent of the region's total window market. Projections to 1983 place the vinyl window market at 133 100 to 147 400 units for an approximate 6 percent share of the total regional window market.

The market penetration for a regional two line extrusion facility with production commencing in 1979 and reaching full capacity by 1981 is projected to reach 3.6 percent of the total western window market, representing 76 percent of the forecast vinyl window market. Following this point, the facility's market share will decline as the total market continues to expand and new companies enter the market.

Based on the plant size, cost parameters, and market growth and penetration projections identified in the study, a financially attractive opportunity exists to manufacture plastic window profiles in Winnipeg, Brandon or Saskatoon. This is dependent, however, on the facility receiving financial assistance from DREE. In the absence of DREE assistance, cost parameters and plant size would have to be reexamined in an effort to improve the facility's expected financial performance.

III. POTENTIAL WESTERN VINYL WINDOW DEMAND AND EXTRUDER'S MARKET SHARE

The potential 1983 market for vinyl windows in Western Canada will amount to about 6% of the region's total window requirement. This forecast is based on the assumption that the product's current level of penetration is in the order of 3 to 4% of total window demand and that an effective promotional campaign is undertaken. Further, conservative estimates of the product's growth prospects based on extensive interviews indicate that an annual growth rate of 25% to 1981, followed by 20% annual growth to 1983, will be realized. Thus, as shown in Table 1, the 1983 vinyl window market is forecast to expand to between 133,100 and 147,400 units.

Table 1 WESTERN CANADIAN VINYL WINDOW MARKET POTENTIAL
FORECAST THROUGH 1983

	Y E A R				
	1979	1980	1981	1982	1983
NUMBER OF WINDOW UNITS (000,S)	59.2-65.5	74.0-81.9	92.5-102.3	111.0-122.8	133.1-147.4
PERCENT-AGE OF TOTAL WINDOW MARKET	3.5%	4.0%	4.7%	5.3%	~ 6%

The extrusion facility considered in this analysis uses two extrusion lines. Due to start-up difficulties and the running in of new dies and designs, first and second year production levels are expected to amount to only 55% and 77% respectively of the plant's capacity. However, by the third year of production, full capacity should be achieved supplying 76% of the western vinyl window demand or 3.6% of the total western window market. From the fourth year on, market shares are expected to decline as the total market continues to expand and new companies enter the market (see Table 2). The relationship between the projected regional vinyl window market and the new extruder's sales forecast is shown in Figure 1.

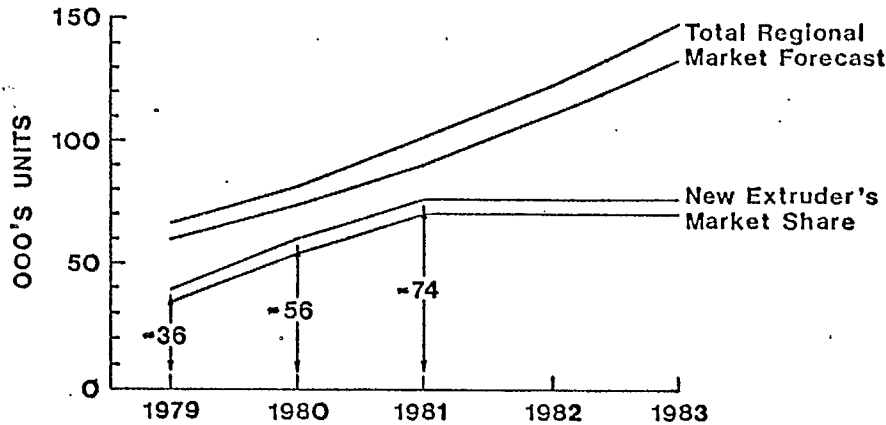
Table 2

WESTERN WINDOW PROFILE SALES FORECAST

YEAR	1	2	3	4	5
\$ VALUE	\$856,520.	\$1,284,780.	\$1,713,040.	\$1,713,040.	\$1,713,040.
% SALES OF OPTIMUM	50%	75%	100%	100%	100%
% PRODUCTION OF OPTIMUM	55%	77%	100%	100%	100%
% OF WESTERN VINYL WINDOW MARKET	59%	72%	76%	64%	53%
% OF TOTAL WESTERN WINDOW MARKET	2.1%	2.9%	3.6%	3.4%	3.2%

The detailed financial analysis prepared for the eight western locations considers the prospects for a new two line extruder based on the above sales forecast. However, the conservative market growth depicted in Figure 1 suggests that within the next 3 to 5 years sufficient regional demand should exist to warrant consideration of an expansion in regional capacity.

Figure 1 FORECAST WESTERN VINYL WINDOW MARKET
AND NEW REGIONAL EXTRUDER'S SALES FORECAST



Two scenarios have been developed to examine the market's potential to support additional regional production. Both share the following features: a second regional extruder is established with start up and capacity characteristics identical to the first; and, a small share of one extruder's production is marketed outside Western Canada. (For presentation purposes, the first regional extruder is shown as marketing ex-region, although this could apply to either, with the net market impact being unaffected.) The difference between the two scenarios is that the first relies on the conservative market projection while the second scenario is based on the more expansive growth in demand as perceived by the industry.

The first scenario as shown in Figure 2 indicates that even before 1981, regional demand in the order of 36,000 units should be available for establishment of a second extrusion facility. While this requirement falls within the upper and lower bounds of the market forecast, it is evident that delaying the production commencement date by less than half a year would bring the facility's first and second year production levels within the market forecast.

Scenario two assesses the market potential on the basis of the 40% growth forecast as suggested by industry representatives. Figure 3 reveals the minimum 36,000 unit demand being available nearly a year earlier. While this and the first scenario present the earliest point at which sufficient regional demand could be available to justify additional production, final investment decisions would likely prefer a larger margin between production and expected demand.

Figure 2

CONSERVATIVE REGIONAL MARKET FORECAST EX-REGION DISTRIBUTION

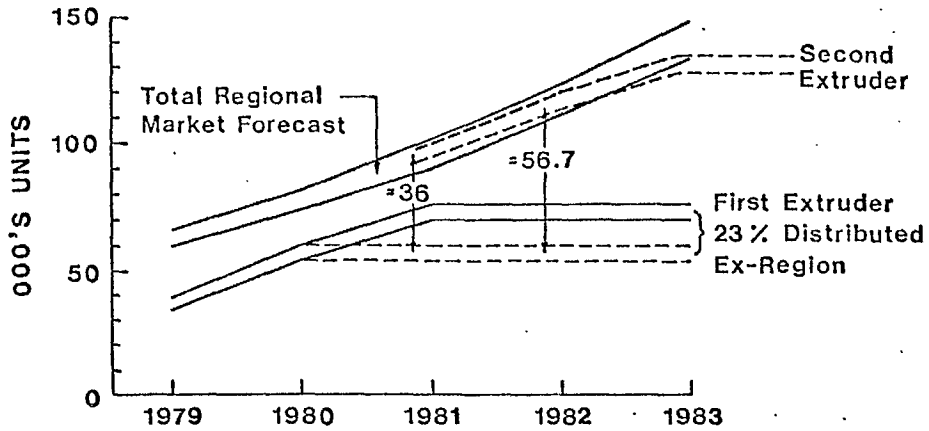
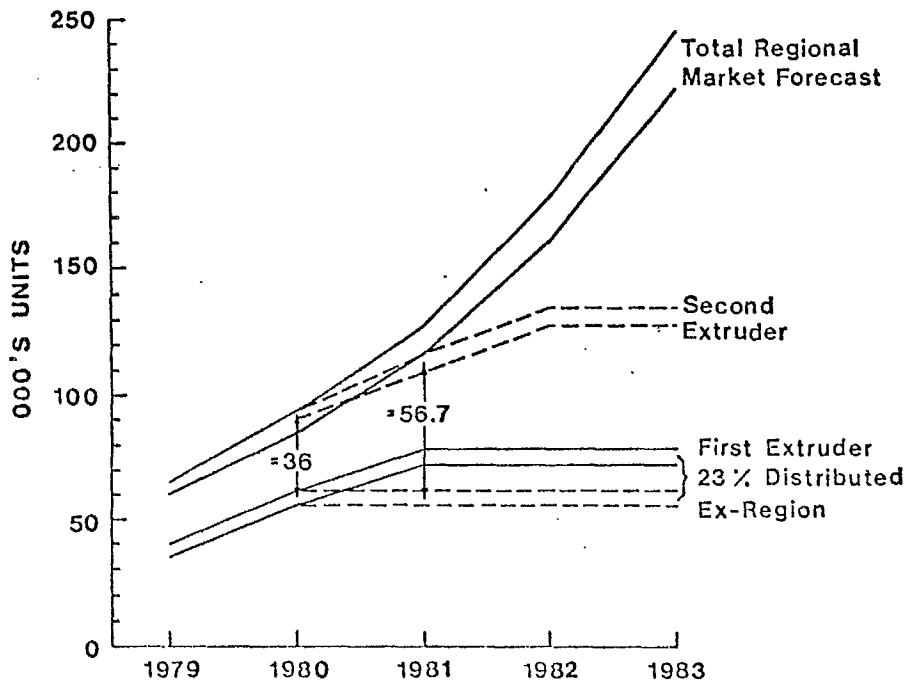


Figure 3

RAPID GROWTH MARKET FORECAST EX-REGION DISTRIBUTION



An important element in both of these scenarios is production distribution outside Western Canada. Interviews conducted in the United States suggest that the vinyl window's market share will increase to a minimum of 10% to 20% over the next five years. While aluminum windows currently dominate the U.S. market, recent and expected aluminum price increases (a combination of both U.S. domestic demand exceeding domestic primary capacity and aluminum's energy-intensive production requirement) will contribute to a shift in consumer preference. In addition, vinyl windows offer considerably better thermal insulation properties and they are lighter and therefore less expensive to transport. Current western U.S. vinyl window distributors are supplied from eastern sources.

IV. LOCATIONAL COST COMPARISON

Cost data collected for the locational analysis provides a current regional cross-section of basic operating costs, covering wages and salaries, utilities, transportation, insurance and municipal taxes, and selected capital investments including building and industrial land prices. Presented graphically in Figure 4, each of these locational specific costs and capital investments are briefly discussed below.

Labour

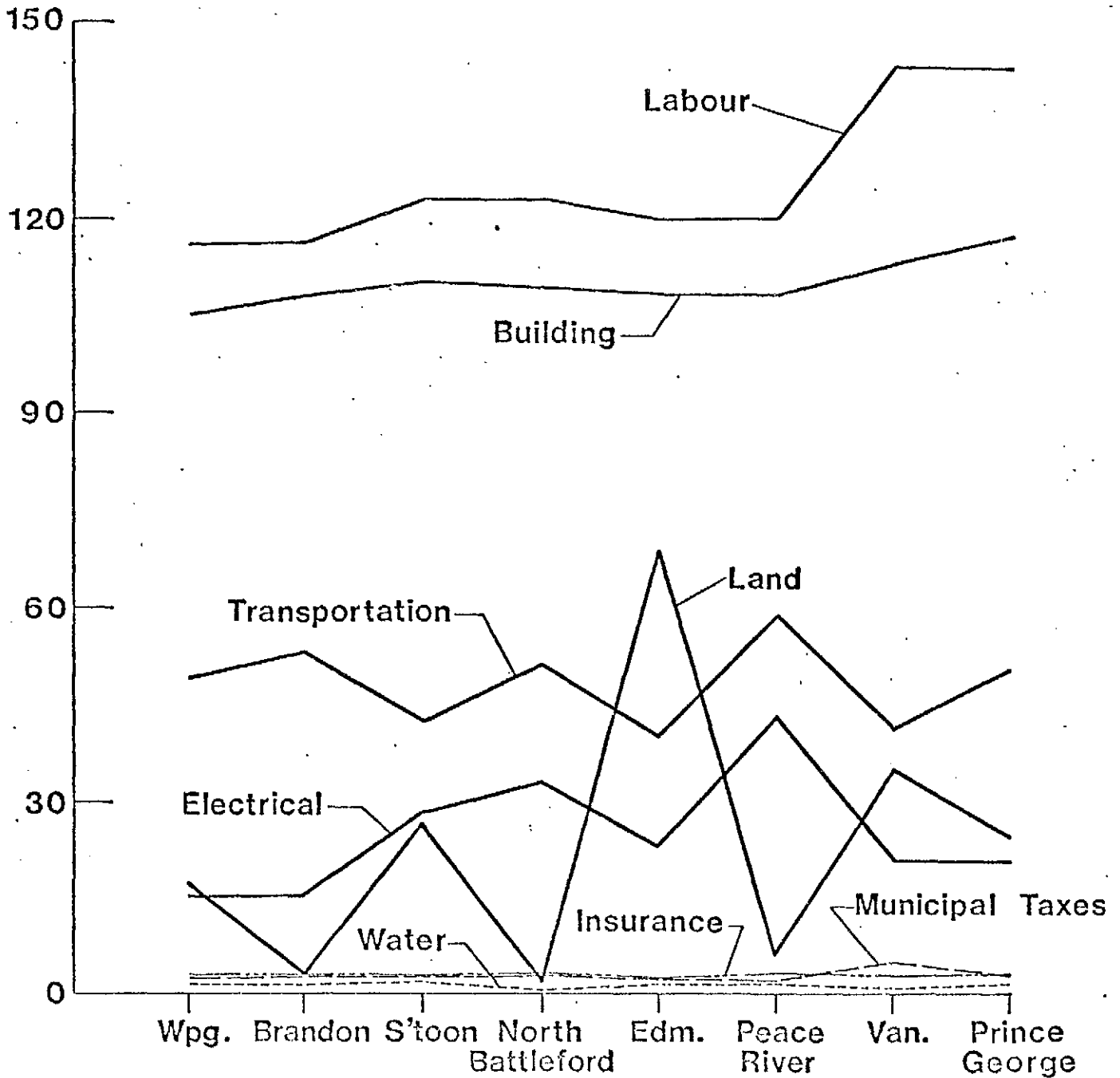
The employment skills currently found in the smaller centres are limited, thus the wages and salaries for the occupational skills required for this facility would have to approximate those being paid in the nearest large centre. Although unions have an obvious and considerable influence, attracting the necessary skills will require that pay rates comparable to those found in the large centres be offered.

Building Cost

The building cost for the required facility is typical of the requirements for light manufacturers. The enclosed floor area is 5,200 sq. ft. with an additional 2,000 sq. ft. of covered end product storage area. Although building costs range from \$105,000 in Winnipeg to \$113,000 in Prince George, this is a relatively narrow capital investment price spread. Assuming the respective provincial labour costs parallel wages in the construction sector, the construction labour input is clearly reflected in the total building cost.

Figure 4

WESTERN VINYL WINDOW PROFILE EXTRUDER LOCATIONAL COST COMPARISON



Transportation

The lowest outgoing transportation cost is found in Edmonton, located in the middle of the expected market. Based on population, interviews and construction activity projections, an estimated 36% of the sales will be in Vancouver, 35% in Alberta (split 50/50 between Edmonton and Calgary), 12% in Saskatchewan (shared by Regina and Saskatoon) and 17% in Manitoba, principally Winnipeg. Vancouver records the second lowest transportation cost since the largest share of total sales are expected for that centre.

Land

The principal element in favour of the smaller centres, in both this study and as a general rule, is the considerably lower land price. The land prices are for $\frac{1}{2}$ acre of serviced light industrial land. Although Prince George's land price of \$25,000 exceeds Winnipeg's at \$17,000, the average price in the four smaller centres is only \$9,000 compared to nearly \$40,000 in the larger centres. However, in the capital intensive project being considered, the land price proportion of the total capital investment ranges from a low of less than 1% to only 7%. Vancouver's land price relates to Langley, since prices for Vancouver proper would have been in excess of \$200,000.

Electrical

The electrical utility costs taken from 1978 power schedules vary considerably from one province to the next. Although the power schedules for the small and large centres are identical in both Manitoba and British Columbia, the smaller centre costs in Saskatchewan and Alberta are considerably higher.

Water, Insurance and Municipal Taxes

These combined operating costs represent a very small proportion of the total, and aside from Vancouver's \$4,900 municipal tax cost, nearly double the average in the seven other centres, there is little variation in costs by centre. The cost of insurance is, however, higher in the smaller centres, primarily due to their fire protection rating.

V. FINANCIAL ANALYSIS

Six of the eight western locations selected for the locational and financial analysis are eligible for DREE assistance. For comparison purposes, therefore, analysis has been prepared both with and without the Department's financial support.

The first case considers the investment's attractiveness with DREE assistance where applicable. As supported by Table 3, Winnipeg, Brandon and Saskatoon are found to offer financially attractive locations for the facility. These centres yield the highest internal rates of return with the principal factors being slightly lower general costs. Although Edmonton's general costs are only marginally higher, the absence of DREE assistance requires a larger equity investment with the higher interest charges reducing its overall rate of return.

Table 3

WESTERN PLASTIC WINDOW PROFILE MANUFACTURER
 LOCATIONAL FEASIBILITY ANALYSIS
 CASE 1: WITH DREE ASSISTANCE⁽¹⁾

	Total Capital Investment (\$'000)	Gross Margin Fifth Year %	Net Profit Fifth Year %	Cumulative Cash Flow Fifth Year (\$'000)	Internal Rates of Return %
Winnipeg	895	19.7	3.7	273	14.42
Brandon	884	19.4	3.5	263	13.98
Saskatoon	910	19.2	3.4	254	13.22
N. Battleford	884	18.4	3.0	224	11.72
Edmonton ⁽²⁾	995	20.1	4.9	271	7.36
Peace River	887	17.8	2.7	196	10.15
Vancouver ⁽²⁾	966	18.3	5.1	170	2.3
Prince George	940	17.7	2.9	178	7.94

(1) Locations excluding Edmonton & Vancouver receive DREE assistance. Owner's equity @33.3% of total capital investment.

(2) No financial support from DREE. Owner's equity @40% of total capital investment. Working capital equivalent to \$220,000.

Case two considers the investment in the absence of DREE assistance, concluding that the undertaking would no longer represent a financially attractive opportunity. As shown in Table 4, the largest internal rate of return accrues to Edmonton, amounting to only 7.36%, followed by Winnipeg and Brandon at 6.85% and 6.25% respectively. Similarly, fifth year gross margins are highest in these three locations. In relative terms, therefore, these centres should offer the best, albeit unattractive, prospects for financial viability.

Financial performance of the operation in the absence of DREE assistance might be improved through changes in the final selling price or raw material purchase price, or the addition of a third extrusion line. Sensitivity analysis calculated for the Winnipeg location, although based on DREE assistance, etc., identified that a 2.2% increase in the lineal selling price, ultimately about \$0.50/window, increased that location's IRR from 14.42% to 19.54%. Alternatively, a half cent per pound decrease in the PVC compound purchase price, representing a discount of less than 1%, would increase Winnipeg's IRR to 15.88%. Cautioned that the final selling price is critical in market acceptance and penetration, minor variations in these revenue-related elements clearly have a significant bearing on the operation's financial performance.

While selected overhead costs would remain constant, the addition of a third extrusion line would likely require that some portion of the increased production be distributed outside the region at the commencement of operations, as opposed to being a future possibility. However, the precise impact on the facility's financial performance has not been assessed.

Table 4

WESTERN PLASTIC WINDOW PROFILE MANUFACTURER
 LOCATIONAL FEASIBILITY ANALYSIS (1)
 CASE 2: EXCLUDING DREE ASSISTANCE

	Total Capital Investment (\$'000)	Gross Margin Fifth Year	Net Profit Fifth Year	Cumulative Cash Flow Fifth Year (\$'000)	Internal Rates of Return %
Winnipeg	940	19.7%	4.9%	262	6.85
Brandon	929	19.4	5.1	253	6.25
Saskatoon	955	19.2	5.4	241	5.54
N. Battleford	929	18.4	5.4	201	3.56
Edmonton	995	20.1	4.9	271	7.36
Peace River	932	17.8	4.8	154	1.67
Vancouver	966	18.3	5.1	170	2.3
Prince George	960	17.7	3.7	122	(-)

(1) No financial support from DREE.
 Owner's equity @40% of total investment.
 Working capital equivalent to \$220,000.

VI. CONCLUSION

The market, locational and financial analysis undertaken for this report identifies a financially attractive investment opportunity for the manufacture of plastic window frame profiles in Western Canada. Winnipeg, Brandon or Saskatoon represent the most attractive locations.

This opportunity is presented as being conditional upon the receipt of financial assistance from DREE through the RDIA program. However, adjustments such as a reduction in the raw material purchase price or final selling price could conceivably alter this requirement in favour of other locations. In addition, the market scenarios demonstrate the potential for both additional capacity and possible distribution arrangements which could further enhance the investment's attractiveness.

The final investment decision clearly rests with the entrepreneur who chooses to investigate this opportunity further. Although every effort has been taken to ensure the accuracy of these results, confirmation for specific sites and distribution networks would be required. Thus, while distribution of this analysis represents a contribution to the identification and promotion of industrial development opportunities in Western Canada, DREE staff are prepared to assist potential investors who may wish to more fully examine this opportunity.

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OPPORTUNITY TO MANUFACTURE

PLASTIC WINDOW FRAMES

IN WESTERN CANADA /

Prepared for:

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Western Canada

January 1979

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ASSOCIATION
OF CONSULTING ENGINEERS
OF CANADA

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OPPORTUNITY TO MANUFACTURE

PLASTIC WINDOW FRAMES

IN WESTERN CANADA

1.0 EXECUTIVE SUMMARY

1.1 Objectives

To identify the market for plastic window profiles in Western Canada.

To determine optimum plant size and related materials, manpower, site and raw material requirements.

To prepare a comparison of production and distribution costs for the optimum plant in several locations.

To qualitatively evaluate any potential displacement effect upon traditional window manufacturers.

To assess the development characteristics experienced in applying plastic window profile technology in the United States.

1.2 Study Area

The study surveys the opportunities and potential for plastic window profiles throughout the Western Canadian provinces.

Associations, construction contractors, installers, wholesale and retail building supply dealers, equipment manufacturers, window manufacturers, resin suppliers and government sources were contacted during the survey.

Approximately 200 contacts were completed. A majority of the window installers and wholesalers in Western Canada were contacted.

1.3 Conclusions

The market for vinyl windows in Western Canada is projected to be 59 to 65 thousand windows in 1979 growing to 133 to 147 thousand in 1983.

These projections represent 3.5% of the entire Western Canadian window market in 1979, expanding to an approximate 6% penetration in 1983.

It is financially attractive to manufacture the plastic profiles in Winnipeg, Brandon and Saskatoon.

The aluminum window industry will lose portions of their market as a result of the vinyl window. The subsequent reduction of aluminum window fabrication jobs will be counteracted by the labour requirement for the manufacture of vinyl windows in Western Canada.

New technology has virtually eliminated previous problems associated with the cracking of vinyl under harsh climatic conditions.

1.4 Report Highlights

1.4.1 Market Analysis

1.4.1.1 The total 1978 Western Canadian market for all window types is 1.13 to 1.20 million units.

1.4.1.2 Approximately 37% (.42 million) of the total windows were used in the replacement market with an additional 63% (.71 million) installed in new construction.

1.4.1.3 The 1979 market for vinyl windows in Western Canada is estimated to be 59,200 to 65,500 windows

1.4.1.4 Annual growths in the vinyl window market are forecast to fall between 20% and 25%.

1.4.1.5 The market for vinyl windows in 1983 will be 133,200 to 147,400 windows.

1.4.1.6 It is estimated that in 1978 vinyl windows represented no more than 2 to 3% of the total Western market for windows of all types.

1.4.1.7 Winco is the only fabricator/supplier of plastic window frames in Western Canada. Imported profiles are currently being used.

1.4.2 Implementation analysis

1.4.2.1 A new Western vinyl profile extruder will capture approximately 2% of the total Western market for windows of all types in year one. By year three this market share should climb to about 4 percent, whereupon, full production capacity utilization is realized.

1.4.2.2 Sales revenue in year one would commence at \$856 thousand and increase to a maximum \$1.7 million in year three of operations.

1.4.2.3 The most efficient distribution system for Western Canada involves the establishment of one profile extrusion operation serving a number of regional custom window fabrication plants.

1.4.2.4 The internal rates of return for the various locations

are:	Winnipeg	14.42%	Edmonton	7.36%
	Brandon	13.98%	Peace River	10.15%
	Saskatoon	13.22%	Vancouver	2.30%
	N. Battleford	11.73%	Prince George	7.94%

Reasons for variations are discussed in section 9.0

1.4.3 Displacement Effect

1.4.3.1 Industry forecasts a total window market penetration of 10% to 20% by the vinyl window.

1.4.3.2 In Western Canada the aluminum window manufacturers will lose a portion of their market shares as a result of plastic windows.

1.4.3.3 The aluminum window may eventually become a non-competitive product due to escalating energy costs.

1.4.3.4 Job losses can be minimized or eliminated by a move by Western producers into vinyl.

1.4.4 Cold and Colour Technology

1.4.4.1 Colour is available on window profiles via a system called capstock coextrusion.

1.4.4.2 New technology, process control and product design have virtually eliminated cold weather problems previously associated with vinyl windows.

2.0 INTRODUCTION

Plastic window profile technology has been developed in Europe and is now being adopted in North America. At the present time, window frames constructed completely of plastic account for a major share of the residential replacement market in Europe, and the market is reportedly still expanding at 10 to 15 percent annually. Polyvinyl chloride is the main material used, however, there is some use of polyurethane and glass-reinforced polyester.

The change from aluminum to plastic in North America is just beginning now that the plastic frames are more competitive with aluminum.

PVC windows offer a number of benefits that will influence the penetration of the North American window market;

- a) superior thermal characteristics providing insulation and preventing interior condensation, as compared to aluminum,
- b) low maintenance requirements,
- c) resistance to rotting and corrosion,
- d) light weight,
- e) ability to be formed into many shapes.

Other factors that will contribute to the greater use of plastics in window frames are:

- a) increasing consumer acceptance of plastics in

construction because of pipe, siding, wall and roofing plastics,

- b) sharply rising costs of wood and aluminum in contrast to a much slower rise in PVC costs.

There are currently no manufacturers of plastic window profiles in Canada. There are only a few assembly operations in Ontario and Manitoba fabricating plastic windows.

Canadian use of vinyl is primarily in coating either aluminum or wood windows.

3.0 THE PRODUCT

3.1 Definition

This study focuses on the opportunity in Western Canada for the plastic window frame. The window frame is assembled from a number of extruded plastic profiles. Polyvinyl chloride is the main material used, however, there is some use of polyurethane and glass-reinforced polyester.

The ultimate from a plastics standpoint is what is referred to as the all-vinyl unit. Hardware and glazing are the only non-vinyl parts.

Depending on the window size and design metal inserts may be used as a structural support within the plastic frame.

For the purposes of this study the plastic window is deemed to represent the above mentioned vinyl frame, sash and related profiles with or without structural support. This is the area of new window technology in Canada.

There are other uses of plastics in windows that will be referred to during the course of the study. Weatherstrip has been one of the early uses of plastics, chiefly as spring-leaf and jamb-liners. A polyethylene extrusion with a flexible urethane foam is commonly used in windows to seal in the sides of the sash of the double hung window. Plastic grilles have typically been used to give a divided light appearance to windows. These uses could be classed as "component" applications for plastics in windows.

Recent design innovation has led to the introduction of the "thermally broken" aluminium unit. Basically this involves the use of plastic to separate the exterior window frame from the interior frame.

"Composite" applications use a wood, aluminium or steel frame with a thin covering of vinyl on the outside.

The use of "component", "thermal break" and "composite" plastics in windows is an established technology in Canada.

3.2 Product Range, Applications and Features

3.2.1 General

European plastic window technology is much further advanced and established relative to the North American industry.

European windows are of a heavy design and are typically of the "tilt and turn" type consisting of a large frame which holds a window sash that swings into the room. Profile thicknesses in Europe tend to be of thick wall construction in the magnitude of 0.130 inches.

North American plastic window manufacturers are designing windows primarily for the double hung, side slide and picture window residential market. Many of the new United States profile systems have walls that are 0.070 inches thick in an attempt to reduce resin consumption.

One current system in the United States uses five different profiles with an average wall thickness of 0.065 inches. The corners are screw fastened square-cut joints. Alternatives are to fasten the corners with internal corner locks or welding. These are primarily double hung windows.

Another approach brought over from Europe is to provide a complete scope of commercial and residential windows that are fabricated from 50 to 130 different profiles. Frame and sash walls are a minimum of 0.125 inches thick. All corners are miter cut and fusion welded. Welds are buffed and dressed to match surrounding surfaces. A steel insert is used in the center chamber for reinforcement of large windows.

Other approaches to the plastic window market include complete encapsulation and permanent bondage of an aluminium core profile with vinyl. The "Celuka" process uses a solid foamed profile.

One final approach is the use of approximately 100 open or solid plastic profiles (versus the closed, hollow profile) in the fabrication of the window. The profiles may be combined to make any style of window.

These above mentioned plastic windows are discussed to show the basic types of plastic window construction. The actual window design may be any combination or configuration of these techniques depending on the window manufacturers design requirements. In Germany alone there are over 50 patented hollow profile designs.

3.2.2. Application

The plastic window can be designed to any style including double hung, casement, awning, slider, picture, storm and bow window types. Double glazed plastic windows are common and triple glazed frames are already in the design/test phases due to increasing public awareness of energy conservation.

Most North American designs for plastic windows are geared towards the double hung and slider types. More designs will be marketed as the industry matures.

Presently vinyl windows are sold primarily in the residential replacement market. The commercial window market is only now being considered in the penetration strategy of most window manufacturers.

For major penetration of the new-construction field, building codes in many communities will have to be modified to permit the use of plastic frames and sashes.

An important step towards the acceptance of plastic windows is the Society of the Plastics Industry's Plastic Window and Door Committee with representation in the United States and Canada. The objective of the committee is to establish physical testing procedures and standards.

The final Canadian drafts of the standards are close to being approved. Several all vinyl window designs have already been approved by CMHC for marketing in Canada.

3.2.3 Features

3.2.3.1 Energy Conservation

The escalating cost of fuel has created a consumer awareness for energy conservation.

Vinyl is an efficient thermal insulator comparable to high quality wood. Aluminium alone is a poor insulator. Tests done to meet ASTM standards have demonstrated the average double glazed aluminium window unit loses 60% more heat than a comparable vinyl window.

The rising price of energy gives vinyl an edge over alumina refining, smelting and casting. The manufacture of aluminium requires more than 110,000 BTU's/pound. The manufacture of ethylene through to PVC resin compounding requires less than 35,000 BTU's per pound.

Vinyls' achievement of good thermal insulation also prevents the problem of condensation normally associated with aluminium windows.

3.2.3.2 Maintenance

Vinyl frames are scratch resistant. White is the natural colour of the base resin hence there is no finish to chip, peel, crack or rot. Painting is not required. Cleaning is accomplished with water and household detergents.

Both wood and aluminium frames require painting or repair more frequently than comparable vinyl frames.

3.2.3.3 Fire

PVC is inherently flame resistant and as a result can be fitted in multi-storey buildings. The flame resistance is due to the chemical nature of the material, not to additives, it therefore remains unchanged.

3.2.3.4 Sound Insulator

Vinyl is a more efficient sound insulator than aluminium. Specially designed vinyl frames are used as acoustical windows for reduction of noise levels up to 37 dB.

3.3 Current Color and Colour Technology

3.3.1 Colour

Only white vinyl windows are currently being marketed in North America. This is primarily for two reasons.

Firstly, the major market demand (greater than sixty per cent) is for white frames. Only recently have earth tones become popular and the industry is not expecting any major changes in the consumers demands.

Secondly, the lack of coloured vinyl window lineals has been due to a technology lag.

Coloured vinyl compounds have become available for house siding only recently. These are mostly pastel shades. The same

compounds used for the siding have potential for use in the window frames. Resin producers are currently determining the possibilities.

Colour technology has been slow to develop also as a result of a combination of poor UV resistance and the prohibitive expense of dark pigments with adequate weatherability. Weathering is a complex interaction of several chemical reactions that occur simultaneously. Resin producers now have oxidation resistant impact modifiers which are incorporated into the resins providing a much more weather resistant compound.

With these advances, integral colour technology may develop over the next couple of years provided that reasonable cost considerations are achieved.

The solution to providing dark-colour weatherable vinyl compounds currently offered by European firms and under study in North America is a technique called capstock coextrusion. In this method, a thin layer of pigmented weather resistant material is produced simultaneously with a supportive base layer that need not incorporate expensive additives and pigments.

One European process forms a homogeneous combination of PVC section and coloured acryl. Acryl is a thermoplastic synthetic resin, remarkable for its particularly good lightfastness, durability and weather resistance. Colours are available in seven shades including brown, black, orange, olive, metallic, gray and white.

Another coextrusion approach to the colour problem uses a capstock material of specially formulated PVC compound with superior properties of colour retention, light opaqueness, impact retention and resistance to brittleness under UV light.

Since the base material requires no major additives or pigments the cost of this coextruded window lineal will be only slightly more expensive than an impact modified white vinyl window. How much of a premium the coloured window will actually be is dependent on the individual manufacturer.

3.3.2 Cold Climate Resistance

Problems of brittleness and cracking have commonly been attributed to plastic windows in cold climates.

There are many examples of vinyl window installations that have chipped or cracked under extreme weather conditions. Alternatively, manufacturers point to installations of vinyl frames under harsh climatic conditions that have weathered impeccably. Successful installations have been indicated in climates as harsh as northern Russia, Greenland, high altitudes in the Andes Mountains and in Western Canada.

Manufacturers and resin producers ascribe weatherability problems to three basic factors:

- 1) poor material and additives
- 2) process control
- 3) insufficient design

1) Poor Material

To improve weatherability properties for window applications, resin producers previously added an impact modifier. Acrylonitrile/butadiene/styrene (ABS) was added to PVC and this increased the initial resistance to crack propagation. However, the performance of such a compound is worse, after time, than adding no impact modifier. This is because ABS is oxidized to the atmosphere and no longer acts as an impact modifier. The result is a very brittle material upon weathering, again, even more brittle than properly pigmented rigid PVC containing no impact modifiers.

Resin producers now have oxidation resistant impact modifiers which have proven to stabilise the compounds under otherwise damaging climates.

Low quality resins and poor compound formulations are also blamed for early vinyl window failures.

2) Process Control

Another factor, process control, also plays an important role.

The extrusion machine has an optimum screw size, material flow, temperature and die for any specific profile. If these process conditions are not stringently maintained then the resultant material will have variable properties.

Melt temperatures of 370 to 390 degrees F. give good resistance to crack propagation under most normal operating

circumstances. Increasing the melt temperature allows a greater extrusion outflow (i.e. more windows) however, the weatherability characteristics are not maintained. Tests done by one firm indicated that running at a hotter temperature provided a lineal that was initially more crack resistant but after six months was no longer impact resistant at all.

3) Insufficient Design

Manufacturers also point to basic design problems as a source of many cold weather problems. The solution may be in the actual structural design of the vinyl profile.

Air spaces or infiltration points along the frame, such as at corners, may allow build up of water and subsequent freezing. Properly designed weep and drainage systems are required for water run-off.

The profiles in Europe are of thick wall construction and are very resistant to UV distortion and cold shrinkage. They are structurally very strong. North American lineal extruders have adapted a much thinner lineal to reduce resin consumption, thereby cutting costs. Some manufacturers expressed the opinion that the saving of a couple of dollars as a result of further reduction in window weight is done to the detriment of the windows quality and weatherability.

Another design factor explaining cold weather problems considers the varying thermal expansion characteristics of different building materials used with the vinyl. All building materials are

subject to dimensional changes due to thermal influences. When components made of different materials are joined these dimensional changes are compensated for by using flexible couplings, covering strips or other innovative techniques. If these considerations are not included in the design, the different thermal expansions may cause excess stress on the vinyl followed by cracking.

To summarize, cold weatherability may be improved by careful choice of materials, strict process control and proper initial lineal design.

Manufacturers and suppliers of vinyl windows in North America admit to some initial problems, however, they emphasize that these problems no longer exist. They point to studies subjecting the windows to extreme arctic conditions and the successful installations in areas of adverse climatic conditions.

4.0 THE INDUSTRY AND ITS DEVELOPMENT

4.1 Existing Manufacturers

4.1.1 General

In the United States there are currently 55 to 60 fabricators of vinyl windows. In Canada there are only two fabricators of significance. These are:

Acorn Products, Toronto, Ontario

Winco Industries, Winnipeg, Manitoba.

The fabricators receive the vinyl window lineals from a handful of extruders in North America and also from sources in Germany. The Major extruders/lineal importers in North America are: United States

Fiberlux Products, Mount Vernon, NY - extruder

Polytex Corporation, Pittsburgh, PA - extruder

Thermal Industries, Pittsburgh, PA - extruder

Vylex, New Jersey - extruder

Dynamit Nobel, Northvale, NJ - importer.

Canada

Winco in Western Canada is currently importing profiles from Germany. Acorn Products imports profiles from Polytex Corp., Pennsylvania.

4.1.2 Operational Development

4.1.2.1 Fiberlux Products

Fiberlux Products in Mount Vernon, NY started as an aluminum window manufacturer. They began to extrude vinyl storm windows and now offer a full line of windows. Their double hung, double glazed window has a profile thickness averaging 0.075 inches.

Originally supplying only the Northeastern States, Fiberlux has since expanded to over 45 states. Windows are sold to fabricators and installers either fully assembled, knocked down (hardware assembled, but not frame) or as individual lineals.

All lineals are extruded in the Mt. Vernon plant. It is believed that there are between 5 and 10 extruders.

4.1.2.2 Polytex Corporation

Polytex in Pittsburgh is a recent entry into the all-vinyl window market. They have six basic extrusions which can be adapted to a large variety of windows. Aluminum corner locks are used. Lineals are shipped to 10 to 15 different assembly locations including Acorn Products in Ontario. There is no fabrication at the extrusion plant. There are four extrusion lines.

The plant initially supplied only the Pittsburgh region, and then eventually started to supply to other states. Their

main marketing is still in Pennsylvania.

4.1.2.3 Thermal Industries

Thermal Industries use over 100 profiles to assemble a wide range of aluminum and vinyl window types for the replacement market. Profiles are supplied by their subsidiary, Vinylium, which has two operational extruders. They produce approximately 2,000 windows per week and extrude 1.25 million pounds yearly.

They are redesigning in order to reduce the required number of vinyl profiles down to five or ten.

The company services only the Pittsburgh area. All facets are handled by Thermal, right from extrusion through installation. By the Fall of 1979, they expect to be able to supply other fabricators in the nearby regions. Eventually, they would like to go national.

4.1.2.4 Dynamit Nobel

Dynamit Nobel is one of the oldest established vinyl window manufacturers in Europe. The operation in the United States is very recent and initially will only be importing lineals for sale to fabricators across the country. Dynamit Nobel provides its franchisees with complete technical and marketing backup. Currently there are fabricators in Colorado, Massachusetts and New Jersey. The New Jersey plant is only starting and currently employs only two workers.

4.1.2.5 Others

Other manufacturers of lineals such as Vylex, Pierson and Duramade, are all small, localized operations.

4.1.3 Growth and Expansion Plans

All North American lineal manufacturers give indications of a strong growing market.

Fiberlux, after expanding the Mount Vernon location several times, now plans an expansion upstate. The U.S. market is growing quickly.

Polytex is increasing their capacity by 25% through the replacement of their European extruding equipment with American equipment. Polytex indicated that one of their problems was a shortage of assembly capacity. The renovation market is growing rapidly as people begin to feel the "energy crunch".

Thermal Industries forecast annual growths of 40 percent. Within a couple of years they hope to go national. Currently, they are getting a third extruder into operation.

Dynamit Nobel is forecasting a market share for plastic windows growing from the current two percent in the United States to twenty percent within five years. Their program is worldwide in scope and increasing rapidly.

4.2 Expected New Capacity

All current lineal extruders are forecasting that quite a number of new extruders will come on stream in the next few years. All feel that even if large national companies enter the business there is still "more pie than can be eaten by all".

Probably the most significant new entry into the plastic window market will be Certain Teed in the United States. They are one of the largest pipe and siding extruders in the world. They have obtained the services of designer Robert Durham who has started both Polytex and Duramade. Certain Teed will have two extrusion lines operating in February 1979 and hope to be selling by April of that year. The first year will see a consumption of 1.8 million pounds of resin producing 100,000 windows. After several looks at the market they realized that the small regional extruders could not keep up with the demand. By next year, after a national campaign, they intend to add another two extruders.

Most of the major vinyl clad aluminum window manufacturers are looking closely at the all vinyl window. Season-all is reportedly considering the opportunity very seriously. Others mentioned were Alcoa and Thermal Barrier. Komcraft is a new competitor to the vinyl clad aluminum window business. This system produces lineals by coextruding vinyl over aluminum. Industry sources are skeptical as to whether this system can compete with existing designs.

A wide variety of other companies are also looking at

vinyl window potential. Small extrusion companies, national steel companies and siding people, all perceive some potential. The following table lists those companies that are reported to be most seriously considering entering the market.

TABLE I
Companies Considering Entering the U.S. Window Market

Company	Location	Current Product
Crane	Ohio	Siding
Mastic	National	Siding
Kessler	Ohio	Extrusions, siding
Profile Extrusions	Minnesota	Profile extruder
Reynolds	Virginia	Major aluminum
D.G. Shelter Products	Virginia	Building materials

B. F. Goodrich and other resin companies are forecasting a growth rate of 25% to 30% per year for all vinyl windows. Wood and aluminum windows clad with vinyl are also expected to grow at between 20% and 30% per year.

There are several Canadian companies currently considering extrusion of vinyl window frames in Canada.

4.3 Summary of North American Development Pattern

The North American plastic window industry has typically developed from small regional extrusion plants supplying local markets and eventually expanding the sales territory to surrounding regions. Several firms have gone national by supplying lineals to fabricators across the country. There are currently several companies coming on stream and others considering the potential. The industry feels that all new companies in the first couple of years will only help to promote the concept of the vinyl window.

Typical production difficulties are generally encountered during start-up. These include refining of the product design and developing optimum material compounds and process conditions. New technology has virtually eliminated previous vinyl problems associated with cracking under harsh climactic conditions.

Producers in the United States and suppliers in Canada find that the consumer is generally unaware of the vinyl window concept, or past problems. Those that are aware of prior problems are open to the fact that many of the new products have been improved upon. Several of the manufacturers are concerned that the lighter, less structured windows on the market may hurt the vinyl window reputation because of the reduced wall thicknesses to save weight.

5.0 DISPLACEMENT OF TRADITIONAL WINDOW MANUFACTURERS

5.1 Forecast Growth of Vinyl Windows

5.1.1 Growth Forecasts

All vinyl window manufacturers are forecasting growths of between 15% and 50% annually for the next five to ten years. All are also backing-up their forecasts with plant expansions.

Resin companies forecast 25% annual growth for vinyl windows in the marketplace. Forecasts for vinyl clad wood and aluminum windows are between 20% and 30% annually.

Current estimates indicate that plastic windows have successfully captured 30% of the continental European replacement market, with a penetration of 40% expected by 1980. Best estimates for North America indicate a current penetration by vinyl windows of less than two percent of the total window market. Many in the industry forecast that the penetration could reach 10% to 20% by 1985 provided that capacity can meet demand.

All related industries involved in building materials, plastic extrusions, and also other traditional window manufacturers are currently looking at the potential.

Obviously the entire industry foresees a great growth occurring within the vinyl window market over the next couple of years. Why? Basically the reasons for the growth come down to energy conservation which is tied closely to costs. Vinyl

has recently become comparable to, if not more competitive than, other traditional materials. Vinyl may be more competitive because its production is not energy intensive, yet, its main selling feature is thermal insulation.

5.1.2 Materials Comparison

5.1.2.1 Vinyl/Aluminum

As mentioned previously, vinyl production requires only about one-third of the energy consumed in aluminum production.

One of the major problems facing the aluminum industry is the escalating cost of energy. Energy is one of the constraints upon expansion of aluminum capacity. Indeed, it is expected that the U.S. demand for aluminum will exceed domestic primary capacity. Figure I depicts U.S. capacity. A greater dependence on costly imports is imminent. Vinyls' capacity situation appears brighter as illustrated in Figure II. There will also be an oversupply situation in Canada. Resin producers are forecasting fairly stable prices for the next couple of years.

Aluminum weighs approximately twice as much as vinyl. The implications of this weight difference include higher transportation and handling costs for aluminum.

All of these factors point towards the increasing cost competitiveness of vinyl versus aluminum windows. Table II indicates a typical cost comparison.

FIGURE I

ALUMINUM INDUSTRY CAPACITY

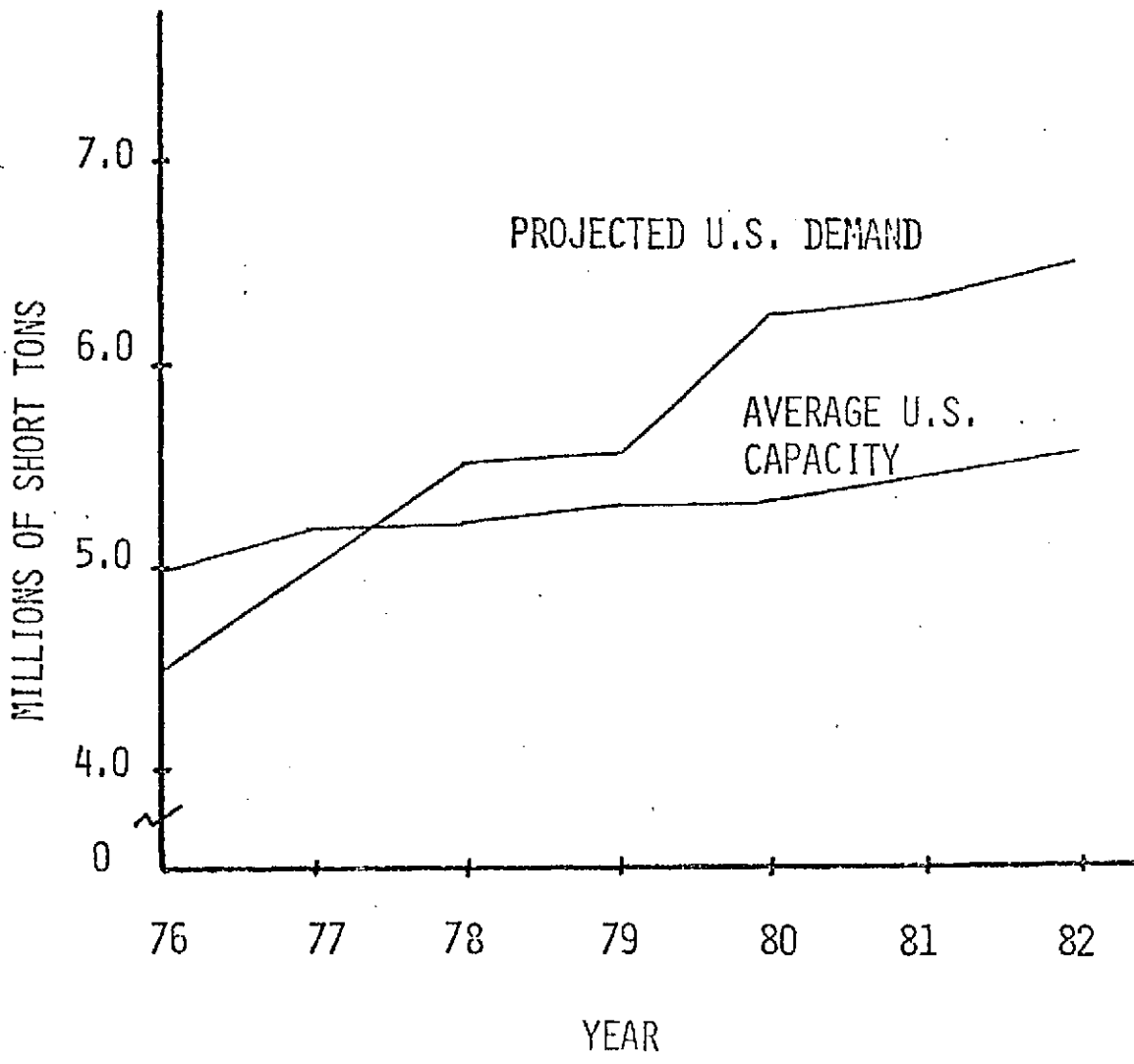


FIGURE II

PVC INDUSTRY CAPACITY

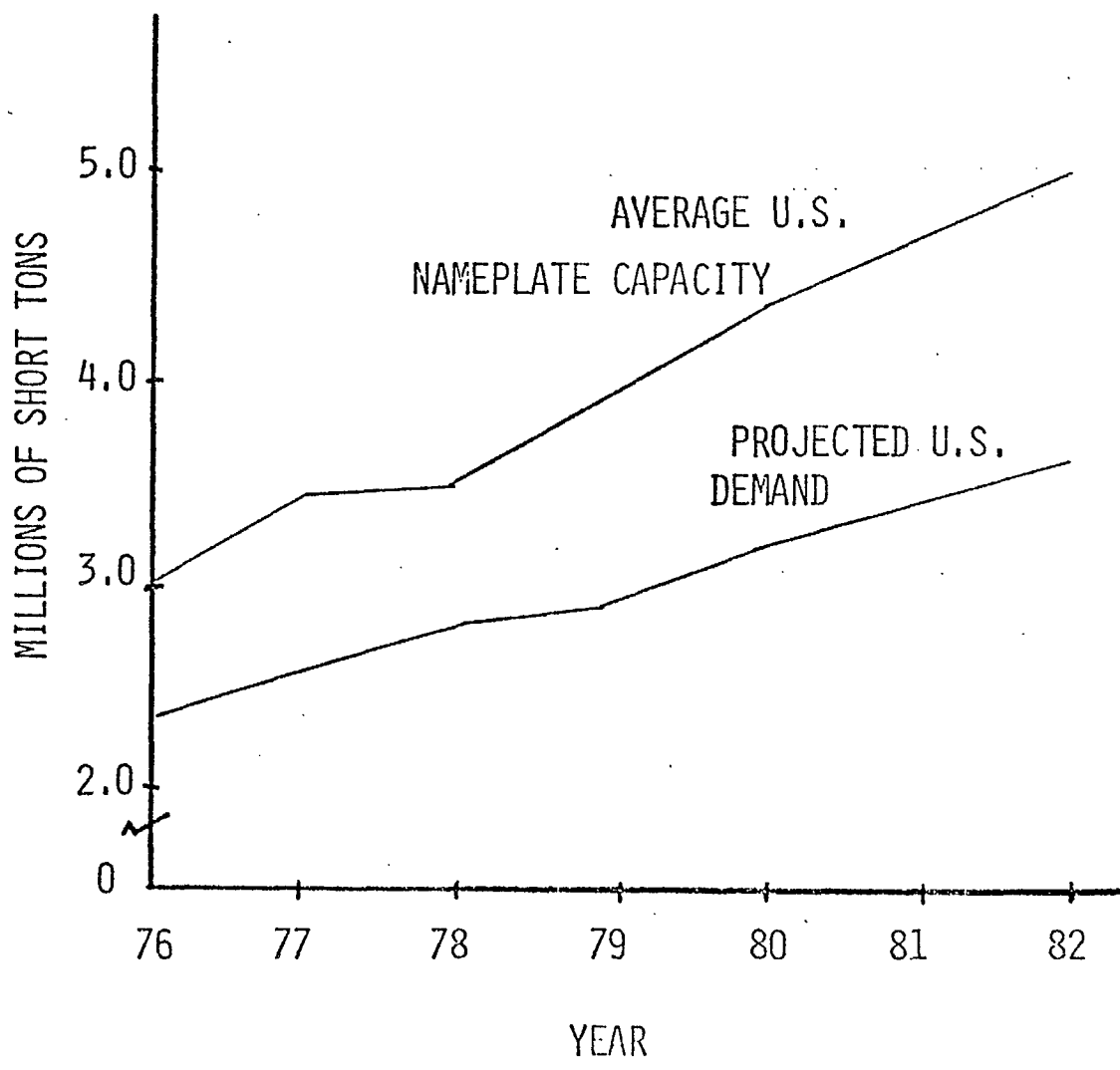


TABLE II

COST COMPARISON BY WINDOW TYPE

<u>TYPE</u>	<u>AVG. WGT. PER UNIT</u> <u>(LBS.)</u>	<u>COST (¢/LB)</u>		
		<u>RAW MATERIAL</u>	<u>EXTRUDED</u>	<u>SURFACE TREATED</u>
VINYL	20	44	90	--
ALUMINUM REGULAR	20	51	65	75
ALUMINUM, THERMAL BREAK	27	71	98	120

SOURCE: BFG ESTIMATE

5.1.2.2 Vinyl/Wood

Wood, unlike aluminum, does not have the affliction of poor thermal insulative capacities. Wood and vinyl have similar thermal conductivities.

However, vinyl has a lower maintenance requirement along with low fire risk features which will promote vinyl window sales.

Wood, of course, has an aesthetically pleasing appearance in the eye of the consumer.

Cost may play a determining factor in the wood/vinyl scenario. Although window costs can currently be comparable, this situation is not expected to be quiescent. Wood prices have risen 67% over the past seven years, while the price of resin increased by only 17% during the same period.

5.2 Impact on Traditional Window Manufacturers

5.2.1 Manufacturers Comments

To date, aluminum and wood manufacturers in Canada and the United States report no noticeable change in sales directly related to the onslaught of the vinyl window.

This is a result of a number of factors. The vinyl window industry is a relatively new entity in North America and penetration is still minimal at less than two percent. The vinyl window sales have been fairly evenly spread across the

Northeast, Central and North-central areas in the U.S. Furthermore, sales of the vinyl windows may be to a newly developed "energy saving" consumer market, this being a market that previously did not exist.

Several aluminum, wood, and steel manufacturers in the U.S. felt that the impact of the vinyl window would never achieve greater than five percent of the market, and that the vinyl window would never be cost competitive. The majority of traditional window suppliers are very aware of the potential threat from vinyl windows. The wood industry basically feels that their product will always be desired and required. This is probably a valid assumption. The aluminum and the already over-priced steel window industries realize the plastic window to be a direct threat to their sales volume, and potentially their viability.

5.2.2 Projection

Penetration by vinyl of the total window market in the U.S. is less than two percent. This is expected to increase to a minimum of 10% to 20% over the next five years. This is a market share increase of 8% to 18% for plastics.

In the 10 year span between 1966 and 1976 a total of 203.4 million windows were used in the United States, broken down as follows:

115.5 million aluminum	56.8%
81.9 million wood	40.3%
6.0 million steel & other	<u>2.9%</u>
	100%

A shift of the market towards vinyl would likely be most directed to the aluminum and steel competitors. The effect on aluminum/steel producers is impossible to predict. There may be a dissipated decline in sales of 8% to 18% amongst the aluminum and steel window manufacturers. Alternatively it could be a case of the strong versus the weak and the inevitable collapse of the smaller, inefficient manufacturers.

5.2.3 Western Canadian Situtation

In Western Canada the displacement is likely to occur in a similar manner over a period of ten years. Wood manufacturers will feel the impact to a lesser extent than the aluminum/steel manufacturers, but all will eventually face competition from vinyl. The magnitude of the impact upon wood will be dependent upon the future cost competitiveness of this natural resource.

The vinyl penetration into Western Canada may be slower due to different design considerations, however, the impending penetration of the market will occur. The attack may be fronted by Europeans, Americans or Western Canadians but it will occur.

One significant factor pertaining to Western Canada is that 70% of the current Western Window industry is aluminum

manufacturers. Most of the remainder is wood.

This implies that the eventual vinyl penetration will have a significant impact in Western Canada because of the higher level of aluminum fabricators relative to other areas of the country. Some aluminum manufacturers will lose a portion of their market, while others may find that their plants are not viable as a result of vinyl competition. The overall effect of the vinyl penetration will be a reduction of labour in the Western Canadian aluminum industry to coincide with the reduced production output.

This decline in the labour requirements in the aluminum window fabrication industry should be counteracted by the proliferation of the vinyl window industry. Vinyl and aluminum windows require a comparable level of labour input in the fabrication and installation processes.

Provided that the expansion of the vinyl window industry servicing the Western market occurs in Western Canada, there will likely be no overall reduction in the number of production jobs. If the Western market is supplied from Eastern Canadian or foreign sources then there will be a noticeable decline in the requirement for window fabrication labour.

The window industry in North America is basically a regionalized industry. Fabrication is done in many locations across the country to service the regional markets. This is a result of transportation costs plus the complexities involved in the

transfer of completed window units over long distances. The vinyl window industry is no exception to this regionalized concept.

In summary, the penetration of the vinyl window will reduce the market demand for aluminum, and to some extent wood windows. Production levels in the aluminum window industry will be reduced, or at best observe no growth, implying a loss in labour requirements for Western Canadian window manufacturers. However, the establishment of a Western Canadian vinyl window industry would create a demand for a comparable number of production workers. The overall job market will not be reduced provided the vinyl industry establishes itself in Western Canada.

5.2.4 Government Intervention

There is unlikely to be any intervention on the part of governments to prevent the eventual displacement of the traditional window manufacturers. This would conflict with energy conservation policies.

To the contrary, the United States federal government now offers an income tax deduction available for the purchase of insulative materials for the home, including windows. This has created a demand that several vinyl fabricators have not been able to satisfy.

5.3 Industry Reaction

The increasing awareness of the window industry to plastics is obvious. Plastics are commonly used as glazing beads, jamb liners, thermal breaks, miscellaneous weatherseals and for cladding.

Several major aluminum manufacturers are considering the possibility of entering the vinyl clad market. Those already into the vinyl clad are looking at the all-vinyl window. Not all aluminum manufacturers will go this route, but undoubtedly some will. Others will increase their thermal efficiencies by introducing thermal breaks and various other design measures.

Wood manufacturers are also looking towards plastic applications to improve their products. Cost competitiveness is their major concern.

Aside from several obvious traditional manufacturers actively pursuing the plastic potential, the majority of the over 5,000 window manufacturers are sitting patiently on the fence and watching to see how the traditional national companies react. Most do not know what their final reaction will be, whether it be towards hard selling, price wars, product design change or product change.

One final reaction from traditional manufacturers is that although the impact of vinyl will be felt, it will not be as hard as many predict. They explain this by saying that many of the traditional markets for wood and aluminum will remain while vinyl creates an entirely new market demand for energy conservation reasons.

6.0 MARKET ANALYSIS

6.1 Western Canadian Window Market

6.1.1 Buyers

6.1.1.1 Purchasers of assembled windows include wholesalers and retail building supply dealers, window installers, construction companies and house owners.

6.1.1.2 Approximately 50% of all window installations are undertaken by professional installers. Another 45% is completed by construction companies. Construction companies subcontract 25% to 35% of their total new construction installations. The remaining 5% is installed privately by the house owner.

6.1.1.3 Currently in Western Canada there is only one purchaser of plastic window profiles. Winco in Winnipeg imports profiles from Germany, assembles the window, and sells the window direct. Winco is currently establishing regional distribution links.

6.1.2 Imports/Exports/Shipments

6.1.2.1 In 1976 the total value of shipments for Canadian wooden windows was approximately \$142 million. The value of shipments

for metal windows for the same period was approximately \$145 million.

6.1.2.2. Imports of wooden windows in 1976 represented approximately \$5.8 million and another \$2.8 million for metal windows. Imports represent less than 3% of the total value of Canadian shipments.

6.1.2.3 Exports for windows of metal or wood type are not identified under the present Statistic Canada commodity codes. Industry experts estimate total exports to be less than \$3 million.

6.1.2.4 The total 1976 Canadian window market from the above statistics and association estimates is valued at approximately \$294 million.

6.1.3 Western Canadian Total Window Market

6.1.3.1 Total Market

The total Western Canadian market for all types of windows is based on analysis and extrapolation of information obtained from building supply wholesalers, retailers, installers and construction companies. The limited statistical sources were used for comparison purposes.

The total 1978 Western Canadian market for windows is approximately 1.13 to 1.20 million units. Approximately 37% (.42 million) units were used in the replacement market with an additional 63% (.71 million installed in new construction. There was also approximately 450,000 to 550,000 storm window units purchased in 1978.

6.1.3.2 Window Market by Region

Table III identifies the total window market by region and by general market.

TABLE III
1978 WESTERN WINDOW MARKET BY REGION

	REPLACEMENT		NEW CONSTRUCTION		TOTAL	
	UNITS	%	UNITS	%	UNITS	%
BR. COLUMBIA	168-180	40	256-270	36	424-450	37
ALBERTA	130-140	31	263-277	37	393-417	35
SASKATCHEWAN	50-54	12	99-105	14	149-159	13
MANITOBA	72-76	17	92-97	13	164-173	15
TOTAL	420-450	100	710-749	100	1130-1199	100

6.1.3.3 Window Market by Material

Table IV identifies the Western Canadian window market by material used in the window. Over 80% of all installations are white.

TABLE IV
1978 WESTERN WINDOW MARKET BY MATERIAL

MATERIAL	REPLACEMENT		NEW CONSTRUCTION		TOTAL	
	UNITS	%	UNITS	%	UNITS	%
ALUMINUM RELATED	273-293	65	518-547	73	791-840	70
WOOD RELATED	126-135	30	163-172	23	289-307	26
STEEL, PLASTIC & OTHERS	21-22	5	29-30	4	50-52	4
TOTAL	420-450	100	710-749	100	1130-1199	100

Table V further breaks down the aluminum and wood markets by material application within the window. Values are estimates based on statements from the industry.

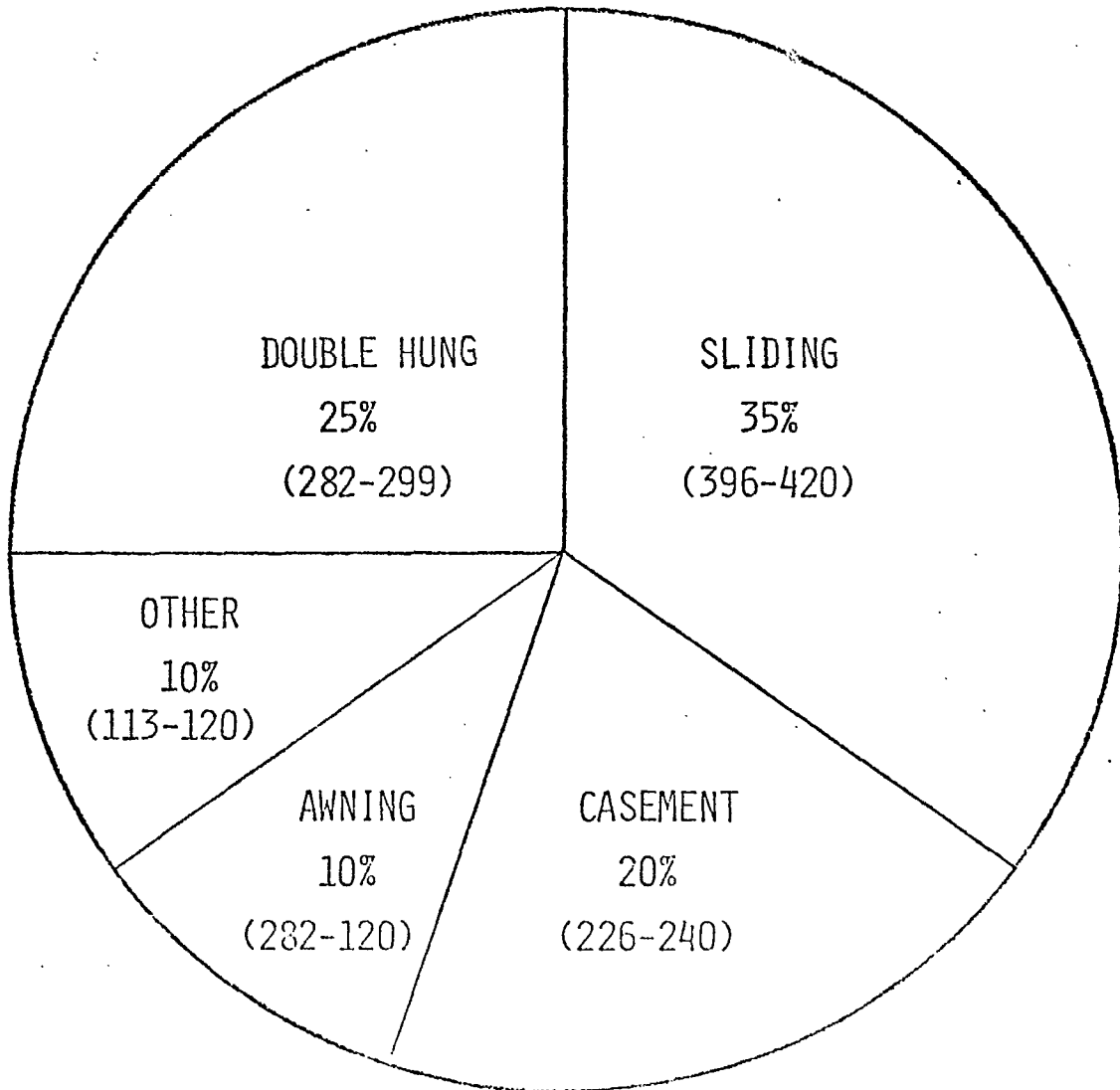
TABLE V
1978 MATERIAL APPLICATION IN WESTERN WINDOWS

MATERIAL	APPLICATION	NO. OF UNITS	%
ALUMINUM RELATED	ALL ALUMINUM	395-420	50
	THERMAL BREAK	198-210	25
	VINYL CLAD & OTHERS	198-210	25
	TOTAL	791-840	100
WOOD RELATED	ALL WOOD	202-215	70
	VINYL CLAD	87-92	30
	TOTAL	289-307	100

6.1.3.4 Window Market by Type

Figure III indicates the distribution of different types of windows relative to the total market. An additional 450-550 thousand storm windows were also purchased in 1978.

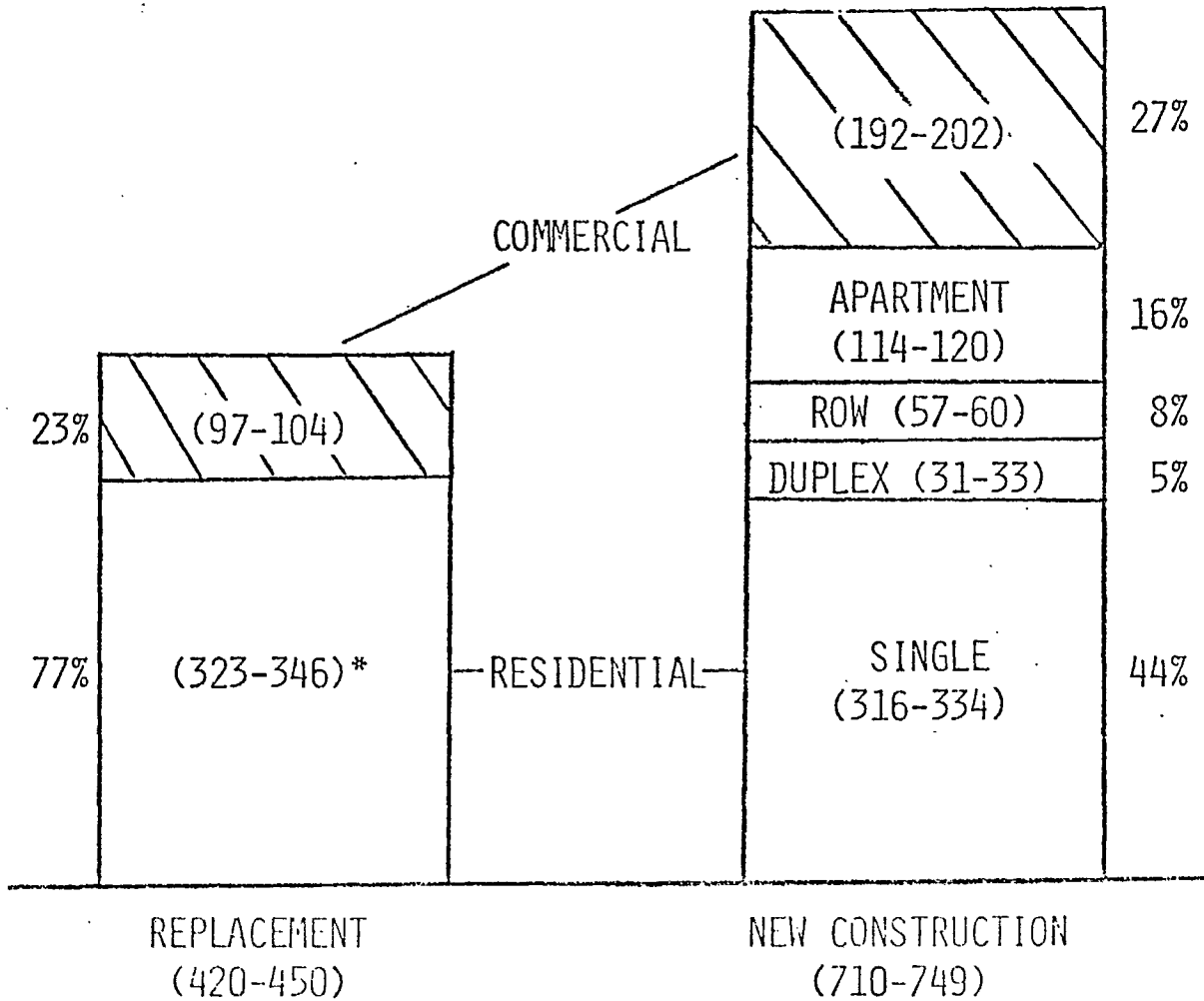
FIGURE III
1978 WESTERN WINDOW MARKET BY TYPE



6.1.3.5 Window Market by Application

Figure IV identifies the total Western Canadian window market by application or end use of the window.

FIGURE IV
1978 WESTERN MARKET BY APPLICATION



* ALL SINGLES AND DOUBLES

6.1.3.6 Window Market for All Types

The total Western Canadian market for all types of windows, by province, is projected through 1982 in Table VI. Growth calculations are independent for each provincial category based on the average response from actual contacts.

TABLE VI

(000 WINDOWS)

TOTAL WESTERN CANADIAN WINDOW MARKET THROUGH 1982

	PROVINCE (% ANNUAL GROWTH)	Y E A R				
		1978	1979	1980	1981	1982
TOTAL REPLACEMENT	B.C. (7)	168-180	179-193	192-206	206-220	220-236
	ALTA (10)	130-140	143-154	157-169	173-185	190-205
	SASK (10)	50-54	55-59	60-65	66-72	73-79
	MAN (12)	72-76	80-85	90-95	101-107	113-120
	TOTAL WESTERN R	420-450	457-491	499-535	546-585	596-640
NEW CONSTRUCTION	B.C. (5)	256-270	269-283	282-298	296-313	311-328
	ALTA (10)	263-277	289-304	318-335	350-369	385-406
	SASK (8)	99-105	107-113	115-122	124-132	135-143
	MAN (7)	92-97	98-104	105-111	113-119	121-127
	TOTAL WESTERN N	710-749	763-804	820-866	883-933	952-1,1004
TOTAL REPLACEMENT & NEW CONSTRUCTION		1,130-1,199	1,220-1,295	1,319-1,401	1,429-1,518	1,548-1,644
STORM WINDOWS		450-550	472-578	496-606	521-636	547-668
TOTAL UNITS		1,580-1,749	1,692-1,873	1,815-2,007	1,950-2,154	2,095-2,312

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6.1.4 Western Canadian Plastic Window Market

6.1.4.1 Current Market Level

The maximum number of vinyl windows sold in Western Canada in 1978 is estimated at 35,000. The actual sales level may be as low as one quarter of this figure. The discrepancy is because there are only two fabricators selling into the Western market and their sales levels are confidential. It is estimated that in 1978 vinyl windows represented no more than 2 to 3% of the total Western window market.

Winco Industries, Winnipeg, is the dominant selling force in the vinyl market. Acorn Products, Toronto, have minimal penetration.

6.1.4.2 Western Canadian Vinyl Window Market Forecast

The market potential for vinyl windows in Western Canada is forecast through 1983 in Table VII.

The forecast assumes that vinyl windows have a current penetration potential of approximately 3 to 4% provided promotional campaigns are undertaken to educate the consumer concerning insulative and other advantages of vinyl. The entry of other firms into this new market will also aid in the general promotional development of the plastic window. Replacement windows offer the greatest immediate opportunity. However, finalization of the S.P.I. specification will lead to greater penetration potential in new construction.

Annual growths of 25% are predicted through 1981, levelling off at 20% annually in the years to follow.

The forecast is conservative since a few vinyl manufacturers indicate growths as high as 40% annually. Other fractions of the industry indicate that the vinyl window could represent 10% to 20% of the total industry by 1985. The market forecasts presented in this report fall well within the reasonable limits of the industries' projections.

TABLE VII
WESTERN CANADIAN VINYL WINDOW MARKET POTENTIAL
FORECAST THROUGH 1983

	Y E A R				
	1979	1980	1981	1982	1983
NUMBER OF WINDOW UNITS (000,S)	59.2-65.5	74.0-81.9	92.5-102.3	111.0-122.8	133.1-147.4
PERCENT-AGE OF TOTAL WINDOW MARKET	3.5%	4.0%	4.7%	5.3%	~ 6%

6.2 Competition

6.2.1 Vinyl Window Suppliers

6.2.1.1 There are only two suppliers of fabricated vinyl window profiles supplying into the Western market. These are:

Winco	-	Winnipeg
Acorn	-	Toronto

Acorn has only just begun penetration of the Western market. Both companies import the profiles.

6.2.2 Traditional Window Suppliers

6.2.2.1 There are over 60 manufacturers of windows of all types in Western Canada. Some manufacturers are simply assemblers of brand name profiles. Many of the manufacturers/assemblers do custom installations.

6.2.2.2 Some of the common manufacturers/distributors are identified in Table VIII.

TABLE VIII
COMMON WESTERN WINDOW MANUFACTURERS/DISTRIBUTORS

COMPANY	LOCATION	PRODUCT
RUSCO INDUSTRIES	WINNIPEG	STEEL
ALCAN BUILDING PRODUCTS	CALGARY	ALUMINUM
ROBERT HUNT COMPANY	CALGARY	WOOD
DASHWOOD	EDMONTON	WOOD/VINYL
MASON	CALGARY	WOOD

6.2.3 Competitor Products and Services

6.2.3.1 Winco offers a wide range of all vinyl windows including awning, casement, bow and picture windows. A double hung window is soon to be offered. All windows are white. The lineals are currently of German origin and have welded corners. Glazing may be double or triple.

The PVC is guaranteed for 20 years and the glazing seal for 10 years.

All windows are CMHC and FHA approved.

6.2.3.2 Acorn is offering the Polytex window. See section 4.1.2.2 for details.

6.2.4 Product Distribution

6.2.4.1 Vinyl windows are currently distributed as Figure V demonstrates. Winco is in the process of setting up a distributor in Alberta to do simple assembly. All other sales have previously been totally fabricated in Winnipeg.

6.2.5 Competitor Pricing

6.2.5.1 Due to the limited penetration of vinyl into Western Canada, there has been no price competition.

6.2.5.2 Pricing structures vary tremendously depending on the material and type of window. Figure VI demonstrates ball-park estimates for various lineal costs.

6.2.5.3 Wholesaler markup on most types of windows is in the order of 10% to 20%.

6.2.5.4 Agents for particular window brands obtain the windows for two to three percent less than a non-exclusive representative.

6.2.5.5 Large volume window purchases for new construction are very often tendered. The lowest bid is awarded the contract.

6.2.5.6 Winco pricing is reported to be 20% higher than a comparable sized and glazed aluminum window.

FIGURE V
VINYL WINDOW DISTRIBUTION IN WESTERN CANADA

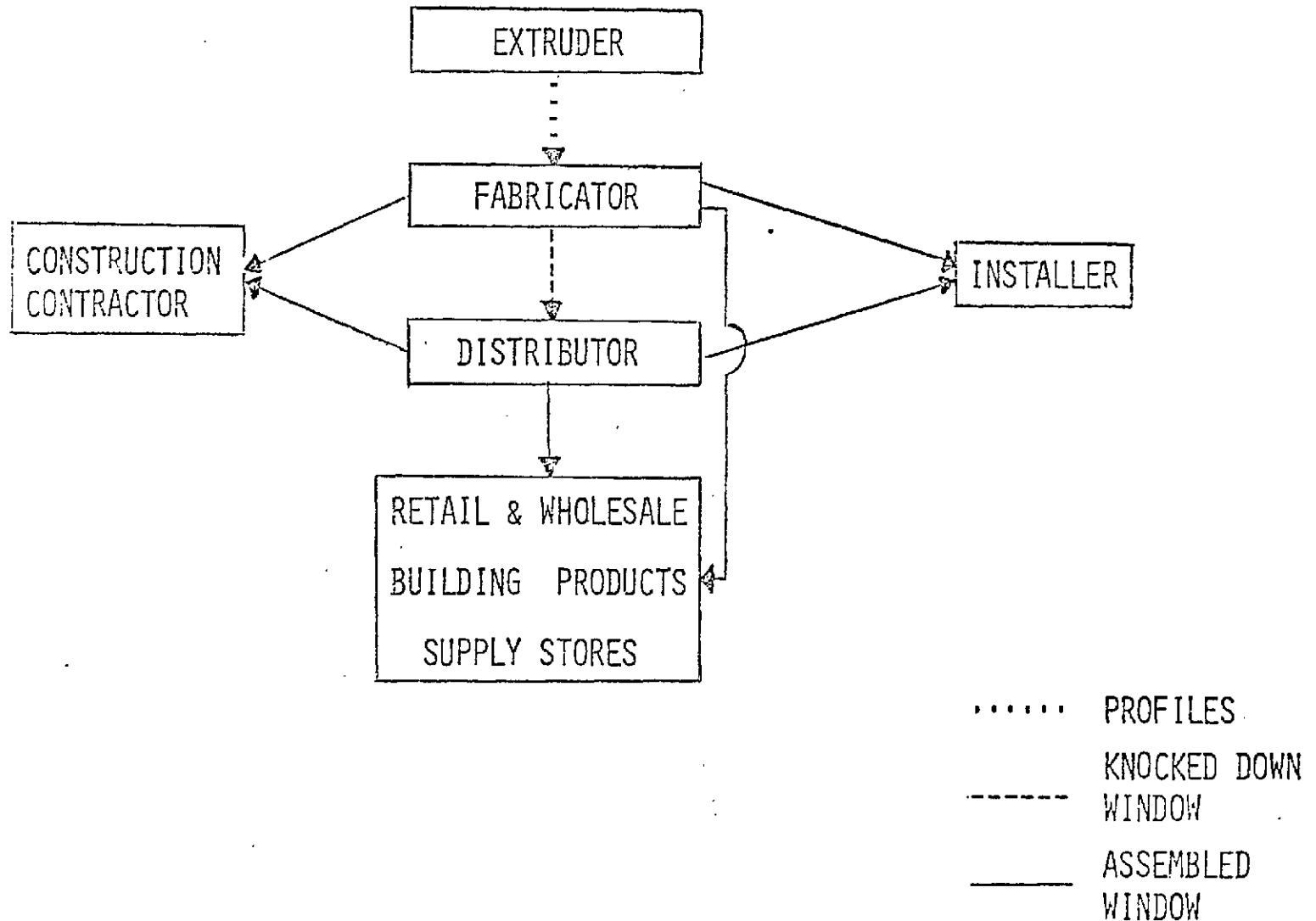
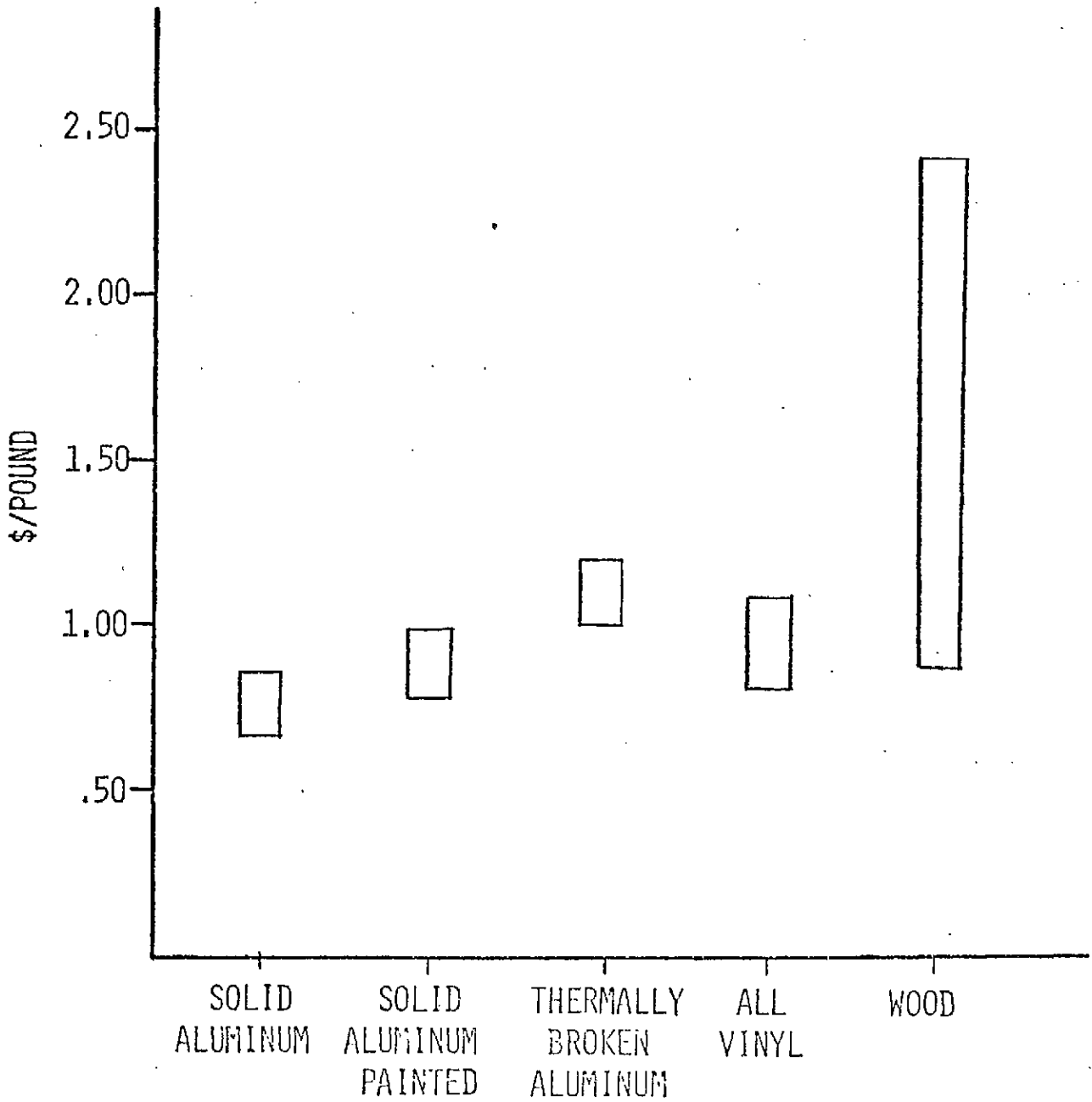


FIGURE VI

PRICE RANGES FOR VARIED LINEALS

(\$1978, CNDN.)



6.3 Purchasing Criteria

6.3.1 Price

Price is one of the most important factors to the window purchaser. For large jobs a tender will often be sent out and the lowest bid will receive the contract.

Many contacts indicated that they thought the Winco window was a great window, however, the 20% premium cost did not warrant the benefits.

New construction for large residential construction jobs are the most price sensitive installations. Often the cheapest window available will take the contract, regardless of quality.

The typical consumer is not aware of the price advantage of purchasing a higher priced window that offers increased insulation. Cost savings will have to be demonstrated.

Custom construction and private replacement are the least sensitive to price since they want the best window for the job.

6.3.2 Quality

As previously stated, quality is not always a major factor for a large urban development residential contractor. The main concern is keeping the building cost of the house to a minimum.

The typical consumer is aware of the differences in quality for various windows.

An example of this is the consumer hesitance when speaking of plastic windows. His first reaction is that plastic cracks and he is not willing to buy an inferior product even at a discount. However, if a particular window is sufficient for his needs, he will not pay more for a better quality window.

6.3.3 Energy Consciousness

Consumer awareness on energy matters is higher than ever before. The escalating cost of energy and the resultant pinch on the pocketbook are at the root of the new consumer mentality.

The residential replacement window purchaser is no longer satisfied with the sturdiest window at the best price. He is also interested in the window that will save the greatest amount off his fuel bill. A premium price may even be paid if the cost effectiveness is demonstrated.

6.3.4 Product Range

Provided a number of standard window types are offered in various sizes, product range is not an important purchase criteria. Double hung casement and sliding windows are the most popular styles. Often it makes no difference what type of window it is to the new homeowner, hence, the residential construction contractor will put in the least expensive style.

Colour is not a major factor. Over 80% of all installations are white. Most of the remainder is an earthy brown colour. Colours are primarily being used by residential contractors.

6.3.5 Brand Name

Brand name is not an important factor in the purchase decision. Very often the installer's company name is mistaken for the manufacturers name.

7.0 IMPLEMENTATION

7.1 Assembly Strategy

7.1.1 Assembly Costs

Assembly costs vary greatly depending upon the window design and required fabrication. Initial capital costs for a plant employing 10 people and producing up to 12,000 screw corner window units would be between \$20,000 and \$30,000. Initial capital costs for a plant employing 10 people and producing 10,000 welded corner window units would be between \$80,000 and \$185,000.

Equipment listings for two typical start-ups are demonstrated in Appendix I.

The actual assembly plant will be dependent upon the design of the window lineal.

7.1.2 Extrusion Plant Assembly

Several American extruders are assembling and distributing the plastic windows from the extrusion plant. The windows are always sold to a local market. Transportation charges become prohibitive when shipping fully assembled windows because of "the high cost of shipping packaged air". One manufacturer indicates that transportation charges to send pre-assembled windows are double the costs for a "knocked down" window over the same distance.

Winco is possibly an example of the sensitivity to transportation. Their assembled windows are generally considered to be 20% more expensive than any other comparable window (one additional reason for the premium is the cost of the imported profile). Winco is now establishing distributorships across Canada. Each distributor will have a small welder for final assembly of the unit with glazing and sash. The windows will not arrive completely knocked down but will require the welding of only one frame member. This reduces costs related to shipping of glazing, while also diminishing the risk of loss due to damage in transit.

The window industry has long been recognized as a localized industry. A window manufacturer does not have to distribute nationally to succeed. Because of transportation costs it is more cost effective for a manufacturer with national distribution to fabricate the windows on a regional basis rather than incur the added transportation costs.

In relation to a Western Canadian operation, assembly solely at the extrusion plant is likely not feasible. The extrusion plant has a minimum economic size, hence, a minimum product output must be realized. This output would require distribution across all of Western Canada. Transportation costs would make this prohibitive unless regional fabrication plants are responsible for the major market areas.

7.1.3 Branch Versus Custom Fabricators

There are two alternatives for the establishment of regional fabrication plants. The first scenario is that of the branch fabrication plants owned by the profile extruder. The second alternative involves the use of custom assemblers.

Most American operations are based upon sales of profiles to custom assemblers. This approach is preferred since a wider distribution network can be achieved due to lower capital costs incurred by the profile extruder. There is the added advantage that the assembler has operated in the area for some time. This reduces expenditures for initial sales penetration for each region.

A few American extrusion operations own a number of fabricators in nearby regions. Generally, the fabricators have been established firms in the area that have been bought out by the extruder. Extruders felt that the return did not usually warrant the initial capital requirement unless a large national firm were to undertake the establishment of all its fabricators nationwide. The added cost control is more significant to a firm with many branches across the country.

7.2 Pricing

7.2.1 Pricing for the actual profile extrusions will be based entirely on the design and will be specific to any one die design.

For cost purposes a window geared towards the Canadian market based on European design (.118 inch wall thickness) is used. A reasonable price for the vinyl lineal would be \$.92/lb. which would be competitive with an aluminum, thermal-brake window.

In actuality this figure could be as low as \$.80 or as high as \$1.60 depending upon the final design. The sales revenue would, of course, have to be proportionate.

7.3 Sales Forecast

7.3.1 Market Penetration Analysis

7.3.1.1 A new western profile extruder offering a strong, reliable window and supporting the fabricators with a strong promotional campaign, should be able to capture 4% of the replacement market, 1% of the new construction, and 2% of the storm window market in year one. This would represent about 2% of the total Western Canadian window market. Penetration could be a couple of percentage points higher depending upon the level of the promotional campaign, the extent of western penetration by other manufacturers, and the capacity of the plant to produce additional profiles.

The plant considered in this analysis uses two extrusion lines. Due to start-up difficulties and running in of new dies and designs, production capacities are limited to 55% and 77%

in years one and two of operation. This therefore implies a penetration in years one and two of approximately 60% and 70% respectively, of the projected Western vinyl window market.

Since the first western profile extruder to establish in Western Canada will be in a very strong competitive position, market shares as high as 75% would not be unreasonable. It is likely that in several years time, as the industry matures, competition from other profile suppliers will reduce the percentage market share.

A 75% penetration in years one and two would require a third extrusion line to increase production capacity. The full operation of the third extrusion line would represent an over-capacity situation. To fully justify a third extruder other markets would have to be considered. The feasibility study is based on the Western market alone.

If the Ontario market is also considered, this projected penetration would likely represent only about 1% of the combined Western Canadian and Ontario market for windows of all types.

7.3.1.2 By year three, the plant could conceivably capture 7% of the replacement market, 3% of the new construction, and at the very least maintain its 2% hold on the storm window market. This represents less than 4% of the total Western window market or about three-quarters of the Western vinyl window market.

If the Ontario market is also considered the penetration would likely represent no more than 2% of the combined Western Canadian and Ontario market for windows of all types.

7.3.1.3 If the above mentioned market penetrations are achieved, the plant will be operating at full capacity in the third year.

7.3.2 Sales Forecast

7.3.2.1 Table IX demonstrates the five year sales forecast based on the market penetrations, pricing and production capacity of the machines. Full production is achieved in the third year.

TABLE IX

WESTERN WINDOW PROFILE SALES FORECAST

YEAR	1	2	3	4	5
\$ VALUE	\$856,520.	\$1,284,780.	\$1,713,040.	\$1,713,040.	\$1,713,040.
% SALES OF OPTIMUM	50%	75%	100%	100%	100%
% PRODUCTION OF OPTIMUM	55%	77%	100%	100%	100%
% OF WESTERN VINYL WINDOW MARKET	59%	72%	76%	*64%	*53%
% OF TOTAL WESTERN WINDOW MARKET	2.1%	2.9%	3.6%	3.4%	3.2%

*Note: The percentage market share drops since the plant has reached maximum production capacity, while the market continues to grow. It is likely that sometime soon after the fourth or fifth year the Western market would support another extrusion line in the same facility. The percentage market share decline also shows the realistic maturing of the industry as more companies enter this new market.

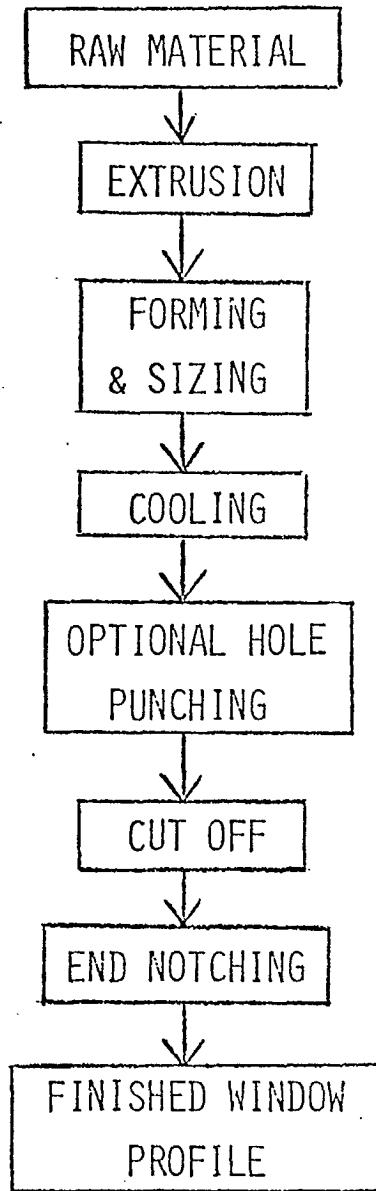
7.4 Production

7.4.1 Method of Manufacturing

7.4.1.1 Plastic profiles for window frames are manufactured by an extrusion process. Figure VII is a process flow diagram illustrating the basic steps involved.

FIGURE VII

EXTRUDED VINYL WINDOW PROFILE PROCESS FLOW

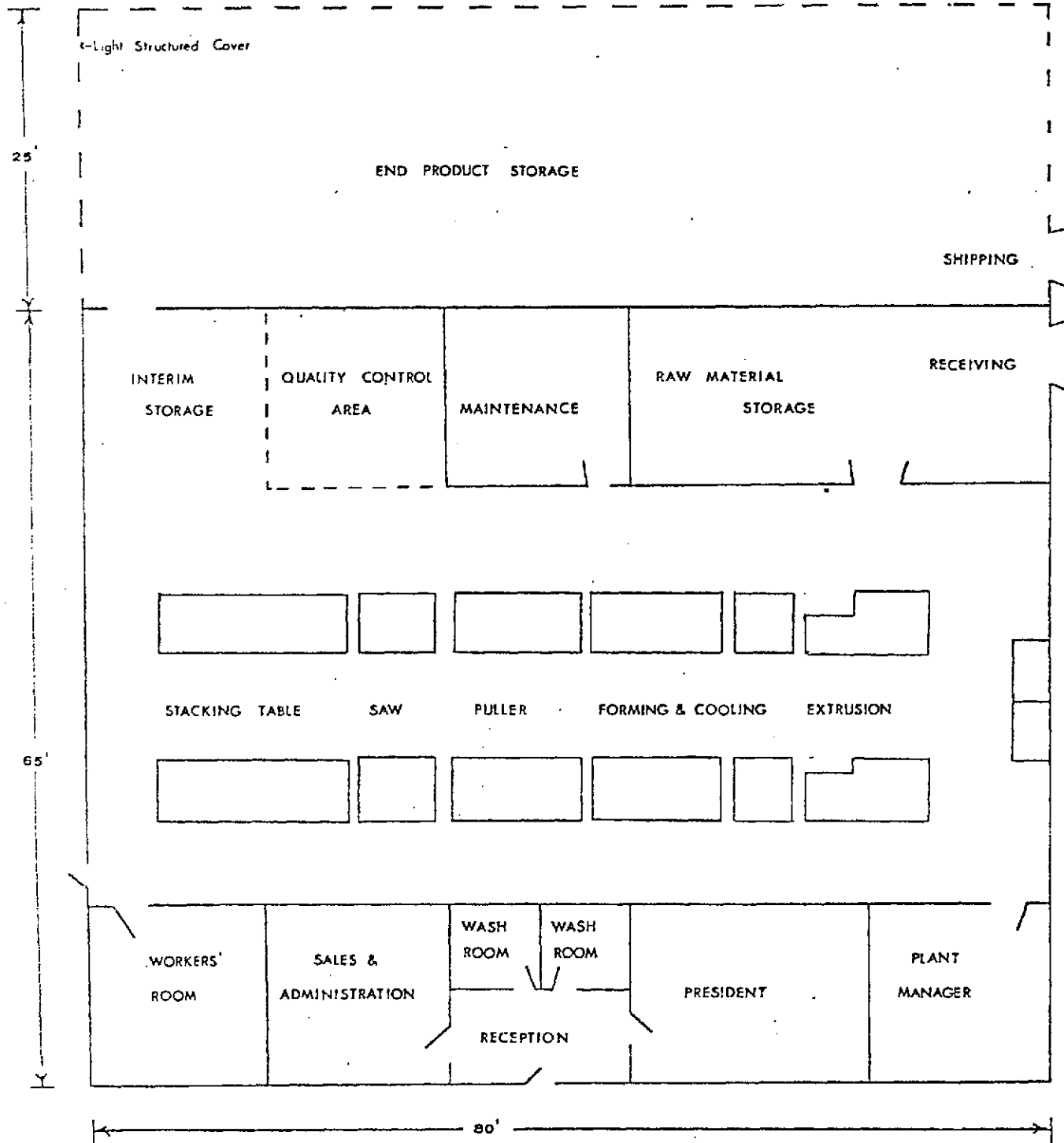


7.4.1.2 Appendix II is a fixed assets schedule for the machinery and equipment involved in a two line profile extrusion plant.

7.4.1.3 Figure VIII is a typical facilities layout for a two line profile extrusion plant. Appendix III demonstrates a typical extrusion line equipment profile and extrusion machine specifications.

7.4.1.4 The plant is based on a production schedule of 175 pounds per hour. Equipment suppliers indicate production levels up to 200 pounds per hour can be achieved with the twin screw extruders. The production levels are therefore conservative.

7.4.1.5 Production is not directly tied to sales in the first two years. Due to down time, plant start-up difficulties, running of new dies and product redesign, years one and two production is at 55% and 77%, respectively, of maximum production. Sales are at 50% and 75% in the first two years to reflect a diminishing waste factor as the plant begins to operate more efficiently. Year three is at full production and sales. The definition of full production takes into account normal down time required for maintenance, die change over, test product runs and contingent problems.



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FIGURE VIII
 WESTERN WINDOW
 PROFILE
 EXTRUSION
 PLANT

7.4.2 Manpower Requirements

7.4.2.1 Direct Labour

During any run of the extrusion lines, two direct workers are required. A semi-skilled labourer is required for raw material handling and end product removal and packaging. A skilled extrusion operator is required to keep the lines running smoothly.

A total of 6 direct labourers are required during the nominal production years based upon 12,000 production hours and 2,000 hours per man year.

7.4.2.2 Indirect

A plant manager with an in depth knowledge of window profile extrusion is required to manage the operation of the plant. This person will be on call twenty four hours per day for production problems.

A general worker/janitor is required on a part time basis for general maintenance and cleanup.

7.4.2.3 Administrative

A president/general manager is required for administrative purposes and for discussions and sales related to the fabricators.

A clerk/typist is included with clerical and receptionist responsibilities.

7.5 Materials

7.5.1 The plant consumes under nominal production, approximately 1,960,000 pounds of compounded polyvinyl chloride. The material is compounded by the resin manufacturer with the appropriate thermal stabilizers, impact modifiers, lubricants and pigments. Eventually the plant should consider the option of compounding "in-house". With the addition of a third machine, compounding would likely be feasible. Additional capital cost would be approximately \$150,000 for mixers, conveyors and related equipment. In-house compounding would lower raw material costs.

7.5.2 All of the raw material is white.

7.5.3 Average raw material inventory during the nominal year's production is 18 days equivalent. Adequate storage space is allotted within the plant layout.

7.5.4 The compounded PVC is available in Eastern Canada and will be available in Western Canada in the middle of 1979. The raw material supply will be stable and competitive with that from the United States for at least the next five years.

7.5.5 End product packaging involves wrapping the profiles in cardboard and strapping. Costs are based on packaging of full production output.

7.5.6 Maintenance supplies include lip replacement, heater bands, seals, building and equipment repair supplies and miscellaneous maintenance requirements.

7.6 General Costs

7.6.1 Transportation

Transportation costs for raw material are incorporated in the rate structure used by resin suppliers. Raw material is assumed to eventually come from the Western region.

Outgoing transportation costs are based on potential rates applicable to plastic profiles transported by the least expensive mode.

Rates are calculated from the plant to eight different locations in Western Canada proportional to the market demand.

7.6.2 Utilities

Electrical power costs are based on the 1978 power schedules for each location. The small industrial rate is used. Electrical consumption during the nominal year is approximately 895,700 KWH at a demand rating of 130 KVA.

Water costs collected from the various 1978 schedules for each location are applied to an estimated consumption of 865,000 gallons per year. Due to varying local regulations, a water cooling/recirculation tower is included in the capital

assets. Aside from personal consumption, most water is used for tower replacement and make-up.

Other utilities include fuel oil and grease for the normal operation of the extrusion equipment.

7.6.3 Other

Offices and travel include travel and business costs for personal selling required to generate product knowledge and demand.

Promotion expenses include a promotional program for installer and wholesalers comprised of radio commercials, consumer brochures and folders, ad mat program, PR releases, referral program and job site signs.

There are currently no Canadian extruders or fabricators with an extensive promotional campaign in Western Canada.

Other selling expenses include yearly product line catalogues to be distributed to all possible retail outlets; and in addition, the periodic publication of wholesale price list changes to correspond with catalogue displays.

8.0 FINANCIAL ANALYSIS MODEL

8.1 Method of Analysis

The following discussion examines the methodology and outcome resulting from the manipulation of specific financial and cost configurations.

With the capital investment and operating cost data, computer analysis is used to generate both operating cost and financial pro forma statements. The computer model used provides a ten year projection and the following statements are generated:

a) Cost analysis

- Wage and Salary Schedule
- Material Requirements
- General Costs and Services
- Principal and Interest Payments
- Schedule of Depreciation

b) Financial analysis

- Income Statement
- Balance Sheet
- Cash Flow

In order to avoid duplication and to present the locational comparison calculations in a manageable form, all sites are presented together in tabular fashion wherever possible. One site (Winnipeg) is given a detailed financial explanation, which is applicable to all other locations. Assumptions and financial techniques are discussed in detail in the Winnipeg analysis.

8.1.1. Commercial Viability - No Public Assistance

This section considers the identical investment from a strictly commercial point of view without any government support. Eight different locations have been considered. Two financial factors are kept as constant as possible for the purpose of the investment analysis comparison. The factors are:

- Owners equity at 40% of total investment
- Working capital equivalent to \$220,000.

Tables 1-6 in Appendix IV summarize the operating and financial pro forma statements and provide data on sources and uses of Capital (1,2); operating cost elements (3); operating statement margins (4); cumulative cash flow from operations (5); and internal rates of return (6).

The summary data demonstrates that without government support the operation will not be financially attractive to an investor using the chosen cost parameters. Internal rates of return are less than 8% throughout the West. Relatively speaking, Edmonton, Winnipeg and Brandon are the most financially viable locations in which to establish a profile extrusion plant without government financial aid.

The sensitivity analysis which follows indicates that minor changes in the end selling price or raw material purchasing price will result in significant financial improvement for the operation. Significantly, the project would also be sensitive to public assistance.

Alternatively, the financial return of the plant could be enhanced by the addition of another extrusion line which would minimize the constant overhead costs. However, the additional line would require marketing of the window profiles outside of Western Canada.

8.2 Winnipeg Locational Analysis

8.2.1 Start-up Capital: Sources and Requirements

8.2.1.1 Table X presents a breakdown of sources and uses for start-up capital.

TABLE X

SOURCES AND USES OF START-UP CAPITAL (1978 \$000)

USES		SOURCES	
LAND	17	DREE	199
BUILDING	105	LONG TERM LOAN	398
EQUIPMENT	598	OWNERS EQUITY	298
WORKING CAPITAL	175		
TOTAL:	<u>\$895</u>		<u>\$895</u>

The total requirement is \$894,900. For book purposes this value appears only at the beginning of year one of operations. But, most expenditures and much of the capital outlay are incurred in periods prior to start-up.

8.2.1.2 In some western locations potential producers would be eligible for public assistance. Where eligible applicants and locations are available, for example, a DREE grant, with a selected configuration of 25/15, could provide up to 22.2% of the total capital requirements. This formula of 25/15 reimburses 25 percent of the cost of physical assets plus 15 percent of the average wage and salary costs of

the second and third year of operations (excluding sales staff and management). The terms of payment for the grant are 80% during the first year of operation and 20% during the fourth year. Bridge financing secured by the provision of a DREE grant is 80% during the first year of operation and 20% during the fourth year. Bridge financing, secured by the provision of a DREE grant, is available at the beginning of the year prior to operations. Principal repayment occurs simultaneously with receipt of DREE grant portions. The DREE grant is included on the balance sheet as non-voting equity for presentation purposes only. Otherwise it would be directly incorporated into the respective year's retained earnings.

8.2.1.3 Owners equity investment is 1/3 of the total capital investment. This value is recorded on the balance liabilities as capital stock.

8.2.1.4 Long term loans are calculated as the remaining portion of capital required. The interest value is compounded annually at a rate of 12.25 percent. The term of the loan is 20 years.

8.2.1.5 Uses of start-up capital are categorized as depicted in table X. Detailed explanations of costing are carried out in sections 7.4 to 7.6 of the report.

As can be expected from a capital intensive operation, the major capital requirement is for equipment at 66.8% of total start-up investment. The next highest value involves the financing of current assets with sufficient start-up working capital.

This initial cash requirement is predicted to be approximately 20.4% of the sales value of year one production. Building and land account for 13.6% of the initial capital requirement. The total building cost is \$105,000.

8.2.2 Operating Costs

8.2.2.1 Figure IX describes the annual operating cost elements for the first year of capacity operation (year 3).

8.2.2.2 Table XI provides the schedule of material requirements for the first ten years of operation. Transportation for the PVC compound are incorporated into the actual purchase price. Material purchases are directly proportional to the level of production in any given year.

8.2.2.3 Table XII describes the wage and salary costs. Those values include administrative personnel that are not located within the "cost of goods sold" category of the operating statement.

8.2.2.4 The utilities, general administration, and selling costs (all wages and salaries excluded) are detailed in table XIII, General Costs and Services. Power costs represent 81% of the total utility expense. PVC resin prices are negotiated at a delivered price, hence, incoming transportation values are negated.

Utilities, contracted maintenance and transportation are proportional to the level of production. Other general costs do not fluctuate with the production level and are provided on an overhead basis.

8.2.2.5 The depreciation schedule as listed in table XIV is broken into two asset categories: building and equipment. The financial statements express depreciation in a management accounting method. Depreciation values are calculated on a straight-line basis with equipment and buildings depreciated over 10 and 20 years respectively.

FIGURE IX

OPERATING COST ELEMENTS (AT CAPACITY)

	PERCENTAGE OF TOTAL OPERATING COST
MATERIALS	74.6%
LABOUR	7.3%
TRANSPORTATION	3.0%
GENERAL ADMINISTRATION AND SELLING	5.7
UTILITIES & MISCELLANEOUS	2.0%
DEPRECIATION	4.1%
INTEREST	3.3%

TOTAL OPERATING COST - \$1,587,804

For purposes of assessing the actual Federal Income Tax expense, a diminishing balance method of depreciation calculation is employed. In addition, the respective values of the DREE grant payments are subtracted from the pool value of equipment assets after the first and fourth years of operation. This assumes that all of the DREE payments contribute to the purchase of equipment assets and thus, depreciation expenses should not be incurred for a non-purchased portion of assets. Since the project is an equipment intensive operation, the method of depreciation will have considerable effect upon the profit and loss values of the income statement. But, since depreciation can be labelled a non-cash expense, the method selected will have no effect upon the annual cash flow values of the project.

8.2.2.6 The long and short (bridge financing of DREE Grant) term loan schedules are detailed in table XV. The long term loan is 20 years at 12.25% interest, compounded annually. Short term interest rates are at 12.75%, with two principal repayment periods matching receipt of DREE grants.

8.2.3 Financial Statement Analysis

8.2.3.1 The standard procedure of analysis is to input all necessary data and, from that, determine the corresponding pro forma statements and IRR value.

Tables XVI, XVII and XVIII present the three financial statements generated from the computer model. The statements are Income Statement, Balance Sheet and Cash Flow.

Figure X describes the profit margins and values derived therefrom for the fifth year of operations.

FIGURE X

OPERATING STATEMENT MARGINS
(AT CAPACITY \$000's)

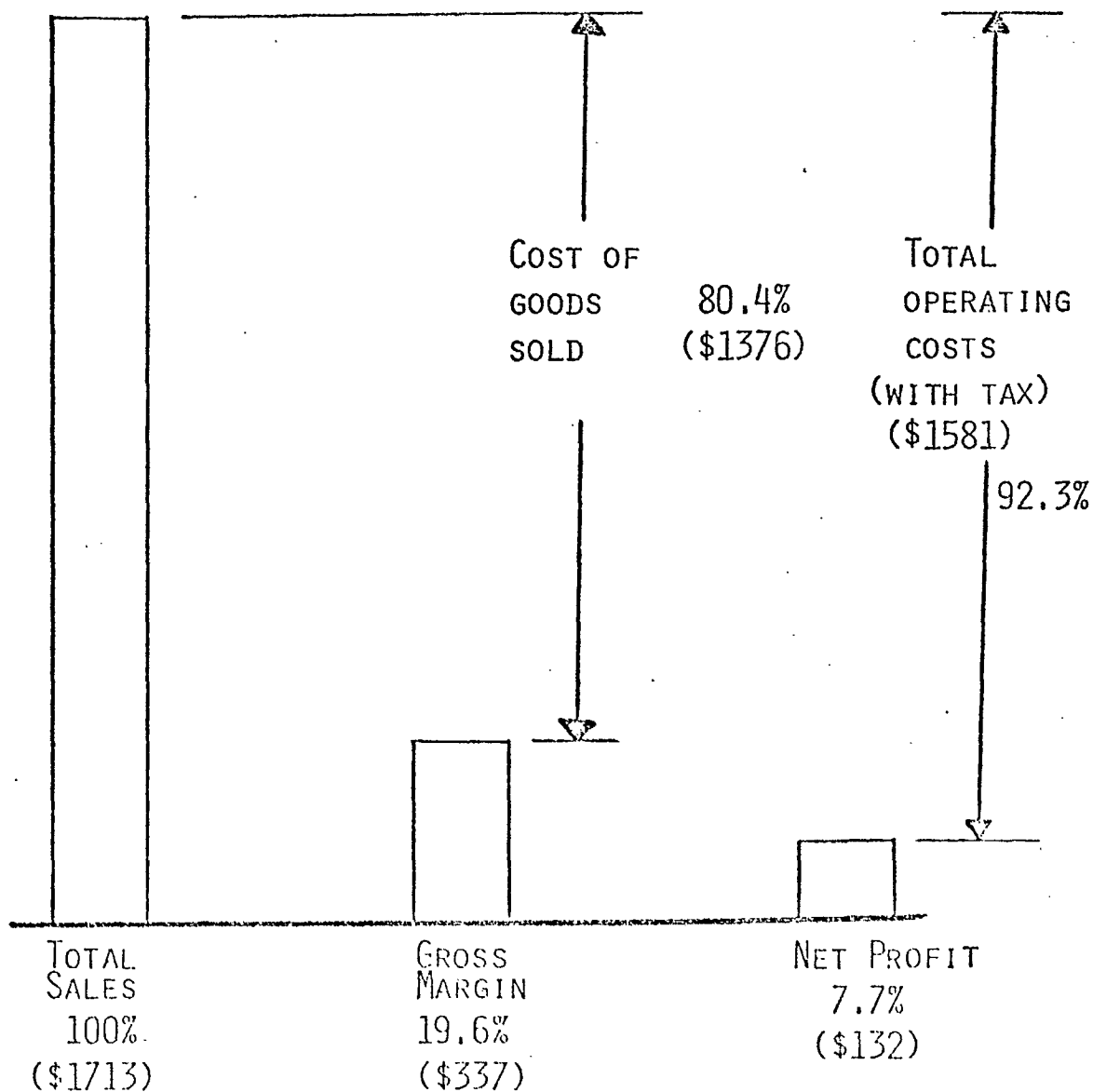


Figure XI provides a further breakdown of the operating statement elements.

FIGURE XI
OPERATING STATEMENT ELEMENTS (YEAR 5)
(\$000's 1978)

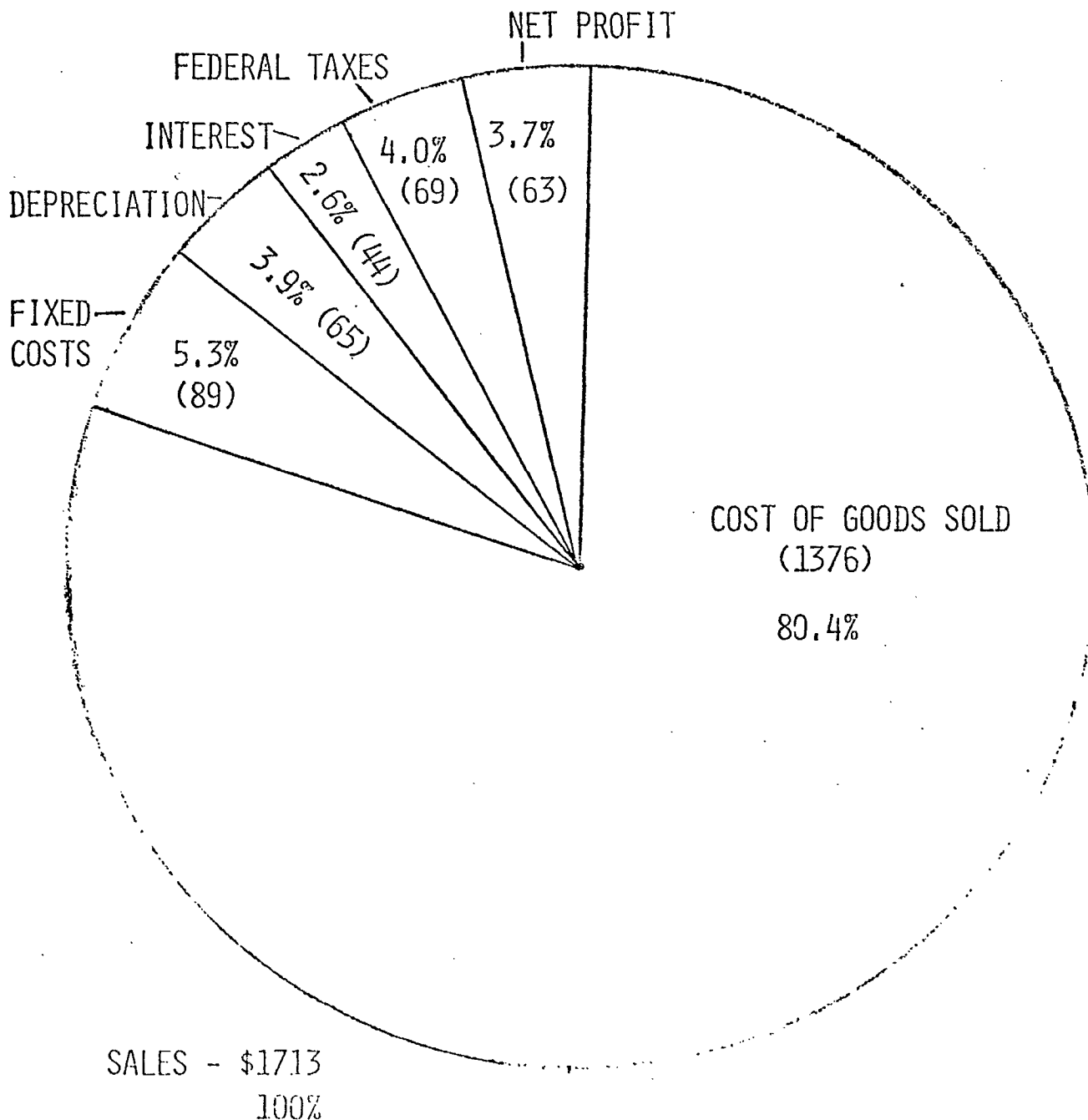


TABLE XI

WINNIPEG

MATERIAL REQUIREMENTS
(constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Production	1,024,100	1,433,740	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000
RAW MATERIALS										
Substrates *										
EVO compound	636,020	890,428	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400
	-	-	-	-	-	-	-	-	-	-
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	636,020	890,428	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400
Process Materials	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	-	-	-	-	-	-	-	-	-	-
Other Raw Materials	-	-	-	-	-	-	-	-	-	-
Total Raw Materials	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	636,020	890,428	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400
DIRECT FACTORY MATERIALS										
Maintenance Supplies	4,191	5,867	7,620	7,620	7,620	7,620	7,620	7,620	7,620	7,620
Packaging	11,314	15,839	20,570	20,570	20,570	20,570	20,570	20,570	20,570	20,570
Miscellaneous	-	-	-	-	-	-	-	-	-	-
Total Factory Materials	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	15,505	21,706	28,190	28,190	28,190	28,190	28,190	28,190	28,190	28,190
TOTAL MATERIALS	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	\$ 651,525	\$ 912,134	\$ 1,184,590	\$ 1,184,590	\$ 1,184,590	\$ 1,184,590	\$ 1,184,590	\$ 1,184,590	\$ 1,184,590	\$ 1,184,590

* Includes Transportation and Compounding

TABLE XII

WINNIPEG

WAGE & SALARY SCHEDULE
(in constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	*Annual cost/man
Direct											
skilled	23,760	33,264	43,200	43,200	43,200	43,200	43,200	43,200	43,200	43,200	14,400
unskilled	21,384	29,938	38,880	38,880	38,880	38,880	38,880	38,880	38,880	38,880	12,960
Total Direct	45,144	63,202	82,080	82,080	82,080	82,080	82,080	82,080	82,080	82,080	-
Indirect											
supervision	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630
research	-	-	-	-	-	-	-	-	-	-	-
quality control	-	-	-	-	-	-	-	-	-	-	-
skilled	-	-	-	-	-	-	-	-	-	-	-
unskilled	4,917	6,884	8,940	8,940	8,940	8,940	8,940	8,940	8,940	8,940	8,940
Total Indirect	30,547	32,514	34,570	34,570	34,570	34,570	34,570	34,570	34,570	34,570	-
Administrative & Sales											
admin. management	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600
admin. other	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600
sales management	-	-	-	-	-	-	-	-	-	-	-
sales personnel	-	-	-	-	-	-	-	-	-	-	-
Total Admin. & Sales	46,200	46,200	46,200	46,200	46,200	46,200	46,200	46,200	46,200	46,200	-
TOTAL MANPOWER COST	\$121,891	\$141,916	\$162,850	\$162,850	\$162,850	\$162,850	\$162,850	\$162,850	\$162,850	\$162,850	-

*Includes 20% as incorporated fringe benefits

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XIII

WINNIPEG

GENERAL COSTS & SERVICES
(CONSTANT '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Utilities										
waste disposal	-	-	-	-	-	-	-	-	-	-
electricity	8,388	11,743	15,250	15,250	15,250	15,250	15,250	15,250	15,250	15,250
water	770	1,078	1,400	1,400	1,400	1,400	1,400	1,400	1,400	1,400
steam supply	-	-	-	-	-	-	-	-	-	-
other utilities	1,139	1,594	2,070	2,070	2,070	2,070	2,070	2,070	2,070	2,070
Other costs										
*transportation	26,873	37,622	48,860	48,860	48,860	48,860	48,860	48,860	48,860	48,860
repair & etc contracting	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	<u>\$41,191</u>	<u>\$ 57,666</u>	<u>\$ 74,890</u>	<u>\$ 74,890</u>	<u>\$ 74,890</u>	<u>\$ 74,890</u>	<u>\$ 74,890</u>	<u>\$ 74,890</u>	<u>\$ 74,890</u>	<u>\$ 74,890</u>
General Administration										
general costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
travel	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
legal & audit	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
	<u>\$10,500</u>	<u>\$ 10,500</u>	<u>\$ 10,500</u>	<u>\$ 10,500</u>	<u>\$ 10,500</u>	<u>\$ 10,500</u>	<u>\$ 10,500</u>	<u>\$ 10,500</u>	<u>\$ 10,500</u>	<u>\$ 10,500</u>
Research & Quality Cont'l										
equipment	-	-	-	-	-	-	-	-	-	-
materials	-	-	-	-	-	-	-	-	-	-
	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Selling & Advertising										
offices & travel	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	<u>\$45,000</u>	<u>\$ 45,000</u>	<u>\$ 45,000</u>	<u>\$ 45,000</u>	<u>\$ 45,000</u>	<u>\$ 45,000</u>	<u>\$ 45,000</u>	<u>\$ 45,000</u>	<u>\$ 45,000</u>	<u>\$ 45,000</u>
TOTAL GEN'L COSTS & SERVICES	<u>\$96,691</u>	<u>\$113,166</u>	<u>\$130,390</u>	<u>\$130,390</u>	<u>\$130,390</u>	<u>\$130,390</u>	<u>\$130,390</u>	<u>\$130,390</u>	<u>\$130,390</u>	<u>\$130,390</u>

* outgoings

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XIV

WINNIPEG

SCHEDULE OF DEPRECIATION

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
BUILDING ASSETS										
Pool value for Taxes	\$ 95,600	\$ 86,040	\$ 77,436	\$ 69,692	\$ 62,723	\$ 56,451	\$ 50,806	\$ 45,725	\$ 41,152	\$ 37,037
Tax depreciation (10%)	9,560	8,604	7,744	6,969	6,272	5,645	5,081	4,573	4,115	3,704
Residual value of tax pool	86,040	77,436	69,692	62,723	56,451	50,806	45,725	41,152	37,037	33,333
Non-tax depreciation *(str-line 5%)	4,780	4,780	4,780	4,780	4,780	4,780	4,780	4,780	4,780	4,780
EQUIPMENT ASSETS										
Pool value for Taxes (less IREF grants)	\$448,674	\$358,939	\$287,151	\$189,990	\$151,992	\$121,594	\$97,275	\$77,820	\$62,256	\$49,805
Tax depreciation (20%)	89,735	71,788	57,430	37,998	30,398	24,319	19,455	15,564	12,451	9,961
Residual value of tax pool (less IREF grants)	358,939	287,151	229,721	151,992	121,594	97,275	77,820	62,256	49,805	39,844
Non-tax depreciation *(str-line 10%)	60,760	60,760	60,760	60,760	60,760	60,760	60,760	60,760	60,760	60,760
COMBINED ASSETS										
Tax depreciation (less DREE)	\$ 99,295	\$ 80,392	\$ 65,174	\$ 44,967	\$ 36,670	\$ 29,964	\$ 24,536	\$ 20,137	\$ 16,566	\$ 13,665
Non-tax depreciation	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540
Accumulated non-tax depreciation	65,540	131,080	196,620	262,160	327,700	393,240	458,780	524,320	589,860	655,400

*Assuming useful life of equipment and buildings to be 10 and 20 years respectively
method of depreciation is straight-line for non-tax purposes.

ROBERTSON NICHERSON GROUP ASSOCIATES LTD

TABLE XV

WINNIPEG

PRINCIPLE & INTEREST PAYMENTS
LOAN SCHEDULE

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Loan A											
starting balance outstanding	398,275	392,747	386,556	379,622	371,856	363,158	353,416	342,505	330,285	316,598	301,269
principle repayment	5,528	6,191	6,934	7,766	8,698	9,742	10,911	12,220	13,687	15,329	17,169
interest payment	47,793	47,130	46,387	45,555	44,623	43,579	42,410	41,101	39,634	37,992	36,152
ending balance	392,747	386,556	379,622	371,856	363,158	353,416	342,505	330,285	316,598	301,269	284,100
Loan B											
starting balance outstanding	-	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-	-
Loan C											
starting balance outstanding	-	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-	-
Short-term notes repayment	158,926	-	-	39,731	-	-	-	-	-	-	-
Short-term interest payment	6,498	4,867	4,867	1,217	-	-	-	-	-	-	-
Total principle repayment	\$164,454	\$ 6,191	\$ 6,934	\$47,497	\$ 8,698	\$ 9,742	\$10,911	\$12,220	\$13,687	\$15,329	\$17,169
Total interest payment	\$ 54,291	\$51,997	\$51,254	\$46,772	\$44,623	\$43,579	\$42,410	\$41,101	\$39,634	\$37,992	\$36,152

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

8.2.3.2 The income statement, Table XVI shows a first year loss and a declining profit value from year three on. First year loss exists because the first two years of operation have a wastage factor included into the rising level of production and the rising revenue figures. The following list demonstrates the production and sales building factors incorporated into this specific model analysis:

	<u>Y E A R</u>				
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
PRODUCTION LEVEL (AS A PERCENTAGE OF CAPACITY)	55	77	100	100	100
SALES REVENUE (AS A PERCENTAGE OF CAPACITY)	50	75	100	100	100

First year loss is also a result of fixed overhead costs resulting from the need for a strong promotional campaign not related to production output.

TABLE XVI

WINNIPEG

PRO-FORMA INCOME STATEMENT
(using constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Sales Revenue	\$ 856,520	\$1,284,780	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040
Cost of Goods										
substrate materials	636,020	890,428	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400
other materials	15,505	21,706	28,190	28,190	28,190	28,190	28,190	28,190	28,190	28,190
labour-direct	45,144	63,202	82,080	82,080	82,080	82,080	82,080	82,080	82,080	82,080
-indirect	30,547	32,514	34,570	34,570	34,570	34,570	34,570	34,570	34,570	34,570
services-waste disposal	-	-	-	-	-	-	-	-	-	-
-electricity	8,388	11,743	15,250	15,250	15,250	15,250	15,250	15,250	15,250	15,250
-steam	-	-	-	-	-	-	-	-	-	-
-water & other utilities	1,909	2,672	3,470	3,470	3,470	3,470	3,470	3,470	3,470	3,470
transportation	26,873	37,622	48,860	48,860	48,860	48,860	48,860	48,860	48,860	48,860
contracting & misc	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	768,407	1,065,516	1,376,130	1,376,130	1,376,130	1,376,130	1,376,130	1,376,130	1,376,130	1,376,130
Gross Profit(Loss)	\$ 88,113	\$ 219,264	\$ 336,910	\$ 336,910	\$ 336,910	\$ 336,910	\$ 336,910	\$ 336,910	\$ 336,910	\$ 336,910
General Administration										
salaries & wages	46,200	46,200	46,200	46,200	46,200	46,200	46,200	46,200	46,200	46,200
office costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
other	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500
	56,700	56,700	56,700	56,700	56,700	56,700	56,700	56,700	56,700	56,700
Research & Quality Control										
salaries & wages	-	-	-	-	-	-	-	-	-	-
equipment, materials & overhead	-	-	-	-	-	-	-	-	-	-

TABLE XVI continued

WINNIPEG

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Selling & Advertising										
salaries	-	-	-	-	-	-	-	-	-	-
franchise	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000
Other Expenses										
insurance	2,760	2,760	2,760	2,760	2,760	2,760	2,760	2,760	2,760	2,760
municipal tax	2,420	2,420	2,420	2,420	2,420	2,420	2,420	2,420	2,420	2,420
miscellaneous	-	-	-	-	-	-	-	-	-	-
net depreciation	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540
interest	54,291	51,997	51,254	46,772	44,623	43,579	42,410	41,101	39,634	37,992
	125,011	122,717	121,974	117,492	115,343	114,299	113,130	111,821	110,354	108,712
Total Operating Costs	983,118	1,277,933	1,587,804	1,583,322	1,581,173	1,580,129	1,578,960	1,577,651	1,576,184	1,574,542
Operating Profit(Loss)	\$(126,598)	\$ 6,847	\$ 125,236	\$ 129,718	\$ 131,867	\$ 132,911	\$ 134,080	\$ 135,389	\$ 136,856	\$ 138,498
manpower training assistance grant	-	-	-	-	-	-	-	-	-	-
Federal Taxes	(68,952)	(3,442)	54,009	64,625	69,117	72,449	75,286	77,741	79,907	81,860
Net Federal Taxes	-	-	-	46,240	69,117	72,449	75,286	77,741	79,907	81,860
NET PROFIT(LOSS)	\$(126,598)	\$ 6,847	\$ 125,236	\$ 83,478	\$ 62,750	\$ 60,462	\$ 58,794	\$ 57,648	\$ 56,949	\$ 56,638

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

8.2.3.3 The pro forma balance sheet statement as presented in table XVII lists a growing cash surplus in current assets. This account is not reduced for analysis purposes. In normal operations, cash levels are limited to working capital requirements and cash withdrawal is made on a continuous basis.

Accounts receivable as presented are approximately 30 days of sales. Similarly, payables located in the current liabilities are valued at one month of total yearly cash expenditures.

Wages are recorded at two weeks of all wages and salaries paid, while federal taxes payable are one month of that year's level of federal tax.

As mentioned previously, the DREE equity investment located in shareholders' equity is non-voting and may be incorporated into the annual return from operations in the years that grant portions are received.

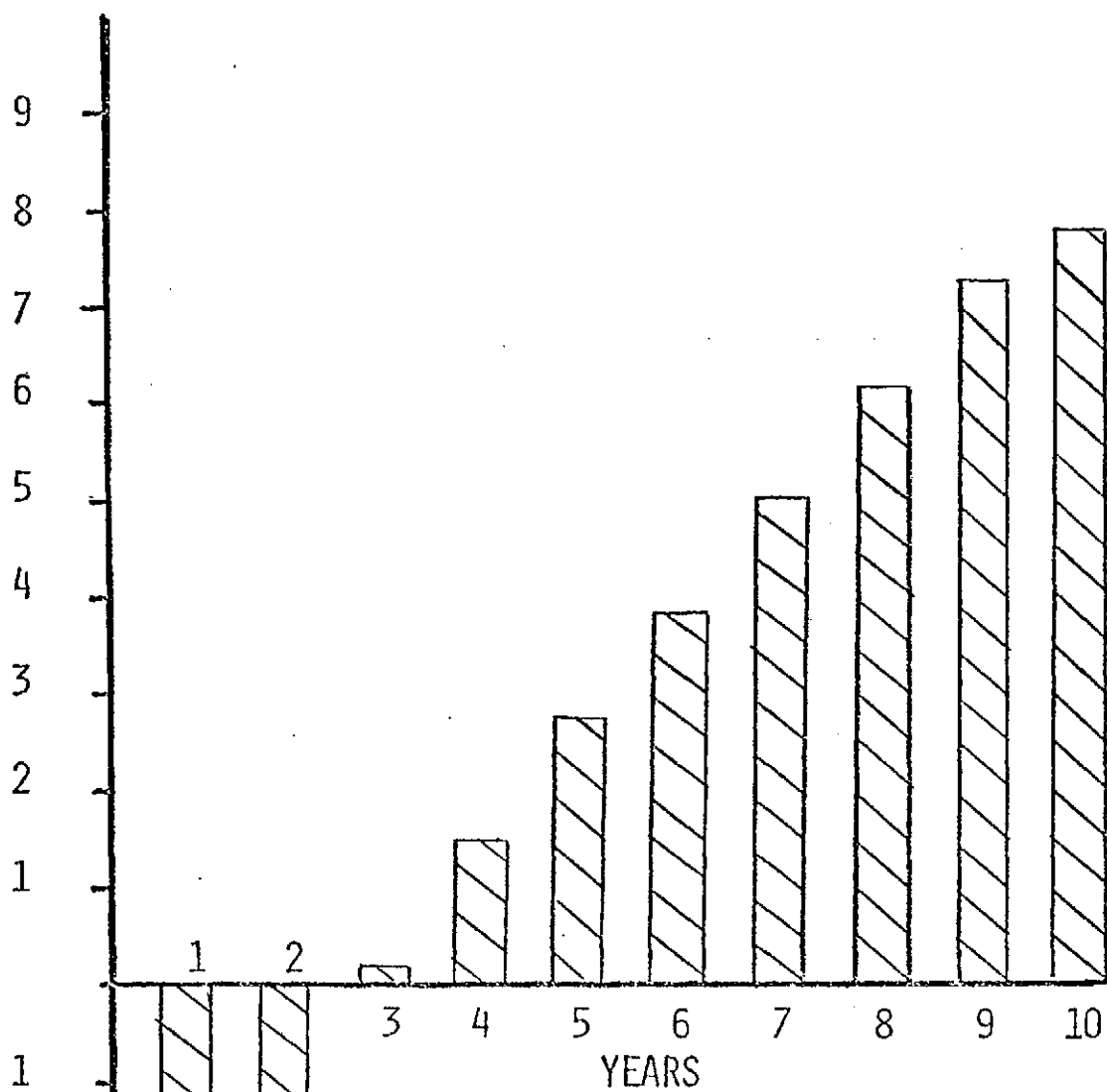
8.2.3.4 The cash flow statement presented in Table XVIII describes the sources and uses of cash on a yearly basis. The original estimated value of working capital required is sufficiently well selected since the cash position is reduced to \$20,132 by the end of year one. Normal pro forma cash flows will be required on a monthly basis in order to further determine actual working capital fluctuations during early stages of planning and operations.

Net cash flow is used as a major source of data in analyzing actual investment return. Figure XII describes the cumulative net cash flow resulting from the presentational model.

FIGURE XII

CUMULATIVE CASH FLOW FROM OPERATIONS

THOUSANDS \$ CNDN.



- CASH FLOW VALUES DO NOT INCLUDE INITIAL WORKING CAPITAL OF \$175,000

TABLE XVII

WINNIPEG

PRO-FORMA BALANCE SHEET
(using constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
ASSETS										
Current										
cash	20,312	42,256	181,457	326,562	448,061	564,598	678,258	789,430	898,413	1,005,425
accounts receivable	71,377	107,065	142,753	142,753	142,753	142,753	142,753	142,753	142,753	142,753
inventory	83,196	115,620	149,518	149,518	149,518	149,518	149,518	149,518	149,518	149,518
Current Assets Total	174,885	264,941	473,728	618,833	740,332	856,869	970,529	1,081,701	1,190,684	1,297,696
Fixed										
land	16,750	16,750	16,750	16,750	16,750	16,750	16,750	16,750	16,750	16,750
buildings/equipment	703,200	703,200	703,200	703,200	703,200	703,200	703,200	703,200	703,200	703,200
accumulated depreciation	65,540	131,080	196,620	262,160	327,700	393,240	458,780	524,320	589,860	655,400
net bldgs/equipment	637,660	572,120	506,580	441,040	375,500	309,960	244,420	178,880	113,340	47,800
Fixed Assets Total	654,410	588,870	523,330	457,790	392,250	326,710	261,170	195,630	130,090	64,550

TOTAL ASSETS	\$829,295	\$853,811	\$997,058	\$1,076,623	\$1,132,582	\$1,183,579	\$1,231,699	\$1,277,331	\$1,320,774	\$1,362,246

TABLE XVII continued

WINNIPEG

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
LIABILITIES										
Current										
Accounts payable	61,783	84,873	109,013	109,013	109,013	109,013	109,013	109,013	109,013	109,013
Notes payable- long term loan	6,191	6,934	7,766	8,698	9,742	10,911	12,220	13,687	15,329	17,169
-other & bridge loan	-	-	-	-	-	-	-	-	-	-
Wages	4,688	5,458	39,731	6,263	6,263	6,263	6,263	6,263	6,263	6,263
Federal taxes	-	-	6,263	3,853	5,760	6,037	6,274	6,478	6,659	6,822
Current Liab's Total	72,662	97,265	162,773	127,827	130,778	132,224	133,770	135,441	137,264	139,267
Long Term										
long term loan	386,556	379,622	371,856	363,158	353,416	342,505	330,285	316,598	301,269	284,100
other & bridge loan	39,731	39,731	-	-	-	-	-	-	-	-
Long Term Total	426,287	419,353	371,856	363,158	353,416	342,505	330,285	316,598	301,269	284,100
Shareholders' Equity										
capital stock	298,018	298,018	298,018	298,018	298,018	298,018	298,018	298,018	298,018	298,018
RES	158,926	158,926	158,926	198,657	198,657	198,657	198,657	198,657	198,657	198,657
retained earnings	(126,598)	(119,751)	5,485	88,963	151,713	212,175	270,969	328,617	385,566	442,204
Equity & R/E Total	330,346	337,193	462,429	585,638	648,388	708,850	767,644	825,292	882,241	938,879
TOTAL LIABILITIES	\$829,295	\$853,811	\$997,058	\$1,076,623	\$1,132,582	\$1,183,579	\$1,231,699	\$1,277,331	\$1,320,774	\$1,362,246

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XVIII

WINNIPEG

PRO-FORMA CASH FLOW

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
CASH at beginning of Period	\$ 175,000	\$20,312	\$ 42,256	\$181,457	\$326,362	\$448,061	\$564,598	\$678,258	\$789,430	\$ 898,413
SOURCES										
From operations	(126,598)	6,847	125,236	83,478	62,750	60,462	58,794	57,648	56,949	56,638
Non cash expense (deprec.)	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540
Increased acc'ts payable	61,783	23,090	24,140	-	-	-	-	-	-	-
Increased charges payable	4,688	770	805	-	-	-	-	-	-	-
Increased fed'l taxes payable	-	-	-	3,853	1,907	277	237	204	181	163
Increased debt/equity	158,926	-	-	39,731	-	-	-	-	-	-
TOTAL Sources	\$ 164,339	\$96,247	\$215,721	\$192,602	\$130,197	\$126,279	\$124,571	\$123,392	\$122,670	\$ 122,341
APPLICATIONS										
Non recovered cash expense										
Increased accounts receivable	71,377	35,688	35,688	-	-	-	-	-	-	-
Increased inventory	83,196	32,424	33,898	-	-	-	-	-	-	-
Debt repayment	164,454	6,191	6,934	47,497	8,698	9,742	10,911	12,220	13,687	15,329
TOTAL Applications	\$ 319,027	\$74,303	\$ 76,520	\$ 47,497	\$ 8,698	\$ 9,742	\$ 10,911	\$ 12,220	\$ 13,687	\$ 15,329
CASH at end of Period	20,312	42,256	181,457	326,562	448,061	564,598	678,258	789,430	898,413	1,005,425
NET CASH FLOW	\$(154,688)	\$21,944	\$139,201	\$145,105	\$121,499	\$116,537	\$113,660	\$111,172	\$108,983	\$ 107,012

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

8.2.4 Financial Investment Analysis

A wide range of economic factors can be considered for evaluation of particular financial investments. The analysis employed herein uses the following financial indicators as a basis upon which to compare investment opportunities.

- a) Initial investment
- b) Cash stream of earnings
- c) End of project residual value

The internal rate of return (IRR) is chosen as a factor that most reasonably combines the above elements and takes into account time discounting of the value of money.

In this study IRR includes owners equity as the initial investment, after-tax cash flows as the discounted stream of earnings (for ten annual periods), and year ten liquid book value as the residual value of project assets.

The residual value is incorporated with the tenth year stream of earnings. It is selected as the year ten book value of assets (excluding cash), less all remaining long and short term liabilities (i.e. book value net worth less cash)

It is noted that no further capital investment is introduced after start-up. This is unlikely, but permits the pro forma calculation to consider uniquely the projects initial investment. All on-going capital project evaluations would be expected to provide satisfactory returns on their own merit, and should not be confused with the base operations justification.

In a similar light, the book value applied to the tenth year plant residual value assumes the project investment to be

a discrete ten-year operation. This is best reflected by the fact that all capitalized equipment, engineering, installation and start-up are completely depreciated (straight line) after the ten year period.

The IRR calculated for the above simulation is 14.42 percent.

Appendix V demonstrates the formula used in calculating the IRR.

8.2.5 Winnipeg Sensitivity Analysis

8.2.5.1 Revenue

Selling price of the window is a crucial purchasing criteria. Minimum pricing schedules have been used in all financial schedules so as to ease initial market penetration and to present conservative feasibility estimates.

A sensitivity analysis is provided for an increase in lineal selling price of \$.02 per pound. This represents a total cost to the purchasing fabricator of \$.94/pound. This is an increase of 2.2% or about \$.50/window.

Using the same parameters as previously used in the "full rate" analysis the IRR for a 2.2% increased selling price is 19.54%.

This analysis assume the same grants and operating cost elements as in the presentational Winnipeg analysis. The cash flow analysis is presented in Appendix VI.

8.2.5.2 Raw Material Costs

Since the raw material represents 74.6% of the operating cost elements, it is of interest to note what effect a price decrease would have upon the plants viability.

For this sensitivity analysis it is assumed that the PVC compound is decreased in price by half a cent per pound (less than 1% discount) while all other financial parameters remain constant as in the presntational model.

Since there will be an over-capacity situation for PVC in Canada, the possibility of negotiating the raw material pricing structure is indeed quite likely.

The IRR with less than a 1% decrease in material costs is increased to 15.88%.

The fact that the IRR is increased about 10% after a raw material price decrease of less than 1% indicates the acute sensitivity to raw material price fluctuations. Price fluctuations in the PVC resin will effect equally all vinyl window manufacturers. However, if the cost of compounding is increased, while material costs remain constant, only those plants not doing their own compounding will be effected. With these factors in mind, the possibility of "in-house" compounding should be considered once the plant is operating smoothly and the expertise has been developed.

8.3 Overall Locational Analysis Comparison

8.3.1 Start-up Capital: Sources and Uses

8.3.1.1 Table XIX presents a breakdown of the capital investment in terms of the requirements. In all cases, the equipment, installation, engineering, starting inventory and start-up are equivalent at \$597,920.

TABLE XIX
USES OF CAPITAL INVESTMENT (1978 \$000'S)

LOCATION								
USE	W	B	S	N.B.	E	P.R.	V	P.G.
LAND	17	3	27	2	69	6	35	25
BUILDING	105	108	110	109	108	108	113	117
WORKING CAPITAL	175	175	175	175	220	175	220	200
EQUIPMENT	598	598	598	598	598	598	598	598
TOTAL	895	884	910	884	995	887	966	940

NOTE: In the above table, and in the following tables, initials are used to represent the following locations:

- | | | | |
|------|---------------------------|------|-----------------------|
| W | - Winnipeg, Man. | E | - Edmonton, Alta. |
| B | - Brandon, Man. | P.R. | - Peace River, Alta. |
| S | - Saskatoon, Sask. | V | - Vancouver, B.C. |
| N.B. | - North Battleford, Sask. | P.G. | - Prince George, B.C. |

8.3.1.2 Table XX presents a breakdown of the capital investment in terms of the sources. Vancouver and Edmonton are ineligible for DREE grants, hence, the owner's equity is set at 40%. All other locations have the owner's equity equal to 33%.

TABLE XX
SOURCES OF CAPITAL INVESTMENT

	L O C A T I O N							
	W	B	S	N.B.	E	P.R.	V	P.G.
OWNER'S EQUITY	298	294	303	294	398	295	386	313
DREE GRANT	199	199	201	201	-	200	-	205
LONG TERM LOAN	398	390	406	389	597	392	580	422
TOTAL	895	884	911	884	995	887	966	940

8.3.2 Operating Costs

8.3.2.1 Table XXI describes the annual operating cost elements for the fifth year of operations.

8.3.2.2 Table XXII provides the schedule of material requirements for the first ten years of operations.

8.3.2.3 Table XXIII describes the wage and salary costs.

8.3.2.4 The utilities, general administration, and selling costs (all wages and salaries excluded) are detailed in Table XXIV, General Costs and Services.

8.3.2.5 The depreciation schedules are listed in Table XXV

8.3.2.6 The long and short term loan schedules are detailed in Table XXVI.

TABLE XXI
OPERATING COST ELEMENTS

(1978 \$'000'S)

	L O C A T I O N							
	W	B	S	N.B.	E	P.R.	V	P.G.
MATERIALS	1,184	1,184	1,180	1,180	1,174	1,174	1,184	1,184
LABOUR	116	116	123	123	120	120	143	143
UTILITIES	19	19	32	36	27	47	24	24
TRANSPORTATION	49	53	42	51	40	59	41	50
OTHER	7	7	7	7	7	7	7	7
GENERAL ADMINISTRATION	57	57	55	56	56	57	54	55
SELLING	33	33	33	33	33	33	33	33
INSURANCE & TAXES	5	6	5	6	5	6	7	6
DEPRECIATION	66	66	66	66	66	66	66	66
INTEREST	45	44	46	44	67	44	65	50
TOTAL	1,581	1,585	1,589	1,602	1,595	1,613	1,624	1,618

TABLE XXII

WINNIPEG, BRANDON, VANCOUVER, PRINCE GEORGE

MATERIAL REQUIREMENTS
(constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Production	1,024,100	1,433,740	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000
RAW MATERIALS										
Substrates *										
PVC compound	636,020	890,428	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400
	-	-	-	-	-	-	-	-	-	-
	636,020	890,428	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400
Process Materials	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
Other Raw Materials	-	-	-	-	-	-	-	-	-	-
Total Raw Materials	636,020	890,428	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400
DISPENSARY FACTORY MATERIALS										
Maintenance supplies	4,191	5,867	7,620	7,620	7,620	7,620	7,620	7,620	7,620	7,620
Packaging	11,314	15,839	20,570	20,570	20,570	20,570	20,570	20,570	20,570	20,570
Miscellaneous	-	-	-	-	-	-	-	-	-	-
Total Factory Materials	15,505	21,706	28,190	28,190	28,190	28,190	28,190	28,190	28,190	28,190
TOTAL MATERIALS	\$ 651,525	\$ 912,134	\$1,184,590	\$1,184,590	\$1,184,590	\$1,184,590	\$1,184,590	\$1,184,590	\$1,184,590	\$1,184,590

* Includes Transportation and Compounding

TABLE XXII (cont'd)

SASKATOON AND NORTH BATTLEFORD

MATERIAL REQUIREMENTS
(constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
production	1,024,100	1,433,740	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000
RAW MATERIALS										
Substrates *	633,325	886,655	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500
PVC compound	-	-	-	-	-	-	-	-	-	-
	633,325	886,655	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500
Process Materials	-	-	-	-	-	-	-	-	-	-
Other Raw Materials	-	-	-	-	-	-	-	-	-	-
Total Raw Materials	633,325	886,655	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500
INSECT FACTORY MATERIALS										
maintenance supplies	4,191	5,867	7,620	7,620	7,620	7,620	7,620	7,620	7,620	7,620
packaging	11,314	15,839	20,570	20,570	20,570	20,570	20,570	20,570	20,570	20,570
miscellaneous	-	-	-	-	-	-	-	-	-	-
Total Factory Materials	15,505	21,706	28,190	28,190	28,190	28,190	28,190	28,190	28,190	28,190
TOTAL MATERIALS	\$ 648,830	\$ 908,361	\$1,179,690	\$1,179,690	\$1,179,690	\$1,179,690	\$1,179,690	\$1,179,690	\$1,179,690	\$1,179,690

* Includes Transportation and Compounding

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXII (cont'd)

EDMONTON, PEACE RIVER

MATERIAL REQUIREMENTS
(constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Production	1,024,100	1,433,740	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000	1,862,000
RAW MATERIALS										
Electrolytes *	630,630	882,882	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600
PVC compound	-	-	-	-	-	-	-	-	-	-
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	630,630	882,882	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600
Process Materials	-	-	-	-	-	-	-	-	-	-
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	-	-	-	-	-	-	-	-	-	-
Other Raw Materials	-	-	-	-	-	-	-	-	-	-
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Total Raw Materials	630,630	882,882	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600
FACTORY MATERIALS										
Maintenance Supplies	4,191	5,867	7,620	7,620	7,620	7,620	7,620	7,620	7,620	7,620
Electricity	11,314	15,839	20,570	20,570	20,570	20,570	20,570	20,570	20,570	20,570
Miscellaneous	-	-	-	-	-	-	-	-	-	-
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Total Factory Materials	15,505	21,706	28,190	28,190	28,190	28,190	28,190	28,190	28,190	28,190
TOTAL MATERIALS	\$ 646,135	\$ 904,588	\$1,174,790	\$1,174,790	\$1,174,790	\$1,174,790	\$1,174,790	\$1,174,790	\$1,174,790	\$1,174,790

* Includes Transportation and Compounding

ROBERTSON NICKERSON GROUP ASSOCIATES LTD.

TABLE XXIII

BRANDON

WAGE & SALARY SCHEDULE
(in constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	*Annual cost/man
Direct											
skilled	23,760	33,264	43,200	43,200	43,200	43,200	43,200	43,200	43,200	43,200	14,400
unskilled	21,384	29,938	38,880	38,880	38,880	38,880	38,880	38,880	38,880	38,880	12,960
Total Direct	45,144	63,202	82,080	82,080	82,080	82,080	82,080	82,080	82,080	82,080	-
Indirect											
supervision	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630
research	-	-	-	-	-	-	-	-	-	-	-
quality control	-	-	-	-	-	-	-	-	-	-	-
skilled	-	-	-	-	-	-	-	-	-	-	-
unskilled	4,917	6,884	8,940	8,940	8,940	8,940	8,940	8,940	8,940	8,940	8,940
Total Indirect	30,547	32,514	34,570	34,570	34,570	34,570	34,570	34,570	34,570	34,570	-
Administrative & Sales											
admin. management	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600
admin. other	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600
sales management	-	-	-	-	-	-	-	-	-	-	-
sales personnel	-	-	-	-	-	-	-	-	-	-	-
Total Admin. & Sales	46,200	46,200	46,200	46,200	46,200	46,200	46,200	46,200	46,200	46,200	-
TOTAL MANPOWER COST	\$121,891	\$141,916	\$162,850	\$162,850	\$162,850	\$162,850	\$162,850	\$162,850	\$162,850	\$162,850	-

*Includes 20% as incorporated fringe benefits

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIII (cont'd)

SASKATOON AND NORTH BATTLEFORD

WAGE & SALARY SCHEDULE
(in constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	*Annual cost/man
Direct											
skilled	25,542	35,759	46,440	46,440	46,440	46,440	46,440	46,440	46,440	46,440	15,480
unskilled	24,552	34,373	44,640	44,640	44,640	44,640	44,640	44,640	44,640	44,640	14,880
Total Direct	50,094	70,132	91,080	91,080	91,080	91,080	91,080	91,080	91,080	91,080	-
Indirect											
supervision	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630
research	-	-	-	-	-	-	-	-	-	-	-
quality control	-	-	-	-	-	-	-	-	-	-	-
skilled	-	-	-	-	-	-	-	-	-	-	-
unskilled	3,498	4,897	6,360	6,360	6,360	6,360	6,360	6,360	6,360	6,360	6,360
Total Indirect	29,128	30,527	31,990	31,990	31,990	31,990	31,990	31,990	31,990	31,990	-
Administrative & Sales											
admin. management	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600
admin. other	11,300	11,300	11,300	11,300	11,300	11,300	11,300	11,300	11,300	11,300	11,300
sales management	-	-	-	-	-	-	-	-	-	-	-
sales personnel	-	-	-	-	-	-	-	-	-	-	-
Total Admin. & Sales	44,900	44,900	44,900	44,900	44,900	44,900	44,900	44,900	44,900	44,900	-
TOTAL MANPOWER COST	\$124,122	\$145,559	\$167,970	\$167,970	\$167,970	\$167,970	\$167,970	\$167,970	\$167,970	\$167,970	-

*Includes 20% as incorporated fringe benefits

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIII (cont'd)

EDMONTON, PEACE RIVER

WAGE & SALARY SCHEDULE
(in constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	*Annual cost/man
Direct											
skilled	24,354	34,096	44,280	44,280	44,280	44,280	44,280	44,280	44,280	44,280	14,760
unskilled	23,760	33,264	43,200	43,200	43,200	43,200	43,200	43,200	43,200	43,200	14,400
Total Direct	48,114	67,360	87,480	87,480	87,480	87,480	87,480	87,480	87,480	87,480	-
Indirect											
supervision	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630	25,630
research	-	-	-	-	-	-	-	-	-	-	-
quality control	-	-	-	-	-	-	-	-	-	-	-
skilled	-	-	-	-	-	-	-	-	-	-	-
un-skilled	3,861	5,405	7,020	7,020	7,020	7,020	7,020	7,020	7,020	7,020	7,020
Total Indirect	29,491	31,035	32,650	32,650	32,650	32,650	32,650	32,650	32,650	32,650	-
Administrative & Sales											
admin. management	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600	33,600
admin. other	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950	11,950
sales management	-	-	-	-	-	-	-	-	-	-	-
sales personnel	-	-	-	-	-	-	-	-	-	-	-
Total Admin. & Sales	45,550	45,550	45,550	45,550	45,550	45,550	45,550	45,550	45,550	45,550	-
TOTAL MANPOWER COST	\$123,155	\$143,945	\$165,680	\$165,680	\$165,680	\$165,680	\$165,680	\$165,680	\$165,680	\$165,680	

*Includes 20% as incorporated fringe benefits

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIII (cont'd)
VANCOUVER, PRINCE GEORGE

WAGE & SALARY SCHEDULE
(in constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	*Annual cost/man
Direct											
skilled	29,700	41,580	54,000	54,000	54,000	54,000	54,000	54,000	54,000	54,000	18,000
unskilled	28,710	40,194	52,200	52,200	52,200	52,200	52,200	52,200	52,200	52,200	17,400
Total Direct	58,410	81,774	106,200	106,200	106,200	106,200	106,200	106,200	106,200	106,200	-
Indirect											
supervision	28,800	28,800	28,800	28,800	28,800	28,800	28,800	28,800	28,800	28,800	28,800
research	-	-	-	-	-	-	-	-	-	-	-
quality control	-	-	-	-	-	-	-	-	-	-	-
skilled	-	-	-	-	-	-	-	-	-	-	-
unskilled	4,620	6,468	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400
Total Indirect	33,420	35,268	37,200	37,200	37,200	37,200	37,200	37,200	37,200	37,200	-
Administrative & Sales											
admin. management	35,400	35,400	35,400	35,400	35,400	35,400	35,400	35,400	35,400	35,400	35,400
admin. other	8,280	8,280	8,280	8,280	8,280	8,280	8,280	8,280	8,280	8,280	8,280
sales management	-	-	-	-	-	-	-	-	-	-	-
sales personnel	-	-	-	-	-	-	-	-	-	-	-
Total Admin. & Sales	43,680	43,680	43,680	43,680	43,680	43,680	43,680	43,680	43,680	43,680	-
TOTAL MANPOWER COST	\$135,510	\$160,722	\$187,080	\$187,080	\$187,080	\$187,080	\$187,080	\$187,080	\$187,080	\$187,080	-

*Includes 20% incorporated fringe benefits

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIV

BRANDON

GENERAL COSTS & SERVICES
(CONSTANT '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Utilities										
waste disposal	-	-	-	-	-	-	-	-	-	-
electricity	8,388	11,743	15,250	15,250	15,250	15,250	15,250	15,250	15,250	15,250
water	743	1,040	1,350	1,350	1,350	1,350	1,350	1,350	1,350	1,350
steam supply	-	-	-	-	-	-	-	-	-	-
other utilities	1,139	1,594	2,070	2,070	2,070	2,070	2,070	2,070	2,070	2,070
Other costs										
*transportation	28,952	40,533	52,640	52,640	52,640	52,640	52,640	52,640	52,640	52,640
repair & mtc contracting	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	<u>\$ 43,243</u>	<u>\$ 60,539</u>	<u>\$ 78,620</u>	<u>\$ 78,620</u>	<u>\$ 78,620</u>	<u>\$ 78,620</u>	<u>\$ 78,620</u>	<u>\$ 78,620</u>	<u>\$ 78,620</u>	<u>\$ 78,620</u>
General Administration										
general costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
travel	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
legal & audit	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
	<u>\$ 11,000</u>	<u>\$ 11,000</u>	<u>\$ 11,000</u>	<u>\$ 11,000</u>	<u>\$ 11,000</u>	<u>\$ 11,000</u>	<u>\$ 11,000</u>	<u>\$ 11,000</u>	<u>\$ 11,000</u>	<u>\$ 11,000</u>
Research & Quality Cont'l										
equipment	-	-	-	-	-	-	-	-	-	-
materials	-	-	-	-	-	-	-	-	-	-
	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Selling & Advertising										
offices & travel	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	<u>\$ 46,500</u>	<u>\$ 46,500</u>	<u>\$ 46,500</u>	<u>\$ 46,500</u>	<u>\$ 46,500</u>	<u>\$ 46,500</u>	<u>\$ 46,500</u>	<u>\$ 46,500</u>	<u>\$ 46,500</u>	<u>\$ 46,500</u>
TOTAL GEN'L COSTS & SERVICES	<u>\$100,743</u>	<u>\$118,039</u>	<u>\$136,120</u>	<u>\$136,120</u>	<u>\$136,120</u>	<u>\$136,120</u>	<u>\$136,120</u>	<u>\$136,120</u>	<u>\$136,120</u>	<u>\$136,120</u>

* outsours

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIV (cont'd)

SASKATOON

GENERAL COSTS & SERVICES
(CONSTANT '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Utilities										
waste disposal	-	-	-	-	-	-	-	-	-	-
electricity	15,538	21,753	28,250	28,250	28,250	28,250	28,250	28,250	28,250	28,250
water	974	1,363	1,770	1,770	1,770	1,770	1,770	1,770	1,770	1,770
steam supply	-	-	-	-	-	-	-	-	-	-
other utilities	1,139	1,594	2,070	2,070	2,070	2,070	2,070	2,070	2,070	2,070
Other costs										
*transportation	23,067	32,294	41,940	41,940	41,940	41,940	41,940	41,940	41,940	41,940
repair & mtc contracting	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	\$ 44,739	\$ 62,633	\$ 81,340	\$ 81,340	\$ 81,340	\$ 81,340	\$ 81,340	\$ 81,340	\$ 81,340	\$ 81,340
General Administration										
general costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
travel	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
legal & audit	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500
Research & Quality Cont'l										
equipment	-	-	-	-	-	-	-	-	-	-
materials	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
Selling & Advertising										
offices & travel	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000
TOTAL GEN'L COSTS & SERVICES	\$100,239	\$118,133	\$136,840	\$136,840	\$136,840	\$136,840	\$136,840	\$136,840	\$136,840	\$136,840

*outsourcing

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIV (cont'd)

NORTH BATTLEFORD

	GENERAL COSTS & SERVICES (CONSTANT '78 \$C)									
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Utilities										
waste disposal	-	-	-	-	-	-	-	-	-	-
electricity	18,139	25,395	32,980	32,980	32,980	32,980	32,980	32,980	32,980	32,980
water	429	601	780	780	780	780	780	780	780	780
steam supply	-	-	-	-	-	-	-	-	-	-
other utilities	1,139	1,594	2,070	2,070	2,070	2,070	2,070	2,070	2,070	2,070
Other costs										
*transportation	28,193	39,470	51,260	51,260	51,260	51,260	51,260	51,260	51,260	51,260
repair & mtc contracting	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	\$ 51,921	\$ 72,689	\$ 94,400	\$ 94,400	\$ 94,400	\$ 94,400	\$ 94,400	\$ 94,400	\$ 94,400	\$ 94,400
General Administration										
general costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
travel	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
legal & audit	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000
Research & Quality Cont'l.										
equipment	-	-	-	-	-	-	-	-	-	-
materials	-	-	-	-	-	-	-	-	-	-
Selling & Advertising										
offices & travel	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500
Promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500
TOTAL GEN'L COSTS & SERVICES	\$109,421	\$130,189	\$151,900	\$151,900	\$151,900	\$151,900	\$151,900	\$151,900	\$151,900	\$151,900

*outsourcing

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIV (cont'd)

EDMONTON

GENERAL COSTS & SERVICES
(CONSTANT '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Utilities										
waste disposal	-	-	-	-	-	-	-	-	-	-
electricity	12,751	17,852	23,184	23,184	23,184	23,184	23,184	23,184	23,184	23,184
water	902	1,263	1,640	1,640	1,640	1,640	1,640	1,640	1,640	1,640
steam supply	-	-	-	-	-	-	-	-	-	-
other utilities	1,139	1,594	2,070	2,070	2,070	2,070	2,070	2,070	2,070	2,070
Other costs										
interpretation	21,978	30,769	39,960	39,960	39,960	39,960	39,960	39,960	39,960	39,960
repair & etc contracting	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	\$40,791	\$ 57,107	\$ 74,164	\$ 74,164	\$ 74,164	\$ 74,164	\$ 74,164	\$ 74,164	\$ 74,164	\$ 74,164
General Administration										
general costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
travel	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
leadi & audit	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
	\$10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500
Research & Quality Cont'l										
equipment	-	-	-	-	-	-	-	-	-	-
materials	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
Selling & Advertising										
offices & travel	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	\$45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000
TOTAL GEN'L COSTS & SERVICES	\$96,291	\$112,607	\$129,664	\$129,664	\$129,664	\$129,664	\$129,664	\$129,664	\$129,664	\$129,664

* outside

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIV

(cont'd)

PEACE RIVER

GENERAL COSTS & SERVICES
(CONSTANT '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Utilities										
waste disposal	-	-	-	-	-	-	-	-	-	-
electricity	23,700	33,179	43,090	43,090	43,090	43,090	43,090	43,090	43,090	43,090
water	908	1,271	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650
steam supply	-	-	-	-	-	-	-	-	-	-
other utilities	1,139	1,594	2,070	2,070	2,070	2,070	2,070	2,070	2,070	2,070
Other costs										
*transportation	32,401	45,361	58,910	58,910	58,910	58,910	58,910	58,910	58,910	58,910
repair & m/c contracting	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	\$ 62,169	\$ 87,034	\$ 113,030	\$ 113,030	\$ 113,030	\$ 113,030	\$ 113,030	\$ 113,030	\$ 113,030	\$ 113,030
General Administration										
general costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
travel	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
legal & audit	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000
Research & Quality Cont'l										
equipment	-	-	-	-	-	-	-	-	-	-
materials	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
Selling & Advertising										
offices & travel	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500
TOTAL GEN'L COSTS & SERVICES	\$119,669	\$144,534	\$170,530	\$170,530	\$170,530	\$170,530	\$170,530	\$170,530	\$170,530	\$170,530

*outsourcing

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIV (cont'd)

VANCOUVER

GENERAL COSTS & SERVICES
(CONSTANT '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Utilities										
waste disposal	-	-	-	-	-	-	-	-	-	-
electricity	11,594	16,232	21,080	21,080	21,080	21,080	21,080	21,080	21,080	21,080
water	519	727	944	944	944	944	944	944	944	944
steam supply	-	-	-	-	-	-	-	-	-	-
other utilities	1,139	1,594	2,070	2,070	2,070	2,070	2,070	2,070	2,070	2,070
Other costs										
*transportation	22,550	31,570	41,000	41,000	41,000	41,000	41,000	41,000	41,000	41,000
repair & mtc contracting	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	\$39,823	\$ 55,752	\$ 72,404	\$ 72,404	\$ 72,404	\$ 72,404	\$ 72,404	\$ 72,404	\$ 72,404	\$ 72,404
General Administration										
general costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
travel	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
legal & audit	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
	\$10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500	\$ 10,500
Research & Quality Cont'l										
equipment	-	-	-	-	-	-	-	-	-	-
materials	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
Selling & Advertising										
offices & travel	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	\$45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000	\$ 45,000
TOTAL GEN'L COSTS & SERVICES	\$95,323	\$111,252	\$127,904	\$127,904	\$127,904	\$127,904	\$127,904	\$127,904	\$127,904	\$127,904

* outgoing

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIV
PRINCE GEORGE

(cont'd)

GENERAL COSTS & SERVICES
(CONSTANT '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Utilities										
waste disposal	-	-	-	-	-	-	-	-	-	-
electricity	11,594	16,232	21,080	21,080	21,080	21,080	21,080	21,080	21,080	21,080
water	820	1,147	1,490	1,490	1,490	1,490	1,490	1,490	1,490	1,490
steam supply	-	-	-	-	-	-	-	-	-	-
other utilities	1,139	1,594	2,070	2,070	2,070	2,070	2,070	2,070	2,070	2,070
Other costs										
*transportation	27,709	38,793	50,380	50,380	50,380	50,380	50,380	50,380	50,380	50,380
repair & m/c contracting	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	\$ 45,283	\$ 63,395	\$ 82,330	\$ 82,330	\$ 82,330	\$ 82,330	\$ 82,330	\$ 82,330	\$ 82,330	\$ 82,330
General Administration										
general costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
travel	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
legal & audit	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000	\$ 11,000
Research & Quality Cont'l										
equipment	-	-	-	-	-	-	-	-	-	-
materials	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
Selling & Advertising										
offices & travel	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500	\$ 46,500
TOTAL GEN'L COSTS & SERVICES	\$102,783	\$120,895	\$139,830	\$139,830	\$139,830	\$139,830	\$139,830	\$139,830	\$139,830	\$139,830

*outsours

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXV

BRANDON

SCHEDULE OF DEPRECIATION

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
BUILDING ASSETS										
Pool value for Taxes	\$ 98,360	\$ 88,524	\$ 79,672	\$ 71,705	\$ 64,534	\$ 58,081	\$52,273	\$47,046	\$42,341	\$38,107
Tax depreciation (10%)	9,836	8,852	7,967	7,171	6,453	5,808	5,227	4,705	4,234	3,811
Residual value of tax pool	88,524	79,672	71,705	64,534	58,081	52,273	47,046	42,341	38,107	34,296
Non-tax depreciation *(str-line 5X)	4,918	4,918	4,918	4,918	4,918	4,918	4,918	4,918	4,918	4,918
EQUIPMENT ASSETS										
Pool value for Taxes (less DREE grants)	\$448,338	\$358,670	\$286,936	\$189,666	\$151,733	\$121,386	\$97,109	\$77,687	\$62,150	\$49,720
Tax depreciation (20%)	89,668	71,734	57,387	37,933	30,347	24,277	19,422	15,537	12,430	9,944
Residual value of tax pool (less DREE grants)	358,670	286,936	229,549	151,733	121,386	97,109	77,687	62,150	49,720	39,776
Non-tax depreciation *(str-line 10X)	60,787	60,787	60,787	60,787	60,787	60,787	60,787	60,787	60,787	60,787
COMBINED ASSETS										
Tax depreciation (less DREE)	\$ 99,504	\$ 80,586	\$ 65,354	\$ 45,104	\$ 36,800	\$ 30,085	\$24,649	\$20,242	\$16,664	\$13,755
Non-tax depreciation	65,705	65,705	65,705	65,705	65,705	65,705	65,705	65,705	65,705	65,705
Accumulated non-tax depreciation	65,705	131,410	197,115	262,820	328,525	394,230	459,935	525,640	591,345	657,050

*Assuming useful life of equipment and buildings to be 10 and 20 years respectively,
method of depreciation is straight-line for non-tax purposes.

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXV

(cont'd)

SASKATOON

SCHEDULE OF DEPRECIATION

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
BUILDING ASSETS										
Pool value for Taxes	\$ 99,720	\$ 89,748	\$ 80,773	\$ 72,696	\$ 65,426	\$ 58,883	\$52,995	\$47,695	\$42,925	\$38,632
Tax depreciation (10%)	9,972	8,975	8,077	7,270	6,543	5,888	5,300	4,770	4,293	3,863
Residual value of tax pool	89,748	80,773	72,696	65,426	58,883	52,995	47,695	42,925	38,632	34,769
Non-tax depreciation *(str-line 5%)	4,986	4,986	4,986	4,986	4,986	4,986	4,986	4,986	4,986	4,986
EQUIPMENT ASSETS										
Pool value for Taxes (less DREE grants)	\$447,556	\$358,045	\$286,436	\$189,066	\$151,253	\$121,002	\$96,802	\$77,442	\$61,954	\$49,563
Tax depreciation (20%)	89,511	71,609	57,287	37,813	30,251	24,200	19,360	15,488	12,391	9,913
Residual value of tax pool (less DREE grants)	358,045	286,436	229,149	151,253	121,002	96,802	77,442	61,954	49,563	39,650
Non-tax depreciation *(str-line 10%)	60,789	60,789	60,789	60,789	60,789	60,789	60,789	60,789	60,789	60,789
COMBINED ASSETS										
Tax depreciation (less DREE)	\$ 99,483	\$ 80,584	\$ 65,364	\$ 45,083	\$ 36,794	\$ 30,088	\$24,660	\$20,258	\$16,684	\$13,776
Non-tax depreciation	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775
Accumulated non-tax depreciation	65,775	131,550	197,325	263,100	328,875	394,650	460,425	526,200	591,975	657,750

*Assuming useful life of equipment and buildings to be 10 and 20 years respectively, method of depreciation is straight-line for non-tax purposes.

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXV (cont'd)

NORTH BATTLEFORD

SCHEDULE OF DEPRECIATION

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
BUILDING ASSETS										
Pool value for Taxes	\$ 99,720	\$ 89,748	\$ 80,773	\$ 72,696	\$ 65,426	\$ 58,883	\$52,995	\$47,695	\$42,925	\$38,632
Tax depreciation (10%)	9,972	8,975	8,077	7,270	6,543	5,888	5,300	4,770	4,293	3,863
Residual value of tax pool	89,748	80,773	72,696	65,426	58,883	52,995	47,695	42,925	38,632	34,769
Non-tax depreciation *(str-line 5%)	4,986	4,986	4,986	4,986	4,986	4,986	4,986	4,986	4,986	4,986
EQUIPMENT ASSETS										
Pool value for Taxes (less DREE grants)	\$447,556	\$358,045	\$286,436	\$189,066	\$151,253	\$121,002	\$96,802	\$77,442	\$61,954	\$49,563
Tax depreciation (20%)	89,511	71,609	57,287	37,813	30,251	24,200	19,360	15,488	12,391	9,913
Residual value of tax pool (less DREE grants)	358,045	286,436	229,149	151,253	121,002	96,802	77,442	61,954	49,563	39,650
Non-tax depreciation *(str-line 10%)	60,789	60,789	60,789	60,789	60,789	60,789	60,789	60,789	60,789	60,789
COMBINED ASSETS										
Tax depreciation (less DREE)	\$ 99,483	\$ 80,584	\$ 65,364	\$ 45,083	\$ 36,794	\$ 30,088	\$24,660	\$20,258	\$16,684	\$13,776
Non-tax depreciation	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775
Accumulated non-tax depreciation	65,775	131,550	197,325	263,100	328,875	394,650	460,425	526,200	591,975	657,750

*Assuming useful life of equipment and buildings to be 10 and 20 years respectively, method of depreciation is straight-line for non-tax purposes.

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXV (cont'd)
EDMONTON

SCHEDULE OF DEPRECIATION

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
BUILDING ASSETS										
Pool value for Taxes	\$ 98,360	\$ 88,524	\$ 79,672	\$ 71,705	\$ 64,534	\$ 58,081	\$ 52,273	\$ 47,046	\$ 42,341	\$38,107
Tax depreciation (10%)	9,836	8,852	7,967	7,171	6,453	5,808	5,227	4,705	4,234	3,811
Residual value of tax pool	88,524	79,672	71,705	64,534	58,081	52,273	47,046	42,341	38,107	34,296
Non-tax depreciation *(str-line 5%)	4,918	4,918	4,918	4,918	4,918	4,918	4,918	4,918	4,918	4,918
EQUIPMENT ASSETS										
Pool value for Taxes (less DREE grants)	\$607,660	\$486,128	\$388,902	\$311,122	\$248,898	\$199,118	\$159,294	\$127,435	\$101,948	\$81,558
Tax depreciation (20%)	121,532	97,226	77,780	62,224	49,780	39,824	31,859	25,487	20,390	16,312
Residual value of tax pool (less DREE grants)	486,128	388,902	311,122	248,898	199,118	159,294	127,435	101,948	81,558	65,246
Non-tax depreciation *(str-line 10%)	60,766	60,766	60,766	60,766	60,766	60,766	60,766	60,766	60,766	60,766
COMBINED ASSETS										
Tax depreciation (less DREE)	\$131,368	\$106,078	\$ 85,747	\$ 69,395	\$ 56,233	\$ 45,632	\$ 37,086	\$ 30,192	\$ 24,624	\$20,123
Non-tax depreciation	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684
Accumulated non-tax depreciation	65,684	131,368	197,052	262,736	328,420	394,104	459,788	525,472	591,156	656,840

*Assuming useful life of equipment and buildings to be 10 and 20 years respectively,
method of depreciation is straight-line for non-tax purposes.

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXV

(cont'd)

PEACE RIVER

SCHEDULE OF DEPRECIATION

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
BUILDING ASSETS										
Pool value for Taxes	\$ 98,360	\$ 88,524	\$ 79,672	\$ 71,705	\$ 64,534	\$ 58,081	\$52,273	\$47,046	\$42,341	\$38,107
Tax depreciation (10%)	9,836	8,852	7,967	7,171	6,453	5,808	5,227	4,705	4,234	3,811
Residual value of tax pool	88,524	79,672	71,705	64,534	58,081	52,273	47,046	42,341	38,107	34,296
Non-tax depreciation *(str-line 5%)	4,918	4,918	4,918	4,918	4,918	4,918	4,918	4,918	4,918	4,918
EQUIPMENT ASSETS										
Pool value for Taxes (less DREF grants)	\$447,878	\$358,302	\$286,642	\$189,369	\$151,495	\$121,196	\$96,957	\$77,566	\$62,053	\$49,642
Tax depreciation (20%)	89,576	71,660	57,328	37,874	30,299	24,239	19,391	15,513	12,411	9,928
Residual value of tax pool (less DREF grants)	358,302	286,642	229,314	151,495	121,196	96,957	77,566	62,053	49,642	39,714
Non-tax depreciation *(str-line 10%)	60,766	60,766	60,766	60,766	60,766	60,766	60,766	60,766	60,766	60,766
COMBINED ASSETS										
Tax depreciation (less DREF)	\$ 99,412	\$ 80,512	\$ 65,295	\$ 45,045	\$ 36,752	\$ 30,047	\$24,618	\$20,218	\$16,645	\$13,739
Non-tax depreciation	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684
Accumulated non-tax depreciation	65,684	131,368	197,052	262,736	328,420	394,104	459,788	525,472	591,156	656,840

*Assuming useful life of equipment and buildings to be 10 and 20 years respectively; method of depreciation is straight-line for non-tax purposes.

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXV (cont'd)

VANCOUVER

SCHEDULE OF DEPRECIATION

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
BUILDING ASSETS										
Pool value for Taxes	\$102,530	\$ 92,277	\$ 83,049	\$ 74,744	\$ 67,270	\$ 60,543	\$ 54,489	\$ 49,040	\$ 44,136	\$39,722
Tax depreciation (10%)	10,253	9,228	8,305	7,474	6,727	6,054	5,449	4,904	4,414	3,972
Residual value of tax pool	92,277	83,049	74,744	67,270	60,543	54,489	49,040	44,136	39,722	35,750
Non-tax depreciation *(str-line 5%)	5,127	5,127	5,127	5,127	5,127	5,127	5,127	5,127	5,127	5,127
EQUIPMENT ASSETS										
Pool value for Taxes (less DREE grants)	\$608,280	\$486,624	\$389,299	\$311,439	\$249,151	\$199,321	\$159,457	\$127,566	\$102,053	\$81,642
Tax depreciation (20%)	121,656	97,325	77,860	62,288	49,830	39,864	31,891	25,513	20,411	16,328
Residual value of tax pool (less DREE grants)	486,624	389,299	311,439	249,151	199,321	159,457	127,566	102,053	81,642	65,314
Non-tax depreciation *(str-line 10%)	60,828	60,828	60,828	60,828	60,828	60,828	60,828	60,828	60,828	60,828
COMBINED ASSETS										
Tax depreciation (less DREE)	\$131,909	\$106,553	\$ 86,165	\$ 69,762	\$ 56,557	\$ 45,918	\$ 37,340	\$ 30,417	\$ 24,825	\$20,300
Non-tax depreciation	65,955	65,955	65,955	65,955	65,955	65,955	65,955	65,955	65,955	65,955
Accumulated non-tax depreciation	65,955	131,910	197,865	263,820	329,775	395,730	461,685	527,640	593,595	659,550

*Assuming useful life of equipment and buildings to be 10 and 20 years respectively,
method of depreciation is straight-line for non-tax purposes.

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXV (cont'd)
PRINCE GEORGE

SCHEDULE OF DEPRECIATION

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
BUILDING ASSETS										
Pool value for Taxes	\$105,960	\$ 95,364	\$ 85,828	\$ 77,245	\$ 69,520	\$ 62,568	\$56,311	\$50,680	\$45,612	\$41,051
Tax depreciation (10%)	10,596	9,536	8,583	7,725	6,952	6,257	5,631	5,068	4,561	4,105
Residual value of tax pool	95,364	85,828	77,245	69,520	62,568	56,311	50,680	45,612	41,051	36,946
Non-tax depreciation *(str-line 5%)	5,298	5,298	5,298	5,298	5,298	5,298	5,298	5,298	5,298	5,298
EQUIPMENT ASSETS										
Pool value for Taxes (less IREE grants)	\$444,836	\$355,869	\$284,695	\$186,810	\$149,448	\$119,558	\$95,646	\$76,517	\$61,214	\$48,971
Tax depreciation (20%)	88,967	71,174	56,939	37,362	29,890	23,912	19,129	15,303	12,243	9,794
Residual value of tax pool (less IREE grants)	355,869	284,695	227,756	149,448	119,558	95,646	76,517	61,214	48,971	39,177
Non-tax depreciation *(str-line 10%)	60,862	60,862	60,862	60,862	60,862	60,862	60,862	60,862	60,862	60,862
COMBINED ASSETS										
Tax depreciation (less IREE)	\$ 99,563	\$ 80,710	\$ 65,522	\$ 45,087	\$ 36,840	\$ 30,169	\$24,760	\$20,371	\$16,804	\$13,899
Non-tax depreciation	66,160	66,160	66,160	66,160	66,160	66,160	66,160	66,160	66,160	66,160
Accumulated non-tax depreciation	66,160	132,320	198,480	264,640	330,800	396,960	463,120	529,280	595,440	661,600

*Assuming useful life of equipment and buildings to be 10 and 20 years respectively,
method of depreciation is straight-line for non-tax purposes.

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXVI

BRANDON

PRINCIPLE & INTEREST PAYMENTS
LOAN SCHEDULE

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Loan A											
starting balance outstanding	390,366	384,948	378,880	372,084	364,472	355,947	346,399	335,705	323,728	310,313	295,289
principle repayment	5,418	6,068	6,796	7,612	8,525	9,548	10,694	11,977	13,415	15,024	16,827
interest payment	46,844	46,194	45,466	44,650	43,737	42,714	41,568	40,285	38,847	37,238	35,435
ending balance	384,948	378,880	372,084	364,472	355,947	346,399	335,705	323,728	310,313	295,289	278,462
Loan B.											
starting balance outstanding	-	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-	-
Loan C											
starting balance outstanding	-	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-	-
Short-term notes repayment	159,532	-	-	39,883	-	-	-	-	-	-	-
Short-term interest payment	6,789	5,085	5,085	1,271	-	-	-	-	-	-	-
Total principle repayment	\$ 164,950	\$ 6,068	\$ 6,796	\$ 47,495	\$ 8,525	\$ 9,548	\$ 10,694	\$ 11,977	\$ 13,415	\$ 15,024	\$ 16,827
Total interest payment	\$ 53,633	\$ 51,279	\$ 50,551	\$ 45,921	\$ 43,737	\$ 42,714	\$ 41,568	\$ 40,285	\$ 38,847	\$ 37,238	\$ 35,435

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXVI

(Cont'd)

SASKATOON

PRINCIPLE & INTEREST PAYMENTS
LOAN SCHEDULE

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Loan A										
starting balance outstanding	406,066	400,430	394,118	387,048	379,130	370,262	360,329	349,204	336,744	322,789
principle repayment	5,636	6,312	7,070	7,918	8,868	9,933	11,125	12,460	13,955	15,629
interest payment	48,728	48,052	47,294	46,446	45,496	44,431	43,239	41,904	40,409	38,735
ending balance	400,430	394,118	387,048	379,130	370,262	360,329	349,204	336,744	322,789	307,160
Loan B										
starting balance outstanding	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-
Loan C										
starting balance outstanding	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-
Short-term notes repayment	160,334	-	-	40,083	-	-	-	-	-	-
Short-term interest payment	6,823	5,111	5,111	1,278	-	-	-	-	-	-
Total principle repayment	\$165,970	\$ 6,312	\$ 7,070	\$48,001	\$ 8,868	\$ 9,933	\$11,125	\$12,460	\$13,955	\$15,629
Total interest payment	\$ 55,551	\$53,163	\$52,405	\$47,724	\$45,496	\$44,431	\$43,239	\$41,904	\$40,409	\$38,735

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXVI

(cont'd)

NORTH BATTLEFORD

PRINCIPLE & INTEREST PAYMENTS
LOAN SCHEDULE

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Loan A											
starting balance outstanding	389,284	383,881	377,830	371,053	363,462	354,960	345,438	334,774	322,830	309,453	294,470
principle repayment	5,403	6,051	6,777	7,591	8,502	9,522	10,664	11,944	13,377	14,983	16,781
interest payment	46,714	46,066	45,340	44,526	43,115	42,595	41,453	40,173	38,740	37,134	35,336
ending balance	383,881	377,830	371,053	363,462	354,960	345,438	334,774	322,830	309,453	294,470	277,689
Loan B											
starting balance outstanding	-	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-	-
Loan C											
starting balance outstanding	-	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-	-
Short-term notes repayment	160,334	-	-	40,083	-	-	-	-	-	-	-
Short-term interest payment	6,823	5,111	5,111	1,278	-	-	-	-	-	-	-
Total principle repayment	\$165,737	\$6,051	\$6,777	\$47,674	\$8,502	\$9,522	\$10,664	\$11,944	\$13,377	\$14,983	\$16,781
Total interest payment	\$53,537	\$51,177	\$50,451	\$45,804	\$43,615	\$42,595	\$41,453	\$40,173	\$38,740	\$37,134	\$35,336

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXVI (Cont'd)

EDMONTON

PRINCIPLE & INTEREST PAYMENTS
LOAN SCHEDULE

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Loan A										
starting balance outstanding	597,384	589,093	579,807	569,407	557,759	544,713	530,102	513,737	495,408	474,880
principle repayment	8,291	9,286	10,400	11,648	13,046	14,611	16,365	18,329	20,528	22,991
interest payment	71,686	70,691	69,577	68,329	66,931	65,366	63,612	61,648	59,449	56,986
ending balance	589,093	579,807	569,407	557,759	544,713	530,102	513,737	495,408	474,880	451,889
Loan B										
starting balance outstanding	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-
Loan C										
starting balance outstanding	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-
Short-term notes repayment	-	-	-	-	-	-	-	-	-	-
Short-term interest payment	-	-	-	-	-	-	-	-	-	-
Total principle repayment	\$ 8,291	\$ 9,286	\$10,400	\$11,648	\$13,046	\$14,611	\$16,365	\$18,329	\$20,528	\$22,991
Total interest payment	\$71,686	\$70,691	\$69,577	\$68,329	\$66,931	\$65,366	\$63,612	\$61,648	\$59,449	\$56,986

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXVI (cont'd)

PEACE RIVER

PRINCIPLE & INTEREST PAYMENTS
LOAN SCHEDULE

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Loan A											
starting balance outstanding	391,749	386,312	380,222	373,402	365,763	357,208	347,626	336,894	324,874	311,412	296,334
principle repayment	5,437	6,090	6,820	7,639	8,555	9,582	10,732	12,020	13,462	15,078	16,887
interest payment	47,010	46,357	45,627	44,808	43,892	42,865	41,715	40,427	38,985	37,369	35,560
ending balance	386,312	380,222	373,402	365,763	357,208	347,626	336,894	324,874	311,412	296,334	279,447
Loan B											
starting balance outstanding	-	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-	-
Loan C											
starting balance outstanding	-	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-	-
Short-term notes repayment	159,782	-	-	39,945	-	-	-	-	-	-	-
Short-term interest payment	6,799	5,093	5,093	1,273	-	-	-	-	-	-	-
Total principle repayment	\$165,219	\$ 6,090	\$ 6,820	\$47,584	\$ 8,555	\$ 9,582	\$10,732	\$12,020	\$13,462	\$15,078	\$16,887
Total interest payment	\$ 53,809	\$51,450	\$50,720	\$46,081	\$43,892	\$42,865	\$41,715	\$40,427	\$38,985	\$37,369	\$35,560

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXVI (cont'd)

VANCOUVER

PRINCIPLE & INTEREST PAYMENTS
LOAN SCHEDULE

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Loan A											
starting balance outstanding	579,486	571,443	562,435	552,346	541,047	528,392	514,218	498,343	480,563	460,650	438,347
principle repayment	8,043	9,008	10,089	11,299	12,655	14,174	15,875	17,780	19,913	22,303	24,979
interest payment	69,538	68,573	67,492	66,282	64,926	63,407	61,706	59,801	57,668	55,278	52,602
ending balance	571,443	562,435	552,346	541,047	528,392	514,218	498,343	480,563	460,650	438,347	413,368
Loan B											
starting balance outstanding	-	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-	-
Loan C											
starting balance outstanding	-	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-	-
Short-term notes repayment	-	-	-	-	-	-	-	-	-	-	-
Short-term interest payment	-	-	-	-	-	-	-	-	-	-	-
<hr/>											
Total principle repayment	\$ 8,043	\$ 9,008	\$10,089	\$11,299	\$12,655	\$14,174	\$15,875	\$17,780	\$19,913	\$22,303	\$24,979
Total interest payment	\$69,538	\$68,573	\$67,492	\$66,282	\$64,926	\$63,407	\$61,706	\$59,801	\$57,668	\$55,278	\$52,602
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ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXVI (cont'd)

PRINCE GEORGE

PRINCIPLE & INTEREST PAYMENTS
LOAN SCHEDULE

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Loan A										
starting balance outstanding	421,970	416,113	409,554	402,207	393,979	384,763	374,442	362,882	349,935	335,434
principle repayment	5,857	6,559	7,347	8,228	9,216	10,321	11,560	12,947	14,501	16,241
interest payment	50,636	49,934	49,146	48,265	47,277	46,172	44,933	43,546	41,992	40,252
ending balance	416,113	409,554	402,207	393,979	384,763	374,442	362,882	349,935	335,434	319,193
Loan B										
starting balance outstanding	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-
Loan C										
starting balance outstanding	-	-	-	-	-	-	-	-	-	-
principle repayment	-	-	-	-	-	-	-	-	-	-
interest payment	-	-	-	-	-	-	-	-	-	-
ending balance	-	-	-	-	-	-	-	-	-	-
Short-term notes repayment	163,784	-	-	40,946	-	-	-	-	-	-
Short-term interest payment	6,970	5,221	5,221	1,305	-	-	-	-	-	-
Total principle repayment	\$169,641	\$ 6,559	\$ 7,347	\$49,174	\$ 9,216	\$10,321	\$11,560	\$12,947	\$14,501	\$16,241
Total interest payment	\$ 57,606	\$55,155	\$54,367	\$49,570	\$47,277	\$46,172	\$44,933	\$43,546	\$41,992	\$40,252

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

8.3.3 Financial Statement Analysis

8.3.2.1 The income statements are detailed in Table XXVII.

9.3.2.2 Table XXVIII describes the profit margins derived from the fifth year of operations.

TABLE XXVIII
OPERATING STATEMENT MARGINS
(5TH YEAR, \$000's)

	W	B	S	N.B.	E	P.R.	V	P.G.
TOTAL SALES	1,713	1,713	1,713	1,713	1,713	1,713	1,173	1,173
COST OF GOODS	1,376	1,380	1,384	1,397	1,369	1,408	1,400	1,410
GROSS MARGIN	\$ 337 % 19.7%	333 19.4%	329 19.2%	316 18.4%	344 20.1%	305 17.8%	313 18.3%	303 17.7%
GENERAL COSTS	274	273	270	264	260	258	226	253
NET PROFIT	\$ 63 % 3.7%	60 3.5%	59 3.4%	52 3.0%	84 4.9%	47 2.7%	87 5.1%	50 2.9%

TABLE XXVII continued

BRANDON

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Selling & Advertising										
salaries	-	-	-	-	-	-	-	-	-	-
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>
Other Expenses										
insurance	2,770	2,770	2,770	2,770	2,770	2,770	2,770	2,770	2,770	2,770
municipal tax	2,970	2,970	2,970	2,970	2,970	2,970	2,970	2,970	2,970	2,970
miscellaneous	-	-	-	-	-	-	-	-	-	-
net depreciation	65,705	65,705	65,705	65,705	65,705	65,705	65,705	65,705	65,705	65,705
interest	53,633	51,279	50,551	45,921	43,737	42,714	41,568	40,285	38,847	37,238
	<u>125,078</u>	<u>122,724</u>	<u>121,996</u>	<u>117,366</u>	<u>115,182</u>	<u>114,159</u>	<u>113,013</u>	<u>111,730</u>	<u>110,292</u>	<u>108,683</u>
Total Operating Costs	<u>985,737</u>	<u>1,281,313</u>	<u>1,592,056</u>	<u>1,587,426</u>	<u>1,585,242</u>	<u>1,584,219</u>	<u>1,583,073</u>	<u>1,581,790</u>	<u>1,580,352</u>	<u>1,578,743</u>
Operating Profit(Loss)	<u>\$(129,217)</u>	<u>\$ 3,467</u>	<u>\$ 120,984</u>	<u>\$ 125,614</u>	<u>\$ 127,798</u>	<u>\$ 128,821</u>	<u>\$ 129,967</u>	<u>\$ 131,250</u>	<u>\$ 132,688</u>	<u>\$ 134,297</u>
Manpower training assistance grant	-	-	-	-	-	-	-	-	-	-
Federal Taxes	<u>(70,097)</u>	<u>(4,908)</u>	<u>52,174</u>	<u>62,872</u>	<u>67,382</u>	<u>70,710</u>	<u>73,540</u>	<u>75,987</u>	<u>78,143</u>	<u>80,086</u>
Net Federal Taxes	<u>-</u>	<u>-</u>	<u>-</u>	<u>40,041</u>	<u>67,382</u>	<u>70,710</u>	<u>73,540</u>	<u>75,987</u>	<u>78,143</u>	<u>80,086</u>
NET PROFIT(LOSS)	<u>\$(129,217)</u>	<u>\$ 3,467</u>	<u>\$ 120,984</u>	<u>\$ 85,573</u>	<u>\$ 60,416</u>	<u>\$ 58,111</u>	<u>\$ 56,427</u>	<u>\$ 55,263</u>	<u>\$ 54,545</u>	<u>\$ 54,211</u>

TABLE XXVII (Cont'd)

SASKATOON

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Selling & Advertising										
salaries	-	-	-	-	-	-	-	-	-	-
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>
Other Expenses										
insurance	2,980	2,980	2,980	2,980	2,980	2,980	2,980	2,980	2,980	2,980
municipal tax	2,830	2,830	2,830	2,830	2,830	2,830	2,830	2,830	2,830	2,830
miscellaneous	-	-	-	-	-	-	-	-	-	-
net depreciation	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775
interest	55,551	53,163	52,405	47,724	45,496	44,431	43,239	41,904	40,409	38,735
	<u>127,136</u>	<u>124,748</u>	<u>123,990</u>	<u>119,309</u>	<u>117,081</u>	<u>116,016</u>	<u>114,824</u>	<u>113,489</u>	<u>111,994</u>	<u>110,320</u>
Total Operating Costs	<u>988,327</u>	<u>1,284,801</u>	<u>1,596,490</u>	<u>1,591,809</u>	<u>1,589,581</u>	<u>1,588,516</u>	<u>1,587,324</u>	<u>1,585,989</u>	<u>1,584,494</u>	<u>1,582,820</u>
Operating Profit(Loss)	<u>\$(131,807)</u>	<u>\$(21)</u>	<u>\$ 116,550</u>	<u>\$ 121,231</u>	<u>\$ 123,459</u>	<u>\$ 124,524</u>	<u>\$ 125,716</u>	<u>\$ 127,051</u>	<u>\$ 128,546</u>	<u>\$ 130,220</u>
	-	-	-	-	-	-	-	-	-	-
Federal Taxes										
Funded Tax Relief	(69,516)	(6,229)	49,124	59,608	64,025	67,289	70,069	72,479	74,608	76,532
	<u>-</u>	<u>-</u>	<u>-</u>	<u>32,987</u>	<u>64,025</u>	<u>67,289</u>	<u>70,069</u>	<u>72,479</u>	<u>74,608</u>	<u>76,532</u>
Net Federal Taxes	<u>-</u>	<u>-</u>	<u>-</u>	<u>32,987</u>	<u>64,025</u>	<u>67,289</u>	<u>70,069</u>	<u>72,479</u>	<u>74,608</u>	<u>76,532</u>
NET PROFIT (LOSS)	<u>\$(131,807)</u>	<u>\$(21)</u>	<u>\$ 116,550</u>	<u>\$ 88,244</u>	<u>\$ 59,434</u>	<u>\$ 57,235</u>	<u>\$ 55,647</u>	<u>\$ 54,572</u>	<u>\$ 53,938</u>	<u>\$ 53,688</u>

TABLE XXVII continued

NORTH BATTLEFORD

PRO-FORMA INCOME STATEMENT
(using constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Sales Revenue	\$ 856,520	\$1,284,780	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040
Cost of Goods										
substrate materials	633,325	886,655	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500	1,151,500
other materials	15,505	21,706	28,190	28,190	28,190	28,190	28,190	28,190	28,190	28,190
labour-direct	50,094	70,132	91,080	91,080	91,080	91,080	91,080	91,080	91,080	91,080
-indirect	29,128	30,527	31,990	31,990	31,990	31,990	31,990	31,990	31,990	31,990
services-waste disposal										
-electricity	18,139	25,395	32,980	32,980	32,980	32,980	32,980	32,980	32,980	32,980
-steam										
-water & other utilities	1,568	2,195	2,850	2,850	2,850	2,850	2,850	2,850	2,850	2,850
transportation	28,193	39,470	51,260	51,260	51,260	51,260	51,260	51,260	51,260	51,260
contracting & etc	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	779,973	1,081,709	1,397,160	1,397,160	1,397,160	1,397,160	1,397,160	1,397,160	1,397,160	1,397,160
Gross Profit(Loss)	\$ 76,547	\$ 203,071	\$ 315,880	\$ 315,880	\$ 315,880	\$ 315,880	\$ 315,880	\$ 315,880	\$ 315,880	\$ 315,880
General Administration										
salaries & wages	44,900	44,900	44,900	44,900	44,900	44,900	44,900	44,900	44,900	44,900
office costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
other	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
	55,900	55,900	55,900	55,900	55,900	55,900	55,900	55,900	55,900	55,900
Research & Quality Control										
salaries & wages	-	-	-	-	-	-	-	-	-	-
equipment, materials & overhead	-	-	-	-	-	-	-	-	-	-

TABLE XXVII continued

NORTH BATTLEFORD

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Selling & Advertising										
salaries	-	-	-	-	-	-	-	-	-	-
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>
Other Expenses										
insurance	3,380	3,380	3,380	3,380	3,380	3,380	3,380	3,380	3,380	3,380
municipal tax	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880	2,880
miscellaneous	-	-	-	-	-	-	-	-	-	-
net depreciation	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775
interest	53,537	51,177	50,451	45,804	43,615	42,595	41,453	40,173	38,740	37,134
	<u>125,572</u>	<u>123,212</u>	<u>122,486</u>	<u>117,839</u>	<u>115,650</u>	<u>114,630</u>	<u>113,488</u>	<u>112,208</u>	<u>110,775</u>	<u>109,169</u>
Total Operating Costs	<u>994,445</u>	<u>1,293,821</u>	<u>1,608,546</u>	<u>1,603,899</u>	<u>1,601,710</u>	<u>1,600,690</u>	<u>1,599,548</u>	<u>1,598,268</u>	<u>1,596,835</u>	<u>1,595,229</u>
Operating Profit(Loss)	<u>\$(137,925)</u>	<u>\$(9,041)</u>	<u>\$ 104,494</u>	<u>\$ 109,141</u>	<u>\$ 111,330</u>	<u>\$ 112,350</u>	<u>\$ 113,492</u>	<u>\$ 114,772</u>	<u>\$ 116,205</u>	<u>\$ 117,811</u>
Manpower training assistance grant	-	-	-	-	-	-	-	-	-	-
Federal Taxes	<u>(72,086)</u>	<u>(10,017)</u>	<u>44,060</u>	<u>54,530</u>	<u>58,931</u>	<u>62,176</u>	<u>64,935</u>	<u>67,321</u>	<u>69,424</u>	<u>71,320</u>
Net Federal Taxes	-	-	-	<u>16,487</u>	<u>58,931</u>	<u>62,176</u>	<u>64,935</u>	<u>67,321</u>	<u>69,424</u>	<u>71,320</u>
NET PROFIT (LOSS)	<u>\$(137,925)</u>	<u>\$(9,041)</u>	<u>\$ 104,494</u>	<u>\$ 92,654</u>	<u>\$ 52,399</u>	<u>\$ 50,174</u>	<u>\$ 48,557</u>	<u>\$ 47,451</u>	<u>\$ 46,781</u>	<u>\$ 46,491</u>

TABLE XXVII continued

EDMONTON

PRO-FORMA INCOME STATEMENT
(using constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Sales Revenue	\$ 856,520	\$1,284,780	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040
Cost of Goods										
substrate materials	630,630	882,882	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600
other materials	15,505	21,706	28,190	28,190	28,190	28,190	28,190	28,190	28,190	28,190
labour-direct	48,114	67,360	87,480	87,480	87,480	87,480	87,480	87,480	87,480	87,480
-indirect	29,491	31,035	32,650	32,650	32,650	32,650	32,650	32,650	32,650	32,650
services-waste disposal	-	-	-	-	-	-	-	-	-	-
-electricity	12,751	17,852	23,184	23,184	23,184	23,184	23,184	23,184	23,184	23,184
-steam	-	-	-	-	-	-	-	-	-	-
-water & other utilities	2,041	2,857	3,710	3,710	3,710	3,710	3,710	3,710	3,710	3,710
transportation	21,978	30,769	39,960	39,960	39,960	39,960	39,960	39,960	39,960	39,960
contracting & etc.	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	764,531	1,060,090	1,369,084	1,369,084	1,369,084	1,369,084	1,369,084	1,369,084	1,369,084	1,369,084
Gross Profit(Loss)	\$ 91,989	\$ 224,690	\$ 343,956	\$ 343,956	\$ 343,956	\$ 343,956	\$ 343,956	\$ 343,956	\$ 343,956	\$ 343,956
General Administration										
salaries & wages	45,550	45,550	45,550	45,550	45,550	45,550	45,550	45,550	45,550	45,550
office costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
other	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500
	56,050	56,050	56,050	56,050	56,050	56,050	56,050	56,050	56,050	56,050
Research & Quality Control										
salaries & wages	-	-	-	-	-	-	-	-	-	-
equipment, materials & overhead	-	-	-	-	-	-	-	-	-	-

TABLE XXVII (Cont'd)

EDMONTON

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Selling & Advertising										
salaries	-	-	-	-	-	-	-	-	-	-
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>
Other Expenses										
insurance	2,620	2,620	2,620	2,620	2,620	2,620	2,620	2,620	2,620	2,620
municipal tax	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350	2,350
miscellaneous	-	-	-	-	-	-	-	-	-	-
net depreciation	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684
interest	71,686	70,691	69,577	68,329	66,931	65,366	63,612	61,648	59,449	56,986
	<u>142,340</u>	<u>141,345</u>	<u>140,231</u>	<u>138,983</u>	<u>137,585</u>	<u>136,020</u>	<u>134,266</u>	<u>132,302</u>	<u>130,103</u>	<u>127,640</u>
Total Operating Costs	<u>995,921</u>	<u>1,290,485</u>	<u>1,598,365</u>	<u>1,597,117</u>	<u>1,595,719</u>	<u>1,594,154</u>	<u>1,592,400</u>	<u>1,590,436</u>	<u>1,588,237</u>	<u>1,585,774</u>
Operating Profit(Loss)	<u>\$ (139,401)</u>	<u>\$ (5,705)</u>	<u>\$ 114,675</u>	<u>\$ 115,923</u>	<u>\$ 117,321</u>	<u>\$ 118,886</u>	<u>\$ 120,640</u>	<u>\$ 122,604</u>	<u>\$ 124,803</u>	<u>\$ 127,266</u>
	-	-	-	-	-	-	-	-	-	-
Federal Taxes										
Funded Tax Relief	(84,085)	(18,901)	38,791	46,007	51,977	56,965	61,188	64,819	68,004	70,859
Net Federal Taxes	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>33,789</u>	<u>56,965</u>	<u>61,188</u>	<u>64,819</u>	<u>68,004</u>	<u>70,859</u>
NET PROFIT(LOSS)	<u>\$ (139,401)</u>	<u>\$ (5,705)</u>	<u>\$ 114,675</u>	<u>\$ 115,923</u>	<u>\$ 83,532</u>	<u>\$ 61,921</u>	<u>\$ 59,452</u>	<u>\$ 57,785</u>	<u>\$ 56,799</u>	<u>\$ 56,407</u>

TABLE XXVII

continued

PEACE RIVER

PRO-FORMA INCOME STATEMENT
(using constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Sales Revenue	\$ 856,520	\$ 1,284,780	\$ 1,713,040	\$ 1,713,040	\$ 1,713,040	\$ 1,713,040	\$ 1,713,040	\$ 1,713,040	\$ 1,713,040	\$ 1,713,040
Cost of Goods										
substrate materials	630,630	882,882	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600	1,146,600
other materials	15,505	21,706	28,190	28,190	28,190	28,190	28,190	28,190	28,190	28,190
labour-direct	48,114	67,360	87,480	87,480	87,480	87,480	87,480	87,480	87,480	87,480
-indirect	29,491	31,035	32,650	32,650	32,650	32,650	32,650	32,650	32,650	32,650
services-waste disposal	-	-	-	-	-	-	-	-	-	-
-electricity	23,700	33,179	43,090	43,090	43,090	43,090	43,090	43,090	43,090	43,090
-steam	-	-	-	-	-	-	-	-	-	-
-water & other utilities	2,047	2,865	3,720	3,720	3,720	3,720	3,720	3,720	3,720	3,720
transportation	32,401	45,361	58,910	58,910	58,910	58,910	58,910	58,910	58,910	58,910
contracting & mtc	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	785,909	1,090,017	1,407,950	1,407,950	1,407,950	1,407,950	1,407,950	1,407,950	1,407,950	1,407,950
Gross Profit(Loss)	\$ 70,611	\$ 194,763	\$ 305,090	\$ 305,090	\$ 305,090	\$ 305,090	\$ 305,090	\$ 305,090	\$ 305,090	\$ 305,090
General Administration										
salaries & wages	45,550	45,550	45,550	45,550	45,550	45,550	45,550	45,550	45,550	45,550
office costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
other	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
	56,550	56,550	56,550	56,550	56,550	56,550	56,550	56,550	56,550	56,550
Research & Quality Control										
salaries & wages	-	-	-	-	-	-	-	-	-	-
equipment, materials & overhead	-	-	-	-	-	-	-	-	-	-

TABLE XXVII continued

PEACE RIVER

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Selling & Advertising										
salaries	-	-	-	-	-	-	-	-	-	-
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>	<u>33,000</u>
Other Expenses										
insurance	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290
municipal tax	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300
miscellaneous	-	-	-	-	-	-	-	-	-	-
net depreciation	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684
interest	53,809	51,450	50,720	46,081	43,892	42,865	41,715	40,427	38,985	37,369
	<u>125,083</u>	<u>122,724</u>	<u>121,994</u>	<u>117,355</u>	<u>115,166</u>	<u>114,139</u>	<u>112,989</u>	<u>111,701</u>	<u>110,259</u>	<u>108,643</u>
Total Operating Costs	<u>1,000,542</u>	<u>1,302,291</u>	<u>1,619,494</u>	<u>1,614,855</u>	<u>1,612,666</u>	<u>1,611,639</u>	<u>1,610,489</u>	<u>1,609,201</u>	<u>1,607,759</u>	<u>1,606,143</u>
Operating Profit(Loss)	\$(144,022)	\$(17,511)	\$ 93,546	\$ 98,185	\$ 100,374	\$ 101,401	\$ 102,551	\$ 103,839	\$ 105,281	\$ 106,897
Manpower training assistance grant	-	-	-	-	-	-	-	-	-	-
Federal Taxes	(72,877)	(13,259)	38,513	48,718	53,015	56,186	58,883	61,215	63,271	65,125
Net Federal Taxes	-	-	-	1,095	53,015	56,186	58,883	61,215	63,271	65,125
NET PROFIT (LOSS)	\$(144,022)	\$(17,511)	\$ 93,546	\$ 97,090	\$ 47,359	\$ 45,215	\$ 43,668	\$ 42,624	\$ 42,010	\$ 41,772

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXVII

continued

VANCOUVER

PRO-FORMA INCOME STATEMENT
(using constant '7.8 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Sales Revenue	\$ 856,520	\$ 1,284,780	\$ 1,713,040	\$ 1,713,040	\$ 1,713,040	\$ 1,713,040	\$ 1,713,040	\$ 1,713,040	\$ 1,713,040	\$ 1,713,040
Cost of Goods										
substrate materials	636,020	890,428	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400
other materials	15,505	21,706	28,190	28,190	28,190	28,190	28,190	28,190	28,190	28,190
labour-direct	58,410	81,774	106,200	106,200	106,200	106,200	106,200	106,200	106,200	106,200
-indirect	33,420	35,268	37,200	37,200	37,200	37,200	37,200	37,200	37,200	37,200
services-waste disposal										
-electricity	11,594	16,232	21,080	21,080	21,080	21,080	21,080	21,080	21,080	21,080
-steam										
-water & other utilities	1,658	2,321	3,014	3,014	3,014	3,014	3,014	3,014	3,014	3,014
transportation	22,550	31,570	41,000	41,000	41,000	41,000	41,000	41,000	41,000	41,000
contracting & mtc	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	783,178	1,084,928	1,400,394	1,400,394	1,400,394	1,400,394	1,400,394	1,400,394	1,400,394	1,400,394
Gross Profit(Loss)	\$ 73,342	\$ 199,852	\$ 312,646	\$ 312,646	\$ 312,646	\$ 312,646	\$ 312,646	\$ 312,646	\$ 312,646	\$ 312,646
General Administration										
salaries & wages	43,680	43,680	43,680	43,680	43,680	43,680	43,680	43,680	43,680	43,680
office costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
other	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500
	54,180	54,180	54,180	54,180	54,180	54,180	54,180	54,180	54,180	54,180
Research & Quality Control										
salaries & wages	-	-	-	-	-	-	-	-	-	-
equip't, materials & overhead	-	-	-	-	-	-	-	-	-	-

TABLE XXVII continued

VANCOUVER

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Selling & Advertising										
salaries	-	-	-	-	-	-	-	-	-	-
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000
Other Expenses										
insurance	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800
municipal tax	4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940	4,940
miscellaneous	-	-	-	-	-	-	-	-	-	-
net depreciation	65,955	65,955	65,955	65,955	65,955	65,955	65,955	65,955	65,955	65,955
interest	69,538	68,573	67,492	66,282	64,926	63,407	61,706	59,801	57,668	55,278
	143,233	142,268	141,187	139,977	138,621	137,102	135,401	133,496	131,363	128,973
Total Operating Costs	1,013,591	1,314,376	1,628,761	1,627,551	1,626,195	1,624,676	1,622,975	1,621,070	1,618,937	1,616,547
Operating Profit(Loss)	\$(157,071)	\$(29,596)	\$ 84,279	\$ 85,489	\$ 86,845	\$ 88,364	\$ 90,065	\$ 91,970	\$ 94,103	\$ 96,493
Manpower training assistance grant	-	-	-	-	-	-	-	-	-	-
Federal Taxes	(93,670)	(29,481)	26,909	34,306	40,422	45,528	49,846	53,553	56,798	59,702
Net Federal Taxes	-	-	-	-	-	24,014	49,846	53,553	56,798	59,702
NET PROFIT(LOSS)	\$(157,071)	\$(29,596)	\$ 84,279	\$ 85,489	\$ 86,845	\$ 64,350	\$ 40,219	\$ 38,417	\$ 37,305	\$ 36,791

TABLE XXVII continued
PRINCE GEORGE

PRO-FORMA INCOME STATEMENT
(using constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Sales Revenue	\$ 856,520	\$1,284,780	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040	\$1,713,040
Cost of Goods										
substrate materials	636,020	890,428	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400	1,156,400
other materials	15,505	21,706	28,190	28,190	28,190	28,190	28,190	28,190	28,190	28,190
labour-direct	58,410	81,774	106,200	106,200	106,200	106,200	106,200	106,200	106,200	106,200
-indirect	33,420	35,268	37,200	37,200	37,200	37,200	37,200	37,200	37,200	37,200
services-waste disposal	-	-	-	-	-	-	-	-	-	-
-electricity	11,594	16,232	21,080	21,080	21,080	21,080	21,080	21,080	21,080	21,080
-steam	-	-	-	-	-	-	-	-	-	-
-water & other utilities	1,959	2,741	3,560	3,560	3,560	3,560	3,560	3,560	3,560	3,560
transportation	27,709	38,793	50,380	50,380	50,380	50,380	50,380	50,380	50,380	50,380
contracting & mtc	4,021	5,629	7,310	7,310	7,310	7,310	7,310	7,310	7,310	7,310
	788,638	1,092,571	1,410,320	1,410,320	1,410,320	1,410,320	1,410,320	1,410,320	1,410,320	1,410,320
Gross Profit(Loss)	\$ 67,882	\$ 192,209	\$ 302,720	\$ 302,720	\$ 302,720	\$ 302,720	\$ 302,720	\$ 302,720	\$ 302,720	\$ 302,720
General Administration										
salaries & wages	43,680	43,680	43,680	43,680	43,680	43,680	43,680	43,680	43,680	43,680
office costs	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
other	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
	54,680	54,680	54,680	54,680	54,680	54,680	54,680	54,680	54,680	54,680
Research & Quality Control										
salaries & wages	-	-	-	-	-	-	-	-	-	-
equipment, materials & overhead	-	-	-	-	-	-	-	-	-	-

TABLE XXVII continued

PRINCE GEORGE

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Selling & Advertising										
salaries	-	-	-	-	-	-	-	-	-	-
promotion	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
other expenses	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000
Other Expenses										
insurance	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200	3,200
municipal tax	2,970	2,970	2,970	2,970	2,970	2,970	2,970	2,970	2,970	2,970
miscellaneous	-	-	-	-	-	-	-	-	-	-
net depreciation	66,160	66,160	66,160	66,160	66,160	66,160	66,160	66,160	66,160	66,160
interest	57,606	55,155	54,367	49,570	47,277	46,172	44,933	43,546	41,992	40,252
	129,936	127,485	126,697	121,900	119,607	118,502	117,263	115,876	114,322	112,582
Total Operating Costs	1,006,254	1,307,736	1,624,697	1,619,900	1,617,607	1,616,502	1,615,263	1,613,876	1,612,322	1,610,582
Operating Profit(Loss)	\$(149,734)	\$(22,956)	\$ 88,343	\$ 93,140	\$ 95,433	\$ 96,538	\$ 97,777	\$ 99,164	\$ 100,718	\$ 102,458
Manpower training assistance grant	-	-	-	-	-	-	-	-	-	-
Federal Taxes	(76,918)	(15,753)	37,372	47,969	52,395	55,662	58,454	60,880	63,031	64,982
Net Federal Taxes	-	-	-	-	45,065	55,662	58,454	60,880	63,031	64,982
NET PROFIT (LOSS)	\$(149,734)	\$(22,956)	\$ 88,343	\$ 93,140	\$ 50,368	\$ 40,876	\$ 39,323	\$ 38,284	\$ 37,687	\$ 37,476

8.3.2.3 The pro forma balance sheet statements are presented in Table XXIX.

8.3.2.4 The cash flow statements are presented in Table XXX. Working capital is selected to ensure a positive cash flow.

8.3.2.5 Table XXXI compares the cumulative net cash positions for years one through five and ten.

8.3.2.6 Table XXXII compares the various internal rates of returns (IRR).

TABLE XXXII
INTERNAL RATES OF RETURN

LOCATION	W	B	S	N.B.	E	P.R	V	P.G.
IRR %	14.42	13.98	13.22	11.72	7.36	10.15	2.3	7.94

TABLE XXXI

CUMULATIVE CASH FLOW FROM OPERATIONS
(1978 \$000's)

LOCATION	YEAR					
	1	2	3	4	5	10
W	(155)	(133)	6	151	273	830
B	(157)	(138)	(3)	144	263	809
S	(160)	(145)	(14)	135	254	796
NB	(165)	(159)	(41)	111	224	733
E	(170)	(167)	(38)	132	271	802
PR	(172)	(174)	(67)	88	196	679
V	(188)	(205)	(110)	30	170	629
PG	(178)	(186)	(84)	67	178	635

TABLE XXIX

BRANDON

PRD-FORMA BALANCE SHEET
(using constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
ASSETS										
Current										
cash	18,056	36,908	172,161	319,164	439,038	553,584	665,257	774,452	881,467	986,521
accounts receivable	71,377	107,065	142,753	142,753	142,753	142,753	142,753	142,753	142,753	142,753
inventory	83,367	115,860	149,829	149,829	149,829	149,829	149,829	149,829	149,829	149,829
Current Assets Total	172,800	259,833	464,743	611,746	731,620	846,166	957,839	1,067,034	1,174,049	1,279,103
Fixed										
land	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
building/equipment	706,230	706,230	706,230	706,230	706,230	706,230	706,230	706,230	706,230	706,230
accumulated depreciation	65,705	131,410	197,115	262,820	328,525	394,230	459,935	525,640	591,345	657,050
net bldg/equip'mt	640,525	574,820	509,115	443,410	377,705	312,000	246,295	180,590	114,885	49,180
Fixed Assets Total	643,525	577,820	512,115	446,410	380,705	315,000	249,295	183,590	117,885	52,180
TOTAL ASSETS	\$816,325	\$837,653	\$976,858	\$1,058,156	\$1,112,325	\$1,161,166	\$1,207,134	\$1,250,624	\$1,291,934	\$1,331,283

TABLE XXIX continued

BRANDON

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
LIABILITIES										
Current										
accounts payable	62,042	85,201	109,413	109,413	109,413	109,413	109,413	109,413	109,413	109,413
notes payable-long term loan	6,068	6,796	7,612	8,525	9,548	10,694	11,977	13,415	15,024	16,827
-other & bridge loan	-	-	39,883	-	-	-	-	-	-	-
wages	4,688	5,458	6,263	6,263	6,263	6,263	6,263	6,263	6,263	6,263
federal taxes	-	-	-	3,337	5,615	5,893	6,128	6,332	6,512	6,674
Current Liab's Total	72,798	97,455	163,171	127,538	130,839	132,263	133,781	135,423	137,212	139,177
Long Term										
long term loan	378,880	372,084	364,472	355,947	346,399	335,705	323,728	310,313	295,289	278,462
other & bridge loan	39,883	39,883	-	-	-	-	-	-	-	-
Long Term Total	418,763	411,967	364,472	355,947	346,399	335,705	323,728	310,313	295,289	278,462
Shareholders' Equity										
capital stock	294,449	294,449	294,449	294,449	294,449	294,449	294,449	294,449	294,449	294,449
DFEE	159,532	159,532	159,532	199,415	199,415	199,415	199,415	199,415	199,415	199,415
retained earnings	(129,217)	(125,750)	(4,766)	80,807	141,223	199,334	255,761	311,024	365,569	419,780
Equity & R/E Total	324,764	328,231	449,215	574,671	635,087	693,198	749,625	804,888	859,433	913,644
TOTAL LIABILITIES	\$816,325	\$837,653	\$976,858	\$1,058,156	\$1,112,325	\$1,161,166	\$1,207,134	\$1,250,624	\$1,291,934	\$1,331,283

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIX (Cont'd)

SASKATOON

PRO-FORMA BALANCE SHEET
(using constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
ASSETS										
Current										
cash	15,154	30,311	160,893	309,743	428,670	542,019	652,548	760,636	866,571	970,566
accounts receivable	71,377	107,065	142,753	142,753	142,753	142,753	142,753	142,753	142,753	142,753
inventory	83,482	116,021	150,038	150,038	150,038	150,038	150,038	150,038	150,038	150,038
Current Assets Total	170,013	253,397	453,684	602,534	721,461	834,810	945,339	1,053,427	1,159,362	1,263,357
Fixed										
land	26,660	26,660	26,660	26,660	26,660	26,660	26,660	26,660	26,660	26,660
buildings/equipment	707,610	707,610	707,610	707,610	707,610	707,610	707,610	707,610	707,610	707,610
accumulated depreciation	65,775	131,550	197,325	263,100	328,875	394,650	460,425	526,200	591,975	657,750
net bldg/equip'mt	641,835	576,060	510,285	444,510	378,735	312,960	247,185	181,410	115,635	49,860
Fixed Assets Total	668,495	602,720	536,945	471,170	405,395	339,620	273,845	208,070	142,295	76,520
TOTAL ASSETS	\$838,508	\$856,117	\$990,629	\$1,073,704	\$1,126,856	\$1,174,430	\$1,219,184	\$1,261,497	\$1,301,657	\$1,339,877

TABLE XXIX (Cont'd)

SASKATOON

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
LIABILITIES										
Current										
accounts payable	61,907	85,025	109,195	109,195	109,195	109,195	109,195	109,195	109,195	109,195
notes payable-long term loan	6,312	7,070	7,918	8,868	9,933	11,125	12,460	13,955	15,629	17,505
-other & bridge loan	-	-	40,083	-	-	-	-	-	-	-
wages	4,774	5,598	6,460	6,460	6,460	6,460	6,460	6,460	6,460	6,460
federal taxes	-	-	-	2,749	5,335	5,607	5,839	6,040	6,217	6,378
Current Liab's Total	72,993	97,693	163,656	127,272	130,923	132,387	133,954	135,650	137,501	139,538
Long Term										
long term loan	394,118	387,048	379,130	370,262	360,329	349,204	336,744	322,789	307,160	289,655
other & bridge loan	40,083	40,083	-	-	-	-	-	-	-	-
Long Term Total	434,201	427,131	379,130	370,262	360,329	349,204	336,744	322,789	307,160	289,655
Shareholders' Equity										
capital stock	302,787	302,787	302,787	302,787	302,787	302,787	302,787	302,787	302,787	302,787
DREE	160,334	160,334	160,334	200,417	200,417	200,417	200,417	200,417	200,417	200,417
retained earnings	(131,807)	(131,828)	(15,278)	72,966	132,400	189,635	245,282	299,854	353,792	407,480
Equity & R/E Total	331,314	331,293	447,843	576,170	635,604	692,839	748,486	803,058	856,996	910,684
TOTAL LIABILITIES	\$838,508	\$856,117	\$990,629	\$1,073,704	\$1,126,856	\$1,174,430	\$1,219,184	\$1,261,497	\$1,301,657	\$1,339,877

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIX
NORTH BATTLEFORD

PRO-FORMA BALANCE SHEET
(using constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
ASSETS										
Current										
cash	9,347	15,747	134,565	286,777	399,986	506,683	610,581	712,062	811,416	908,857
accounts receivable	71,377	107,065	142,753	142,753	142,753	142,753	142,753	142,753	142,753	142,753
inventory	84,081	116,859	151,127	151,127	151,127	151,127	151,127	151,127	151,127	151,127
Current Assets Total	164,805	239,671	428,445	580,657	693,866	800,563	904,461	1,005,942	1,105,296	1,202,737
Fixed										
land	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
buildings/equipment	707,610	707,610	707,610	707,610	707,610	707,610	707,610	707,610	707,610	707,610
accumulated depreciation	65,775	131,550	197,325	263,100	328,875	394,650	460,425	526,200	591,975	657,750
net bldg/equipment	641,835	576,060	510,285	444,510	378,735	312,960	247,185	181,410	115,635	49,860
Fixed Assets Total	643,335	577,560	511,785	446,010	380,235	314,460	248,685	182,910	117,135	51,360
TOTAL ASSETS	\$808,140	\$817,231	\$940,230	\$1,026,667	\$1,074,101	\$1,115,023	\$1,153,146	\$1,188,852	\$1,222,431	\$1,254,097

TABLE XXIX continued

NORTH BATTLEFORD

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
LIABILITIES										
Current										
accounts payable	62,584	85,943	110,363	110,363	110,363	110,363	110,363	110,363	110,363	110,363
notes payable-long term loan	6,051	6,777	7,591	8,502	9,522	10,664	11,944	13,377	14,983	16,781
-other & bridge loan	-	-	40,083	-	-	-	-	-	-	-
wages	4,774	5,598	6,460	6,460	6,460	6,460	6,460	6,460	6,460	6,460
federal taxes	-	-	-	1,374	4,911	5,181	5,411	5,610	5,785	5,943
Current Liab's Total	73,409	98,318	164,497	126,699	131,256	132,668	134,178	135,810	137,591	139,547
Long Term										
long term loan	377,830	371,053	363,462	354,960	345,438	334,774	322,830	309,453	294,470	277,689
other & bridge loan	40,083	40,083	-	-	-	-	-	-	-	-
Long Term Total	417,913	411,136	363,462	354,960	345,438	334,774	322,830	309,453	294,470	277,689
Shareholders' Equity										
capital stock	294,409	294,409	294,409	294,409	294,409	294,409	294,409	294,409	294,409	294,409
IRRE	160,334	160,334	160,334	200,417	200,417	200,417	200,417	200,417	200,417	200,417
retained earnings	(137,925)	(146,966)	(42,472)	50,182	102,581	152,755	201,312	248,763	295,544	342,035
Equity & R/E Total	316,818	307,777	412,271	545,008	597,407	647,581	696,138	743,589	790,370	836,861
TOTAL LIABILITIES	\$808,140	\$817,231	\$940,230	\$1,026,667	\$1,074,101	\$1,115,023	\$1,153,146	\$1,188,852	\$1,222,431	\$1,254,097

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIX

EDMONTON

PRO-FORMA BALANCE SHEET
(using constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
ASSETS										
Current										
cash	49,920	56,390	181,739	351,698	490,684	605,609	714,732	820,175	922,395	1,021,733
accounts receivable	71,377	107,065	142,753	142,753	142,753	142,753	142,753	142,753	142,753	142,753
inventory	82,715	114,946	148,643	148,643	148,643	148,643	148,643	148,643	148,643	148,643
Current Assets Total	204,012	278,401	473,135	643,094	782,080	897,005	1,006,128	1,111,571	1,213,791	1,313,129
Fixed										
land	69,620	69,620	69,620	69,620	69,620	69,620	69,620	69,620	69,620	69,620
buildings/equipment	706,020	706,020	706,020	706,020	706,020	706,020	706,020	706,020	706,020	706,020
accumulated depreciation	65,684	131,368	197,052	262,736	328,420	394,104	459,788	525,472	591,156	656,840
net bldg/equip'nt	640,336	574,652	508,968	443,284	377,600	311,916	246,232	180,548	114,864	49,180
Fixed Assets Total	709,956	644,272	578,588	512,904	447,220	381,536	315,852	250,168	184,484	118,800
TOTAL ASSETS	\$913,968	\$922,673	\$1,051,723	\$1,155,998	\$1,229,300	\$1,278,541	\$1,321,980	\$1,361,739	\$1,398,275	\$1,431,929

TABLE XXIX (Cont'd)

EDMONTON

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
LIABILITIES										
Current										
accounts payable	61,283	84,180	108,119	108,119	108,119	108,119	108,119	108,119	108,119	108,119
notes payable-long term loan	9,286	10,400	11,648	13,046	14,611	16,365	18,329	20,528	22,991	25,750
	-	-	-	-	-	-	-	-	-	-
wages	4,737	5,536	6,372	6,372	6,372	6,372	6,372	6,372	6,372	6,372
federal taxes	-	-	-	-	2,816	4,747	5,099	5,402	5,667	5,905
Current Liab's Total	75,306	100,116	126,139	127,537	131,918	135,603	137,919	140,421	143,149	146,146
Long Term										
long term loan	579,807	569,407	557,759	544,713	530,102	513,737	495,408	474,880	451,889	426,139
	-	-	-	-	-	-	-	-	-	-
Long Term Total	579,807	569,407	557,759	544,713	530,102	513,737	495,408	474,880	451,889	426,139
Shareholders' Equity										
capital stock	398,256	398,256	398,256	398,256	398,256	398,256	398,256	398,256	398,256	398,256
DREE	-	-	-	-	-	-	-	-	-	-
retained earnings	(139,401)	(145,106)	(30,431)	85,492	149,024	230,945	290,397	348,182	404,981	461,388
Equity I/R/E Total	258,855	253,150	367,825	483,748	567,280	629,201	688,653	746,438	803,237	859,644
TOTAL LIABILITIES	\$913,968	\$922,673	\$1,051,723	\$1,155,998	\$1,229,300	\$1,278,541	\$1,321,980	\$1,361,739	\$1,398,275	\$1,431,929

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIX

PEACE RIVER

PRO-FORMA BALANCE SHEET
(using constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
ASSETS										
Current										
cash	3,247	1,107	108,906	264,132	372,947	474,528	573,373	669,855	764,259	856,791
accounts receivable	71,377	107,065	142,753	142,753	142,753	142,753	142,753	142,753	142,753	142,753
inventors	84,496	117,440	151,882	151,882	151,882	151,882	151,882	151,882	151,882	151,882
Current Assets Total	159,120	225,612	403,541	558,767	667,582	769,163	868,008	964,490	1,058,894	1,151,426
Fixed										
land	5,750	5,750	5,750	5,750	5,750	5,750	5,750	5,750	5,750	5,750
buildings/equipment	706,020	706,020	706,020	706,020	706,020	706,020	706,020	706,020	706,020	706,020
accumulated depreciation	65,684	131,368	197,052	262,736	328,420	394,104	459,788	525,472	591,156	656,840
net bldg/equipmt	640,336	574,652	508,968	443,284	377,600	311,916	246,232	180,548	114,864	49,180
Fixed Assets Total	646,086	580,402	514,718	449,034	383,350	317,666	251,982	186,298	120,614	54,930
TOTAL ASSETS	\$805,206	\$806,014	\$918,259	\$1,007,801	\$1,050,932	\$1,086,829	\$1,119,990	\$1,150,788	\$1,179,508	\$1,206,356

TABLE XXIX continued

PEACE RIVER

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
LIABILITIES										
Current										
accounts payable	63,158	86,768	111,451	111,451	111,451	111,451	111,451	111,451	111,451	111,451
notes payable-long term loan	6,090	6,820	7,639	8,555	9,582	10,732	12,020	13,462	15,078	16,887
-other & bridge loan	-	-	39,945	-	-	-	-	-	-	-
wages	4,737	5,536	6,372	6,372	6,372	6,372	6,372	6,372	6,372	6,372
federal taxes	-	-	-	91	4,418	4,682	4,907	5,101	5,273	5,427
Current Liab's Total	73,985	99,124	165,407	126,469	131,823	133,237	134,750	136,386	138,174	140,137
Long Term										
long term loan	380,222	373,402	365,763	357,208	347,626	336,894	324,874	311,412	296,334	279,447
other & bridge loan	39,945	39,945	-	-	-	-	-	-	-	-
Long Term Total	420,167	413,347	365,763	357,208	347,626	336,894	324,874	311,412	296,334	279,447
Shareholders' Equity										
capital stock	295,294	295,294	295,294	295,294	295,294	295,294	295,294	295,294	295,294	295,294
R/E	159,782	159,782	159,782	199,727	199,727	199,727	199,727	199,727	199,727	199,727
retained earnings	(144,022)	(161,533)	(67,987)	29,103	76,462	121,677	165,345	207,969	249,979	291,751
Equity & R/E Total	311,054	293,543	387,089	524,124	571,383	616,698	660,366	702,990	745,000	786,772
TOTAL LIABILITIES										
	\$805,206	\$806,014	\$918,259	\$1,007,801	\$1,050,932	\$1,086,829	\$1,119,990	\$1,150,788	\$1,179,508	\$1,206,356

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIX

VANCOUVER

PRO-FORMA BALANCE SHEET
(using constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
ASSETS										
Current										
cash	32,131	14,998	110,259	250,404	390,549	508,681	601,133	688,034	771,651	852,336
accounts receivable	71,377	107,065	142,753	142,753	142,753	142,753	142,753	142,753	142,753	142,753
inventory	84,427	117,238	151,540	151,540	151,540	151,540	151,540	151,540	151,540	151,540
Current Assets Total	187,935	239,301	404,552	544,697	684,842	802,974	895,426	982,327	1,065,944	1,146,629
Fixed										
land	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000	35,000
building/equipment	710,810	710,810	710,810	710,810	710,810	710,810	710,810	710,810	710,810	710,810
accumulated depreciation	65,955	131,910	197,865	263,820	329,775	395,730	461,685	527,640	593,595	659,550
net bldg/equip'mt	644,855	578,900	512,945	446,990	381,035	315,080	249,125	183,170	117,215	51,260
Fixed Assets Total	679,855	613,900	547,945	481,990	416,035	350,080	284,125	218,170	152,215	86,260
TOTAL ASSETS										
	\$867,790	\$853,201	\$952,497	\$1,026,687	\$1,100,877	\$1,153,054	\$1,179,551	\$1,200,497	\$1,218,159	\$1,232,889

TABLE XXIX continued

VANCOUVER

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
LIABILITIES										
Current										
accounts payable	61,882	84,927	109,020	109,020	109,020	109,020	109,020	109,020	109,020	109,020
notes payable-	9,008	10,089	11,299	12,655	14,174	15,875	17,780	19,913	22,303	24,979
-other & bridge loan	-	-	-	-	-	-	-	-	-	-
wages	5,212	6,182	7,195	7,195	7,195	7,195	7,195	7,195	7,195	7,195
federal taxes	-	-	-	-	-	2,001	4,154	4,463	4,733	4,975
Current Liab's Total	76,102	101,198	127,514	128,870	130,389	134,091	138,149	140,591	143,251	146,169
Long Term										
other & bridge loan	-	-	-	-	-	-	-	-	-	-
Long Term Total	562,435	552,346	541,047	528,392	514,218	498,343	480,563	460,650	438,347	413,368
Shareholders' Equity										
capital stock	386,324	386,324	386,324	386,324	386,324	386,324	386,324	386,324	386,324	386,324
RESERVE	-	-	-	-	-	-	-	-	-	-
retained earnings	(157,071)	(186,667)	(102,388)	(16,899)	69,946	134,296	174,515	212,932	250,237	287,028
Equity & R/E Total	229,253	199,657	283,936	369,425	456,270	520,620	560,839	599,256	636,561	673,352
TOTAL LIABILITIES	\$867,790	\$853,201	\$952,497	\$1,026,687	\$1,100,877	\$1,153,054	\$1,179,551	\$1,200,497	\$1,218,159	\$1,232,889

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXIX

PRINCE GEORGE

PRO-FORMA BALANCE SHEET
(using constant '78 \$C)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
ASSETS										
Current										
cash	21,770	13,931	116,202	267,274	378,341	475,940	570,095	661,794	751,320	938,877
accounts receivable	71,377	107,065	142,753	142,753	142,753	142,753	142,753	142,753	142,753	142,753
inventory	84,882	117,875	152,368	152,368	152,368	152,368	152,368	152,368	152,368	152,368
Current Assets Total	178,029	238,871	411,323	562,395	673,462	771,061	865,216	956,915	1,046,441	1,133,998
Fixed										
land	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
buildings/equipment	714,580	714,580	714,580	714,580	714,580	714,580	714,580	714,580	714,580	714,580
accumulated depreciation	66,160	132,320	198,480	264,640	330,800	396,960	463,120	529,280	595,440	661,600
net bldg/equip'mt	648,420	582,260	516,100	449,940	383,780	317,620	251,460	185,300	119,140	52,980
Fixed Assets Total	673,420	607,260	541,100	474,940	408,780	342,620	276,460	210,300	144,140	77,980
TOTAL ASSETS	\$851,449	\$846,131	\$952,423	\$1,037,335	\$1,082,242	\$1,113,681	\$1,141,676	\$1,167,215	\$1,190,581	\$1,211,978

TABLE XXIX
PRINCE GEORGE

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
LIABILITIES										
Current										
accounts payable	62,248	85,475	109,758	109,758	109,758	109,758	109,758	109,758	109,758	109,758
notes payable-long term loan	6,559	7,347	8,228	9,216	10,321	11,560	12,947	14,501	16,241	18,190
-other & bridge loan	-	-	40,946	-	-	-	-	-	-	-
wages	5,212	6,182	7,195	7,195	7,195	7,195	7,195	7,195	7,195	7,195
federal taxes	-	-	-	-	3,755	4,639	4,871	5,073	5,253	5,415
Current Liab's Total	74,019	99,004	166,127	126,169	131,029	133,152	134,771	136,527	138,447	140,558
Long Term										
long term loan	409,554	402,207	393,979	384,763	374,442	362,882	349,935	335,434	319,193	301,003
other & bridge loan	40,946	40,946	-	-	-	-	-	-	-	-
Long Term Total	450,500	443,153	393,979	384,763	374,442	362,882	349,935	335,434	319,193	301,003
Shareholders' Equity										
capital stock	312,880	312,880	312,880	312,880	312,880	312,880	312,880	312,880	312,880	312,880
PAID	163,784	163,784	163,784	204,730	204,730	204,730	204,730	204,730	204,730	204,730
retained earnings	(149,734)	(172,690)	(84,347)	8,793	59,161	100,037	139,360	177,644	215,331	252,807
Equity & R/E Total	326,930	303,974	392,317	526,403	576,771	617,647	656,970	695,254	732,941	770,417
TOTAL LIABILITIES	\$851,449	\$846,131	\$952,423	\$1,037,335	\$1,082,242	\$1,113,681	\$1,141,676	\$1,167,215	\$1,190,581	\$1,211,978

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXX

BRANDON

PRO-FORMA CASH FLOW

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
CASH at beginning of period	\$ 175,000	\$18,056	\$ 36,908	\$172,161	\$319,164	\$439,038	\$553,584	\$665,257	\$774,452	\$881,467
SOURCES										
From operations	(129,217)	3,467	120,984	85,573	60,416	58,111	56,427	55,263	54,545	54,211
Non cash expense (deprec.)	65,705	65,705	65,705	65,705	65,705	65,705	65,705	65,705	65,705	65,705
Increased acc'ts payable	62,042	23,159	24,212	-	-	-	-	-	-	-
Increased charges payable	4,688	770	805	-	-	-	-	-	-	-
Increased fed'l taxes payable	-	-	-	3,337	2,278	278	235	204	180	162
Increased debt/equity	159,532	-	-	39,883	-	-	-	-	-	-
TOTAL Sources	\$ 162,750	\$93,101	\$211,706	\$194,498	\$128,399	\$124,094	\$122,367	\$121,172	\$120,430	\$120,078
APPLICATIONS										
Non recovered cash expense	-	-	-	-	-	-	-	-	-	-
Increased accounts receivable	71,377	35,688	35,688	-	-	-	-	-	-	-
Increased inventory	83,367	32,493	33,969	-	-	-	-	-	-	-
Debt repayment	164,950	6,068	6,796	47,495	8,525	9,548	10,694	11,977	13,415	15,024
TOTAL Applications	\$ 319,694	\$74,249	\$ 76,453	\$ 47,495	\$ 8,525	\$ 9,548	\$ 10,694	\$ 11,977	\$ 13,415	\$ 15,024
CASH at end of period	18,056	36,908	172,161	319,164	439,038	553,584	665,257	774,452	881,467	986,521
NET CASH FLOW	\$(156,944)	\$18,852	\$135,253	\$147,003	\$119,874	\$114,546	\$111,673	\$109,195	\$107,015	\$105,054

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXX

SASKATOON

PRD-FORMA CASH FLOW

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
CASH at beginning of period	\$ 175,000	\$15,154	\$ 30,311	\$160,893	\$309,743	\$428,670	\$542,019	\$652,548	\$760,636	\$866,571
SOURCES										
From operations	(131,807)	(21)	116,550	88,244	59,434	57,235	55,647	54,572	53,938	53,688
Non cash expense (deprec.)	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775
Increased acc'ts payable	61,907	23,118	24,170	-	-	-	-	-	-	-
Increased charges payable	4,774	824	862	-	-	-	-	-	-	-
Increased fed'l taxes payable	-	-	-	2,749	2,586	272	232	201	177	161
Increased debt/equity	160,334	-	-	40,083	-	-	-	-	-	-
TOTAL Sources	\$ 160,983	\$89,696	\$207,357	\$196,851	\$127,795	\$123,282	\$121,654	\$120,548	\$119,890	\$119,624
APPLICATIONS										
Non recovered cash expense	-	-	-	-	-	-	-	-	-	-
Increased accounts receivable	71,377	35,688	35,688	-	-	-	-	-	-	-
Increased inventory	83,482	32,539	34,017	-	-	-	-	-	-	-
Debt repayment	165,970	6,312	7,070	48,001	8,868	9,933	11,125	12,460	13,955	15,629
TOTAL Applications	\$ 320,829	\$74,539	\$ 76,775	\$ 48,001	\$ 8,868	\$ 9,933	\$ 11,125	\$ 12,460	\$ 13,955	\$ 15,629
CASH at end of period	15,154	30,311	160,893	309,743	428,670	542,019	652,548	760,636	866,571	970,566
NET CASH FLOW	\$(159,846)	\$15,157	\$130,582	\$148,850	\$118,927	\$113,349	\$110,529	\$108,088	\$105,935	\$103,995

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXX
NORTH BATTLEFORD

PRO-FORMA CASH FLOW

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
CASH at beginning of period	\$ 175,000	\$ 9,347	\$ 15,747	\$134,565	\$286,777	\$399,986	\$506,683	\$610,581	\$712,062	\$811,416
SOURCES										
From operations	(137,925)	(9,041)	104,494	92,654	52,399	50,174	48,557	47,451	46,781	46,491
Non cash expense(deprec.)	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775	65,775
Increased acc'ts payable	62,584	23,359	24,420	-	-	-	-	-	-	-
Increased charges payable	4,774	824	862	-	-	-	-	-	-	-
Increased fed'l taxes payable	-	-	-	1,374	3,537	270	230	199	175	158
Increased debt/equity	160,334	-	-	40,083	-	-	-	-	-	-
TOTAL Sources	\$ 155,542	\$80,917	\$195,551	\$199,886	\$121,711	\$116,219	\$114,562	\$113,425	\$112,731	\$112,424
APPLICATIONS										
Non recovered cash expense	-	-	-	-	-	-	-	-	-	-
Increased accounts receivable	71,377	35,688	35,688	-	-	-	-	-	-	-
Increased inventory	84,081	32,778	34,268	-	-	-	-	-	-	-
Debt repayment	165,737	6,051	6,777	47,674	8,502	9,522	10,664	11,944	13,377	14,983
TOTAL Applications	\$ 321,195	\$74,517	\$ 76,733	\$ 47,674	\$ 8,502	\$ 9,522	\$ 10,664	\$ 11,944	\$ 13,377	\$ 14,983
CASH at end of period	9,347	15,747	134,565	286,777	399,986	506,683	610,581	712,062	811,416	908,857
NET CASH FLOW	\$(165,653)	\$ 6,400	\$118,818	-\$152,212	\$113,209	\$106,697	\$103,898	\$101,481	\$ 99,354	\$ 97,441

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXX

EDMONTON

PRO-FORMA CASH FLOW

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
CASH at beginning of period	\$ 220,000	\$ 49,920	\$ 56,390	\$ 181,739	\$ 351,698	\$ 490,684	\$ 605,609	\$ 714,732	\$ 820,175	\$ 922,395
SOURCES										
From operations	(139,401)	(5,705)	114,475	115,923	83,532	61,921	59,452	57,785	56,799	56,407
Non cash expense (deprec.)	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684
Increased acc'ts payable	61,283	22,897	23,939	-	-	-	-	-	-	-
Increased charges payable	4,737	799	834	-	-	-	-	-	-	-
Increased fed'l taxes payable	-	-	-	-	2,814	1,931	352	303	265	238
Increased debt/equity	-	-	-	-	-	-	-	-	-	-
TOTAL Sources	\$ (7,697)	\$ 83,675	\$ 205,134	\$ 181,607	\$ 152,032	\$ 129,536	\$ 125,488	\$ 123,772	\$ 122,748	\$ 122,329
APPLICATIONS										
Non recovered cash expense										
Increased accounts receivable	71,377	35,688	35,688	-	-	-	-	-	-	-
Increased inventory	82,715	32,231	33,497	-	-	-	-	-	-	-
Debt repayment	8,291	9,286	10,400	11,648	13,046	14,611	16,365	18,329	20,528	22,991
TOTAL Applications	\$ 162,383	\$ 77,205	\$ 79,785	\$ 11,648	\$ 13,046	\$ 14,611	\$ 16,365	\$ 18,329	\$ 20,528	\$ 22,991
CASH at end of period	49,920	56,390	181,739	351,698	490,684	605,609	714,732	820,175	922,395	1,021,733
NET CASH FLOW	\$(170,080)	\$ 6,470	\$ 125,349	\$ 169,959	\$ 138,986	\$ 114,925	\$ 109,123	\$ 105,443	\$ 102,220	\$ 99,338

ROBERTSON NICKERSON GROUP ASSOCIATES LTD.

TABLE XXX
PEACE RIVER

PRO-FORMA CASH FLOW

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
CASH at beginning of period	\$ 175,000	\$ 3,247	\$ 1,107	\$108,906	\$264,132	\$372,947	\$474,528	\$573,373	\$669,855	\$764,259
SOURCES										
From operations	(144,022)	(17,511)	93,546	97,090	47,359	45,215	43,668	42,624	42,010	41,772
Non cash expense(deprec.)	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684	65,684
Increased acc'ts payable	63,158	23,610	24,683	-	-	-	-	-	-	-
Increased charges payable	4,737	799	836	-	-	-	-	-	-	-
Increased fed'l taxes payable	-	-	-	91	4,327	264	225	194	172	154
Increased debt/equity	159,782	-	-	39,945	-	-	-	-	-	-
TOTAL Sources	\$ 149,339	\$72,582	\$184,749	\$202,810	\$117,370	\$111,163	\$109,577	\$108,502	\$107,866	\$107,610
APPLICATIONS										
Non recovered cash expense										
Increased accounts receivable	71,377	35,688	35,688	-	-	-	-	-	-	-
Increased inventory	84,496	32,944	34,442	-	-	-	-	-	-	-
Debt repayment	165,219	6,090	6,820	47,584	8,555	9,582	10,732	12,020	13,462	15,078
TOTAL Applications	\$ 321,092	\$74,722	\$ 76,950	\$ 47,584	\$ 8,555	\$ 9,582	\$ 10,732	\$ 12,020	\$ 13,462	\$ 15,078
CASH at end of period	3,247	1,107	108,906	264,132	372,947	474,528	573,373	669,855	764,259	856,791
NET CASH FLOW	\$(171,753)	\$(2,140)	\$107,799	\$155,226	\$108,815	\$101,581	\$ 98,845	\$ 96,482	\$ 94,404	\$ 92,532

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXX

VANCOUVER

PRD-FORMA CASH FLOW

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
CASH at beginning of period	\$ 220,000	\$ 32,131	\$ 14,998	\$110,259	\$250,404	\$390,549	\$508,681	\$601,133	\$688,034	\$771,651
SOURCES										
From operations	(157,071)	(29,596)	84,279	85,489	86,845	64,350	40,219	38,417	37,305	36,791
Non cash expense (deprec.)	65,955	65,955	65,955	65,955	65,955	65,955	65,955	65,955	65,955	65,955
Increased acc'ts payable	61,882	23,045	24,093	-	-	-	-	-	-	-
Increased charges payable	5,212	970	1,013	-	-	-	-	-	-	-
Increased fed'l taxes payable	-	-	-	-	-	2,001	2,153	309	270	242
Increased debt/equity	-	-	-	-	-	-	-	-	-	-
TOTAL Sources	\$ (24,022)	\$ 60,374	\$175,340	\$151,444	\$152,800	\$132,306	\$108,327	\$104,681	\$103,530	\$102,988
APPLICATIONS										
Non recovered cash expense										
Increased accounts receivable	71,377	35,688	35,688	-	-	-	-	-	-	-
Increased inventory	84,427	32,811	34,302	-	-	-	-	-	-	-
Debt repayment	8,043	9,008	10,089	11,299	12,655	14,174	15,875	17,780	19,913	22,303
TOTAL Applications	\$ 163,847	\$ 77,507	\$ 80,079	\$ 11,299	\$ 12,655	\$ 14,174	\$ 15,875	\$ 17,780	\$ 19,913	\$ 22,303
CASH at end of period	32,131	14,998	110,259	250,404	390,549	508,681	601,133	688,034	771,651	852,336
NET CASH FLOW	\$(187,869)	\$(17,133)	\$ 95,261	\$140,145	\$140,145	\$118,132	\$ 92,452	\$ 86,901	\$ 83,617	\$ 80,685

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

TABLE XXX
PRINCE GEORGE

PRO-FORMA CASH FLOW

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
CASH at beginning of period	\$ 200,000	\$21,770	\$ 13,931	\$116,202	\$267,274	\$378,341	\$475,940	\$570,095	\$661,794	\$751,320
SOURCES										
From operations	(149,734)	(22,956)	88,343	93,140	50,368	40,876	39,323	38,284	37,687	37,476
Non cash expense(deprec.)	66,160	66,160	66,160	66,160	66,160	66,160	66,160	66,160	66,160	66,160
Increased acc'ts payable	62,248	23,227	24,283	-	-	-	-	-	-	-
Increased charges payable	5,212	970	1,013	-	-	-	-	-	-	-
Increased fed'l taxes payable	-	-	-	-	3,755	884	232	202	180	162
Increased debt/equity	163,784	-	-	40,946	-	-	-	-	-	-
TOTAL Sources	\$ 147,670	\$67,401	\$179,799	\$200,246	\$120,283	\$107,920	\$105,715	\$104,646	\$104,027	\$103,798
APPLICATIONS										
Non recovered cash expense										
Increased accounts receivable	71,377	35,688	35,688	-	-	-	-	-	-	-
Increased inventory	84,882	32,993	34,493	-	-	-	-	-	-	-
Debt repayment	169,641	6,559	7,347	49,174	9,216	10,321	11,560	12,947	14,501	16,241
TOTAL Applications	\$ 325,900	\$75,240	\$ 77,528	\$ 49,174	\$ 9,216	\$ 10,321	\$ 11,560	\$ 12,947	\$ 14,501	\$ 16,241
CASH at end of period	21,770	13,931	116,202	267,274	378,341	475,940	570,095	661,794	751,320	838,877
NET CASH FLOW	\$(178,230)	\$(7,839)	\$102,271	\$151,072	\$111,067	\$ 97,599	\$ 94,155	\$ 91,699	\$ 89,526	\$ 87,557

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

9.0 LOCATIONAL ANALYSIS SUMMARY

All selected locations are viable from an engineering point of view.

From a financial standpoint the Winnipeg, Brandon, and Saskatoon analyses are the most attractive. This is a result of slightly reduced overall general costs in these three locations as compared to the other areas (with the exception of Edmonton). The higher material cost in these three prime locations is compensated for by reduced labour and utility costs.

Edmonton would likely be the most attractive location since the gross profit margin is higher than all other locations. However, DREE financial support is not available in Edmonton, resulting in higher annual interest charges and a lower overall return as a result of the higher equity investment requirement.

The most sensitive operating elements are cost of material, labour, utilities, and transportation.

In all cases where DREE support is available, the plant location in the major center is more attractive than operations in the rural communities. This is a result of higher utility and transportation costs in the rural settings.

Operating costs in British Columbia are generally higher than all other provinces. The most significant factor is the much higher labour costs. The combination of higher operating

costs and no available financial DREE support makes Vancouver a very unattractive location for a vinyl window operation.

APPENDICES

APPENDIX I

ASSEMBLY PLANT EQUIPMENT

ASSEMBLY PLANT EQUIPMENT

PLANT I

2-5 Ton presses w/dies and guards	
2-8 Ton presses w/dies and guards	
3 Air presses w/dies and guards	\$16,500
1-12" Double mitre saw w/air holding blocks	3,000
2 Rack type gauge bars w/turret stops	740
1-12" Radial arm saw for straight cuts	500
1-5 Hp Air Compressor	1,000
1 Vac Vise (holds glass by vacuum during glazing)	550
	<hr/>
TOTAL COST OF MAJOR TOOLING :	\$22,290

PLANT II

Double Saw	
Triple Welder	
Corner Saw	
Steel Cutting Saw	
Two Routers	
Buffers and Hand Drills	
Set up Tables	
	<hr/>
	\$150,000

APPENDIX II

FIXED ASSETS SCHEDULE

FIXED ASSETS SCHEDULE
MACHINERY AND EQUIPMENT

(1978 \$Cndn. delivered)

1) RAW MATERIAL HANDLING

- Gaylord tilter
- Spiral conveyer (2) 4,500 4,500

2) EXTRUSION

- Nabco twin screw extruder and control panel (barrel diameter - 80) 91,100
- Nabco twin screw extruder and control panel (barrel diameter - 65) 76,500
- Accessories for the extruders including transformers, temperature control, vacuum pump 16,000
- Metering devices 4,800 190,300

3) DIES

- 5 hot profile dies including run-in and engineering 115,000
- Spare die lips 5,200 120,200

4) DOWNSTREAM EQUIPMENT

- 2 Vacuum sizing and cooling tool
- 2 Puller and motor
- 2 Cut-off saw and motor
- 2 Blower unit
- 2 Stacking table 151,000 151,000

5) MISCELLANEOUS

- Quality control	1,700	
- Air compressor	3,000	
- Maintenance equipment (mechanical and electrical)	2,000	
- General handling equipment	2,000	
- Water cooling tower 5 Hp	4,700	
- Contingencies	4,000	<u>17,400</u>

6) OFFICE

4,000 4,000

SUB TOTAL: \$487,400

INSTALLATION (10%) 48,700

ENGINEERING (7%) 37,500

\$573,600

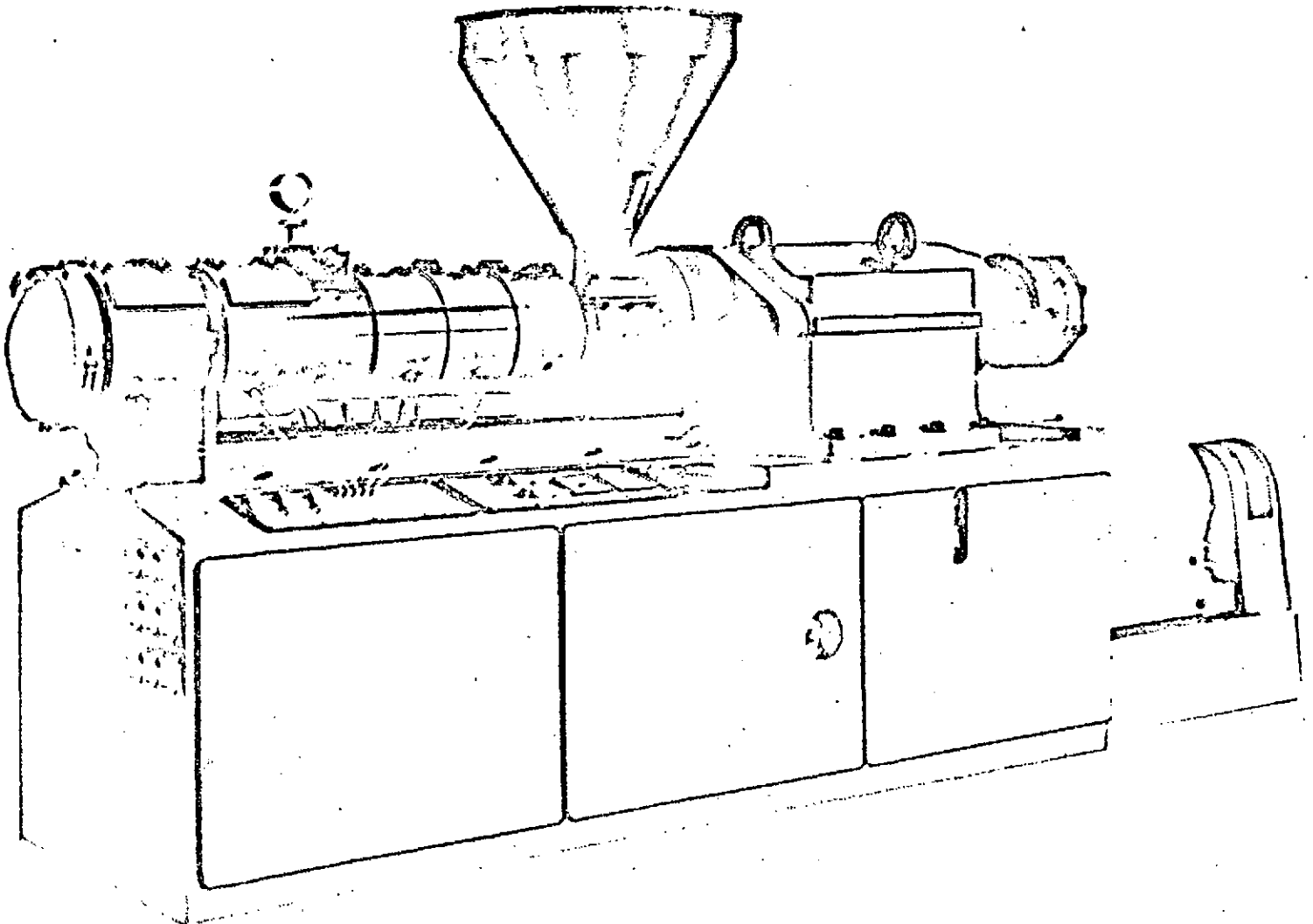
APPENDIX III

TYPICAL EXTRUSION EQUIPMENT

NORTH AMERICAN BITRUDER**NORTH AMERICAN - REIFENHAUSER****Twin-Screw Extruder Bitruder® Model BT 80-16**

Designed to efficiently produce pipe, profile or pellets, NORTH AMERICAN - REIFENHAUSER Bitruders use the contrarotating twin-screw principle with exclusive screw design for extruding thermoplastic materials. Positive conveying action and uniform mixing of materials are features of these interrupted flight twin-screw systems.

Wide choice of screw designs and auxiliary equipment are available to provide the optimum in extrusion equipment for your application.



PERFORMANCE DATA

Output - Pipe or Profile
150-550 lbs./hr. (80-250 kg./hr.) rigid PVC
Output - Pelletizing
270-700 lbs./hr. (100-300 kg./hr.) rigid PVC
400-900 lbs./hr. (200-400 kg./hr.) flexible PVC
Output ranges depend on bulk density, formulation and die characteristics.

Plasticating unit	U.S.	Metric
Diameter of screw	3.2 in.	80.5 mm
Length of screw	16D	
Number of screws	2	
Layout	Intermeshing, self-cleaning with interrupted flights.	
Direction of rotation	Contrarotating to the outside.	
Screw Speed	Infinitely Variable 2 to 43 RPM	

CONTROLS

Heating

Electric resistance heating

Control point:

1. Barrel	6000 W, 3 phase x 230 V
2. Barrel	3000 W, 3 phase x 230 V
3. Barrel	3500 W, 3 phase x 230 V
4. Barrel and head plate	4700 W, 3 phase x 230 V

Total heating capacity 17,200 W

Cooling

Feed throat - Water cooling.

Control points 3 and 4 - Forced air cooling controlled by temperature regulator. Performance of the blower 185 cu.ft./min., driving motor 0.37 KW, 3 phase x 460 V, 60 cycle.

Screw speed indication

Screw speed indication by tachometer generator and tachometer. The indicator is located in the machine instrument panel.

SPECIFICATIONS

Electrical system

Heating circuits, with plug-in connectors, (one) thermocouple for each control point. Connecting cables between plug plate and control panel are included with the control panel.

Drive

30 hp. main motor, SCR controlled DC, 460/3/60.

Power transmission

Matched V-belt drive from the motor to the reduction gear. Effective torque of rotation - max. 1795 ft. lbs. for each screw (248 mkg). Axial bearing of the screws through drive shafts to roller thrust bearings. Max. continuous axial load per shaft - 35,695 lbs. Max. short term axial load per shaft - 50,690 lbs. B 10 thrust bearing life at 25,000 lbs. continuous axial load and 43 RPM-90,000 hrs.

Lubrication

Oil cooling by water through heat exchanger. Oil pump with drive motor - .55 KW, 3 phase x 460 V, 60 cycle. Combined dip and spray lubrication for reduction gear. Pressure lubrication for drive shafts and roller thrust bearing. Low pressure and rate of flow protection are standard.

Screws

Non-segmental design with interrupted flights and bored for temperature control. Material - nitrided steel.

Barrel

Material - nitrided steel standard; Bi-metallic Liner available as an option. All barrels have vented bores and are easily removed for cleaning by means of guide rails.

Hopper

Lacquered steel plate. Capacity 2.8 cu.ft. (80 liters).

Size and weight	U.S.	Metric
-----------------	------	--------

Approx. weight without motor	7000 lbs.	3145 kg.
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Temperature control unit	650 lbs.	295 kg.
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Crate size approx.

LxWxH	145x62x69 in.	3700x1600x1850 mm
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Machine housing & barrel support

Welded Fabricate

Standard equipment

*1 Head plate, nitrided steel, with flange for quick clamp mounting of dies

*1 Split die clamp

1 Set of tools

1 Operator's manual

*Not included if machine is used for face pelletizing.

NOTE: Speed and torque data based on 100% efficiency.

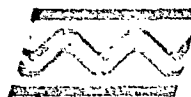
NORTH AMERICAN BITRUDER

NORTH AMERICAN BITRUDER COMPANY, INC.

P. O. BOX 590, FAIRBANKS ROAD

SPRINGFIELD, VERMONT 05156

TEL. (802) 886-8321



NABCO PROFILE LINE

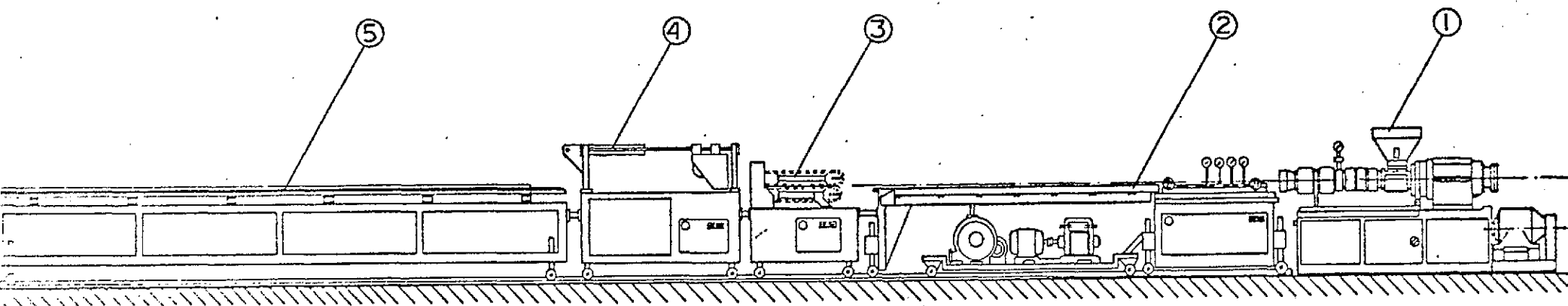


Fig. 4

APPENDIX IV

COMMERCIAL VIABILITY ANALYSIS
- NO PUBLIC ASSISTANCE

TABLE AIV-1

SOURCES OF CAPITAL INVESTMENT - NO GRANT
(1978 \$000's)

L O C A T I O N								
	W	B	S	N.B.	E	P.R.	V	P.G.
OWNER'S EQUITY	376	372	382	372	398	373	386	384
DREE GRANT								
LONG TERM LOAN	564	557	573	557	597	559	580	576
TOTAL	940	929	955	929	995	932	966	960

TABLE AIV-2

USES OF CAPITAL INVESTMENT (1978 \$000'S)
- NO GRANT

L O C A T I O N								
USE	W	B	S	N.B.	E	P.R.	V	P.G.
LAND	17	3	27	2	69	6	35	25
BUILDING	105	108	110	109	108	108	113	117
WORKING CAPITAL	220	220	220	220	220	220	220	220
EQUIPMENT	598	598	598	598	598	598	598	598
TOTAL	940	929	955	929	995	932	966	960

NOTE: In the above table, and in the following tables, initials are used to represent the following locations:

W - Winnipeg, Man.

B - Brandon, Man.

S - Saskatoon, Sask.

N.B. - North Battleford, Sask.

E - Edmonton, Alta.

P.R. - Peace River, Alta.

V - Vancouver, B.C.

P.G. - Prince George, B.C.

TABLE AIV-3

OPERATING COST ELEMENTS

(1978 \$000'S)

	L O C A T I O N							
	W	B	S	N.B.	E	P.R.	V	P.G.
MATERIALS	1,184	1,184	1,180	1,180	1,174	1,174	1,184	1,184
LABOUR	116	116	123	123	120	120	143	143
UTILITIES	19	19	32	36	27	47	24	24
TRANSPORTATION	49	53	42	51	40	59	41	50
OTHER	7	7	7	7	7	7	7	7
GENERAL ADMINISTRATION	57	57	55	56	56	57	54	55
SELLING	33	33	33	33	33	33	33	33
INSURANCE & TAXES	5	6	5	6	5	6	7	6
DEPRECIATION	66	66	66	66	66	66	66	66
INTEREST	63	63	65	63	67	63	65	65
TOTAL	1,599	1,604	1,608	1,621	1,595	1,632	1,624	1,634

TABLE AIV-4

OPERATING STATEMENT MARGINS
(5TH YEAR, \$000's)

	W	B	S	N.B.	E	P.R.	V	P.G.
TOTAL SALES	1,713	1,713	1,713	1,713	1,713	1,713	1,173	1,173
COST OF GOODS	1,376	1,380	1,384	1,397	1,369	1,408	1,400	1,410
GROSS MARGIN	\$ 337 % 19.7%	333 19.4%	329 19.2%	316 18.4%	344 20.1%	305 17.8%	313 18.3%	303 17.7%
GENERAL COSTS	253	245	237	223	260	223	226	239
NET PROFIT	\$ 84 % 4.9%	88 5.1%	92 5.4%	93 5.4%	84 4.9%	82 4.8%	87 5.1%	64 3.7%

TABLE AIV-5

CUMULATIVE CASH FLOW FROM OPERATIONS
(1978 \$000's)

LOCATION	YEAR					
	1	2	3	4	5	10
W	(170)	(166)	(44)	123	262	770
B	(173)	(171)	(53)	109	253	750
S	(175)	(177)	(64)	94	241	733
NB	(181)	(192)	(90)	55	201	669
E	(170)	(167)	(38)	132	271	802
PR	(187)	(206)	(116)	19	154	582
V	(188)	(205)	(110)	30	170	629
PG	(192)	(215)	(128)	4	122	515

TABLE AIV-6

INTERNAL RATES OF RETURN

LOCATION	W	B	S	N.B.	E	P.R	V	P.G.
IRR %	6.85	6.25	5.54	3.56	7.36	1.67	2.3	(-)

APPENDIX V

IRR FORMULA

APPENDIX V

INTERNAL RATE OF RETURN (OR YIELD)

To determine the discount rate that equates the present value of the cash outflow with the present value of expected inflows.

$$\sum_{t=0}^n \left[\frac{A_t}{(1-r)^t} \right] = 0$$

OR

$$A_0 = \frac{A_1}{(1-r)} + \frac{A_2}{(1-r)^2} + \dots + \frac{A_n}{(1-r)^n}$$

APPENDIX VI

SENSITIVITY ANALYSIS

WINNIPEG SALES REVENUE SENSITIVITY

PRO-FORMA CASH FLOW

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
CASH at beginning of period	\$ 175,000	\$ 37,381	\$ 86,478	\$245,968	\$395,312	\$536,505	\$674,269	\$809,155	\$ 941,555	\$1,071,764
SOURCES										
From operations	(107,978)	34,777	144,831	86,320	83,977	81,688	80,021	78,875	78,176	77,864
Non cash expense(deprec.)	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540
Increased acc'ts payable	61,783	23,090	24,140	-	-	-	-	-	-	-
Increased charges payable	4,688	770	805	-	-	-	-	-	-	-
Increased fed'l taxes payable	-	-	1,470	5,250	374	278	236	205	180	163
Increased debt/equity	158,926	-	-	39,731	-	-	-	-	-	-
TOTAL Sources	\$ 182,959	\$124,177	\$236,786	\$196,841	\$149,891	\$147,506	\$145,797	\$144,620	\$ 143,896	\$ 143,567
APPLICATIONS										
Non recovered cash expense	-	-	-	-	-	-	-	-	-	-
Increased accounts receivable	72,928	36,465	36,464	-	-	-	-	-	-	-
Increased inventory	83,196	32,424	33,898	-	-	-	-	-	-	-
Debt repayment	164,454	6,191	6,934	47,497	8,698	9,742	10,911	12,220	13,687	15,329
TOTAL Applications	\$ 320,578	\$ 75,080	\$ 77,296	\$ 47,497	\$ 8,698	\$ 9,742	\$ 10,911	\$ 12,220	\$ 13,687	\$ 15,329
CASH at end of period	37,381	86,478	245,968	395,312	536,505	674,269	809,155	941,555	1,071,764	1,200,002
NET CASH FLOW	\$(137,619)	\$ 49,097	\$159,490	\$149,344	\$141,193	\$137,764	\$134,886	\$132,400	\$ 130,209	\$ 128,238

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

WINNIPEG RAW MATERIAL SENSITIVITY

PRO-FORMA CASH FLOW

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
CASH at beginning of period	\$ 175,000	\$ 25,860	\$ 55,414	\$ 204,482	\$ 346,562	\$ 472,832	\$ 594,956	\$ 714,201	\$ 830,960	\$ 945,528
SOURCES										
From operations	(121,208)	14,393	135,036	79,287	68,336	66,048	64,380	63,234	62,535	62,224
Non cash expense(deprec.)	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540	65,540
Increased acc'ts payable	61,334	22,911	23,952	-	-	-	-	-	-	-
Increased charges payable	4,688	770	805	-	-	-	-	-	-	-
Increased fed'l taxes payable	-	-	-	5,019	1,092	278	236	205	180	163
Increased debt/equity	158,926	-	-	39,731	-	-	-	-	-	-
TOTAL Sources	\$ 169,280	\$ 103,614	\$ 225,333	\$ 189,577	\$ 134,968	\$ 131,866	\$ 130,156	\$ 128,979	\$ 128,255	\$ 127,927
APPLICATIONS										
Non recovered cash expense	-	-	-	-	-	-	-	-	-	-
Increased accounts receivable	71,377	35,688	35,688	-	-	-	-	-	-	-
Increased inventory	82,589	32,181	33,643	-	-	-	-	-	-	-
Debt repayment	164,454	6,191	6,934	47,497	8,698	9,742	10,911	12,220	13,687	15,329
TOTAL Applications	\$ 318,420	\$ 74,060	\$ 76,265	\$ 47,497	\$ 8,698	\$ 9,742	\$ 10,911	\$ 12,220	\$ 13,687	\$ 15,329
CASH at end of period	25,860	55,414	204,482	346,562	472,832	594,956	714,201	830,960	945,528	1,058,126
NET CASH FLOW	\$(149,140)	\$ 29,554	\$ 149,068	\$ 142,080	\$ 126,270	\$ 122,124	\$ 119,245	\$ 116,759	\$ 114,568	\$ 112,598

ROBERTSON NICKERSON GROUP ASSOCIATES LTD

