

A young girl with dark hair in a ponytail, wearing a light blue tank top, is running through a field of tall, golden-brown grass. She is looking to her right with a joyful expression, her arms outstretched. The background is a vast, open field under a bright sky, with the grass creating a sense of motion and depth.

what's right

NorskeCanada  
2003 Accountability Report



what's right

Two simple words that together can form both a question and its answer.

At NorskeCanada, we believe doing “what’s right” isn’t that complicated. To us, this means applying straightforward values to the decisions that we make daily to guide our business. These values are unremarkable except for the fact that we actually try to govern our behaviour by them and commit to live up to their promise. They are not words on a wall for us, they are our guiding principles and we know them by heart.



Russell J. Horner / President and Chief Executive Officer  
NorskeCanada

“What’s right” is a very good place to perform a reality check, a place where we step outside of our pure corporate roles and responsibilities and place ourselves in the shoes of our stakeholders.

Sometimes it leads us to unconventional business decisions but they are most likely to be the ones that are right in a holistic sense. We’re not a big company in a global sense but we know our actions impact many lives. That’s a big responsibility and we hold ourselves fully accountable.

If we turn what’s right into “what’s right?” we actually create questions that we can’t answer on our own.

That’s why we turn to others whose opinions, leadership and

counsel we value and admire. A number of these individuals and their organizations are represented in this, NorskeCanada’s first Accountability Report.

These are people who make us a better company because they are honest with us. They provide us with wisdom, perspective and solutions to help us steadily improve. Each is a leader in their own right and we benefit immeasurably from our association with them. They represent independent voices that help us understand the issues affecting our business in the marketplace, in the workplace and at home in the communities where we live. They know we’re not perfect but they are willing to help us be better.

It is this broad social contract that will help NorskeCanada meet its corporate social responsibility agenda.

In this report, we submit our record for the recent past and new commitments for the coming year. It is a companion piece to our annual report that was issued in March 2003 and the linkage between the two documents is important.

We are not bashful that our organization is a commercial enterprise that exists in part to earn financial returns for its investors. We are not embarrassed that we use the resources of the forest to produce paper. This is the reality of who we are and what we do.

But in the conduct of our day-to-day business there are many individual and collective decisions that we can take that are better choices – choices that measure themselves against a realm of social, moral and ethical decisions. The decisions that arise from them don't have to cost more, although they sometimes do. That too is a conscious decision.

I invite you to read this report on NorskeCanada's progress. There

are still gaps to close and new ones will be identified as we continue our open dialogue with friends and critics. The reporting will be truthful and transparent; it will not always be the results we hope to see but it will represent our best efforts. We will rely on independent third parties to validate our reporting and we will benchmark ourselves against the world's leading social responsibility practices.

In the process, our commitment remains that we will always endeavor to send our employees unharmed and well to their homes every single day; that we will minimize our impact on the environment in a global sense and from the front porches of our neighbors' homes; and that we will do everything we can to deserve the access we have to precious natural resources.

In other words, we'll try always to do what's right.

A handwritten signature in black ink, appearing to read "R. J. Horner". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Russell J. Horner  
President and Chief Executive Officer  
October 27, 2003




The view from the outside



Monte Hummel / President  
World Wildlife Fund, Canada



A photograph of a dense forest. Several tall, slender tree trunks are visible, some with moss or lichen on their bark. The background is filled with a thick canopy of green leaves and branches, creating a sense of depth and a vibrant natural setting.

“From my perspective corporate accountability means leadership in protecting nature; it means beating the regulatory requirements, not simply meeting them; it means reporting both challenges and accomplishments; and it means inviting independent third parties to judge your actions. It’s a high-risk process, but it’s the right thing to do and NorskeCanada does it.”





#### WWF Canada + NorskeCanada

In a world fueled by consumption and fouled by its resulting waste, nature takes a beating. All of us play a role in the problem but far fewer contribute to solutions that will slow down human impact on a shrinking world. World Wildlife Fund, the world's largest conservation organization, is an important advisor to the company and we are proud to be its partner. The company is providing financial support to extend the reach of WWF's terrestrial and marine programs through the establishment of a permanent Pacific Region office based in Vancouver which commenced operation in 2003.

WWF is helping NorskeCanada set its commitments to achieve a number of conservation, toxic reduction and climate change targets. These important benchmarks will be part of an innovative project that WWF and the company are launching in late 2003 which will result in a finished paper product that represents new standards of environmental, social and ethical integrity. These attributes will be achieved within an economic context that allows the final product to be commercially viable.

The project will take a holistic approach so that all aspects of the value chain are properly considered. Transparent reporting will be provided by independent third parties wherever possible.

WWF and NorskeCanada share the view that this process may create a new model that will provide consumers much broader assurances of the total integrity of the products they consider.

Since its incorporation, NorskeCanada has voluntarily demonstrated its own commitments through its fibre procurement practices, its internal

manufacturing processes, its support of conservation organizations and initiatives, and its participation in the broad sustainability movement.

The company is a leading manufacturer of lighter basis weight papers – papers that require less wood fibre because of the company’s use of woodfree fillers and other papermaking process innovations. The result is a lighter but equally strong sheet of paper that offers an array of environmental benefits and reduced impacts. As the finished product leaves the company’s

mills, these benefits are passed on to the end of the value chain. Lighter basis weight paper means that there are more square metres of printing surface per roll. This translates into fewer rolls to be shipped and handled. Less is actually more. Less fibre, less resources per finished unit, less energy consumed and lower emissions lead to more volume of paper per tonne.

Although NorskeCanada is not a forest operator, it is one of the largest consumers of wood fibre in British Columbia through its purchases of wood residuals from other companies.

The company accepts that it is fully responsible for the environmental integrity of the fibre it uses in its pulp and paper products. In this regard, it seeks confirmation and validation that the fibre it uses originates in sustainably managed forests. NorskeCanada’s policy requires its fibre suppliers to be enrolled in one of the internationally recognized forest certification systems. All of the company’s suppliers are asked to report on their progress in a biennial survey conducted in conjunction with

an independent auditing firm. The fourth survey is underway and results will be published in 2004.

NorskeCanada has significant capacity to produce paper with varying percentages of recycled content to meet customer needs and specifications. The company is the sole customer of Western Canada's largest de-inking facility and purchases 120,000 tonnes annually of recycled pulp. The fibre for this process is collected in British Columbia and Alberta and from the U.S. Midwest and Pacific Northwest.


NorskeCanada is also a leading producer of sawdust pulp, a process that one of its predecessor companies developed. This unique, "mini chip" pulp is an economical substitute used by papermakers. Known as Elk Prime in the marketplace, the product is recognized by Canada's Environmental Choice program as a green product.

The coastal temperate rainforests of British Columbia's mainland coast and Haida Gwaii are the focus of an innovative process designed to achieve sustainable levels of conservation and development throughout the region. Led by the provincial government and coastal First Nations this initiative is establishing a network of protected areas and ecosystem-based approaches to development of the region's natural resources.

For almost three years NorskeCanada has supported this effort through the Joint Solutions Project, a unique collaboration between business interests and environmental groups. The JSP has helped fund the scientific work used to inform the coastal initiative, and played a key role in establishing the stakeholder dialogue at the heart of the process.



Bev Van Ruyven / Senior Vice-President, Distribution  
BC Hydro



Accountability is a big challenge for any company but at BC Hydro it's an integral way of doing business. NorskeCanada shares our commitment to be an accountable organization and to ensure that it has community consent to carry on its business. Partnerships are an essential element of accountability because they require the parties to be equally committed."







## BC Hydro + NorskeCanada

NorskeCanada is the largest single industrial customer of BC Hydro, one of Canada's largest electric utilities. With four large industrial complexes in the southwest corner of the province, NorskeCanada depends heavily on the electrical energy it purchases from BC Hydro. It also bears a responsibility to ensure that it is as efficient as possible so that all members of the community at large have adequate supplies of electricity. This is a challenge for both NorskeCanada and BC Hydro as overall consumption in the province continues to grow by two per cent a year.

As is the case with other precious resources, energy is something that we can't afford to waste.

Thanks to BC Hydro's leadership through its Power Smart program, NorskeCanada has been able to make progress towards its energy conservation initiatives.

For example, under the incentives provided by Power Smart, NorskeCanada will receive benefits in the order of \$2 million during the period of July 2003 to June 2004 by virtue of a five per cent reduction in consumption at its Crofton division. These benefits can be used to improve electrical efficiency at any of the company's four operating divisions who have all committed to new conservation targets.

NorskeCanada is also actively exploring new generation and demand management initiatives that may help contribute to broader solutions in the face of increasing demand. As well, the company is conducting studies of alternate fuels to replace fossil fuels.

NorskeCanada has reduced its greenhouse gas emissions by 59 per cent since 1990, well beyond the targets established by the Kyoto protocols. See page 35.



Dave Coles / Vice-President Western Region  
Communications, Energy and Paperworkers Union of Canada



For us, real corporate accountability includes an employer/labour union relationship that is based on mutual respect. We don't have to always agree, but we need to be able to have honest and open dialogue that allows for good decision-making that benefits the company and its employees."





## CEP + NorskeCanada

All lasting relationships are first built on mutual respect, then trust. NorskeCanada and the unions that represent the majority of its employees had a rare opportunity to make a fresh start when the new company was formed. They've made the most of it.

It started with the company making a conscious decision in its values to recognize the legitimate role of unions in its workplace and in its business. It led to constructive talks between senior managers of the company and senior officers of the unions and their respective mill locals. And it culminated in a landmark agreement that defined a new benchmark for labor-management relations in North America.

The agreement negotiated in 2002 between the company and the Communications, Energy and Paperworkers Union of Canada and the Pulp, Paper and Woodworkers of Canada was an important milestone. Negotiated and agreed

to in slightly more than a week, it was reached not only because the terms made sense to each party, but because the company and the unions believed that each would live up to its spirit. And that spirit continues to be reflected in the level of improved cooperation and open communication.


Most importantly, the union and the company have come to terms with the past and appreciate that issues relating to health and safety in the workplace, to the environment, to the competitiveness of the business itself and to specific work practices and processes aren't the exclusive territory of one or the other. Each has a responsibility to contribute to the best solutions.

Working together, there is growing confidence that the company can meet its objective of attaining world-class safety.

In the practical interface that has to be managed in the workplace between the unions and the company, both parties are committed to resolving issues quickly. These are still a challenge but there are fewer issues arising. A President's Council has also been formed to keep leadership groups in the company and the unions fully informed on the critical business issues that are emerging.



Rich Johnston / President  
Malaspina University-College



“The true test of any company’s commitment to the community in which it operates is not the measure of its generosity when times are good, but where it stands when times are bad. NorskeCanada faced one of the most difficult economic downturns in its history, but its commitment to the community did not waver.”





### Malaspina University-College + NorskeCanada

There are many motivations for corporate giving from pure philanthropy to a genuine caring for a specific cause that happens to resonate with a particular organization's culture.

At NorskeCanada, our focus is on community investment because it accords with the values we have towards the health, well-being and development of our own employees, our neighbors and the community at large.

For example, Malaspina University-College is a valuable institution that serves a very large catchment area on Vancouver Island and attracts more than 25,000 full-time and part-time students. While it has all of the academic credentials

of a first-class university, it is also a place of practical learning where students can roll up their sleeves and learn to be a chef, a welder or a business consultant. Malaspina is a place where future leaders are being developed who will eventually take their places in the community as knowledgeable, fully contributing citizens.

NorskeCanada recognizes the very important contribution that Malaspina makes to the community and has pledged its financial support for the university's new library building.

In each community, NorskeCanada attempts to make a difference through its giving program. Whether the giving helps to get a seawall walk completed, a wildlife habitat protected, or a children's activity funded we rely on our community-based employees to help make the right choices.

There is also the broader community that goes far beyond the borders of where our mill operations are located. This too provides an opportunity for NorskeCanada to offer its support. In the past year, this has led to contributions to and sponsorships of the United Way, the Raise-a-Reader campaign, Children's Hospital and St. Paul's Hospital.



David Ford / President and CEO  
Metafore



“In order to be recognized as a responsible corporate citizen, a company must be seen to be accountable to all its stakeholders at all levels. I believe NorskeCanada is firmly committed to that course and acknowledges fully the interdependence within the value chain of the social, environmental and economic elements of its business.”





## Metafore + NorskeCanada

There's a huge distance between the forest and the marketplace and most consumers would not be able to draw the road map back from the front step where they pick up their daily newspaper. We don't think they should have to, but at the same time, we believe it is important that they understand that the long journey of the product in their hands started in a sustainably managed forest.

Metafore is a non-profit organization based in Portland, Oregon that promotes business practices that advance conservation, protection and restoration of the world's forests.

NorskeCanada shares Metafore's vision of an economy where trade in forest products, including the pulp and paper it produces, enhances rather than degrades the forest and the well-being of the communities that depend upon them.

NorskeCanada is actively involved in Metafore's mission as a financial supporter and through the efforts of a senior officer of the company who currently chairs its Board of Directors.

Metafore is fostering leadership by providing counsel and resources to North American companies, government and non-governmental organizations and other independent agencies that help them develop awareness and subsequently, sustainable strategies related to their relationships to the forest.

The process of engagement helps catalyze change that ultimately contributes to the selection of products that originate from well-managed forests. A number of leading brands, not normally associated with the use of forest products, have turned to Metafore for advice and counsel as they develop new internal procurement policies for wood and paper.

Formerly the Certified Forest Products Council, Metafore's broader vision today supports the needs of committed organizations by providing expertise, relationships and the tools to achieve their goals.



Adine Mees / President and CEO  
Canadian Business for Social Responsibility



“It’s increasingly evident that financial results alone cannot determine a company’s health. Sustainability depends as much on social and environmental practices as it does on the bottom line. Organizations, like NorskeCanada, that recognize the need for a universal approach to corporate social responsibility will in turn be recognized by customers and investors and will lead their sectors.”







## CBSR + NorskeCanada

NorskeCanada became a member of Canadian Business for Social Responsibility to focus its broad sustainability agenda and aspirations. While the company has made progress on specific goals in its first few years, many of its achievements could be regarded as “random acts of goodness.” This is not what sustainable programs are made of and CBSR is providing the company with sound counsel to institutionalize best practices and to build on its accomplishments. The company’s values constitute the conduct of its business decision-making, in its relationship with its workers and their unions, in its interaction with the community, customers and suppliers and in its accordance with contemporary ethical practices. This is embodied in NorskeCanada’s simplified credo: “do the right thing.”

Under the auspices of CBSR and in partnership with Alcan, NorskeCanada will help host an important conference in Vancouver in late 2003 to explore the Business Case for Sustainability. NorskeCanada will share the podium with World Wildlife Fund to present the benefits both organizations have derived from their formal partnership.

An internal study of employee attitudes and understanding of the company’s commitments to sustainability and to corporate social responsibility will be undertaken by an independent source in late 2003. When the results have been compiled, the company will develop a plan that will harness and engage the broad organization of NorskeCanada in a manner that conforms to the company’s non-bureaucratic style.

While there are still gaps to close, the company was pleased to be recognized in 2003 by the FTSE4Good index of socially responsible companies. To be included in the index, companies are required to meet a number of social, environmental, ethical and moral thresholds.





## 2003 Environment Report

## Achievements and Goals



NorskeCanada is committed to continuously reducing the effect of its operations on the environment. Advanced technology and exacting procedures in place at our four mills are designed to ensure that the facilities operate efficiently and effectively while consistently complying with government regulations for air emissions, effluent discharges and solid waste generation. Our goal is to provide customers with quality pulp and paper products that reflect a high level of social and environmental responsibility.

Over the past five years we have made substantial investments at all facilities to upgrade air emissions controls and infrastructure. During 2002 all our mills continued to improve their emission levels.

The environmental management systems at all of our mills are now registered to the ISO 14001 Environmental Management System (EMS) standard. Located within 160 kilometres of one another, the four mills share their environmental best practices, ensuring a consistent operational philosophy and environmental approach.

## Management Systems

Our mills have environmental management systems (EMS) to identify and prioritize key environmental issues and ensure that appropriate actions are taken on a timely basis. These systems include a guiding environmental policy, annual objectives and targets for the facility, and an information library of legal and other requirements. At the operational level, procedures and policies define management responsibility, employee training and awareness, communications, standard operating procedures, emergency preparedness and document control. At least two audits are conducted annually and we record and follow up on any non-conformances. An independent auditor recertifies each site's EMS to the ISO 14001 standard annually.

## Compliance Auditing

In 2002 an independent expert conducted an extensive audit of each mill site against applicable environmental legislation and engineering standards. The audits confirmed that the Company is substantially compliant with its permits and legislation. Audit reports were prepared and management is tracking the findings to ensure that all deficiencies are addressed.

Outside of the scheduled compliance audits other reviews are conducted to ensure the adequacy of infrastructure around such issues as hazardous chemical releases, seismic integrity, site security and site contamination. Findings from all audits and reviews are documented and addressed under ISO 14001 to ensure they are managed appropriately in the short and long term.

## Reducing Water Use and Energy Consumption

Water use is directly connected to energy consumption because most of the water that comes into the mill is heated. We are striving to reduce energy consumption at all our facilities. We are also considering the use of alternative fuels as one way of reducing our industry's historical dependence on fossil fuels. Since each incremental unit of energy used at the mills is typically generated by burning fossil fuel, these initiatives not only reduce operating costs, but also have the potential to decrease fossil fuel use and thereby reduce greenhouse gas emissions. Achieving our energy reduction goals will lead to reductions in greenhouse gas emissions.

## Greenhouse Gas Emissions

Our direct emissions of greenhouse gases (GHG) have dropped by 59 per cent since 1990, which goes well

beyond Canada's commitment under the Kyoto Protocol of a six per cent reduction of 1990 levels by 2008. Our success in this initiative is the result of mill modernizations, the use of less GHG-intensive fuels, improved combustion efficiency of woodwaste, and better energy efficiency at all mills.

Most of our direct GHG emissions are due to fossil fuel use in combustion equipment. We are well positioned to meet any future restrictions on GHG emissions that may be imposed by the federal authorities under the Kyoto Protocol. Strategic planning around energy management is well underway and encompasses the greenhouse gas issue.

Year	Direct GHGs (tonnes)
1990	1,361,107
1998	619,592
1999	770,115
2000	716,549
2001	760,820
2002	554,782

## 2002 and 2003 Achievements and Goals

We accomplished several important operational and environmental goals in 2002. With the Port Alberni and Powell River mills implementing the ISO 14001 standard, all four mills now have a certified EMS. In addition, each mill focused during the year on initiatives to improve environmental performance.

Crofton continues to reduce emissions and odour. The mill has upgraded the concentrated non-condensable gas odour collection system, replaced sections of the effluent treatment system's piping, and replaced and upgraded the power boiler's fuel oil delivery system with spill containment and fire prevention systems.

Elk Falls optimized performance of its wet electrostatic precipitator, further reducing haze in the Campbell River area. This year Elk Falls will implement upgrades to improve the chlorine dioxide system and will work to achieve its target of a 10 per cent reduction in water usage.

Our Port Alberni mill achieved 100 per cent compliance with all permits. Particulate emissions were the lowest in the mill's history, the result of efficient power boiler operation and precipitator maintenance. In 2003 Port Alberni is aiming to decrease purchased electricity consumption by increasing internally generated power.

Our Powell River mill has completed improvements to the effluent treatment system and has installed permanent storage systems, including secondary containment, for three bulk process chemicals. The mill has also undertaken several initiatives to reduce odour from the mill site. This year Powell River aims to reduce water use by 10 per cent over 2002.

## Crofton



Crofton Division is located next to the small community of Crofton, on the southeast coast of Vancouver Island in the Cowichan Valley. The community traces its roots to the early 1900s when Henry Croft built a handful of homes for workers in his copper mining and smelting enterprise.

Mr. Croft's mine closed a few years later, but Crofton's deep-sea port eventually became the ideal location for a pulp and paper operation. Today, most of the division's 1,000 employees make their homes in various parts of the Cowichan region – from Ladysmith and Chemainus to the north and the nearby city of Duncan to Mill Bay to the south.

Surrounded by breathtaking scenery – high mountains, lush forests, rich farmland, sparkling seascapes and freshwater streams and lakes – Crofton's people are acutely aware of the need for and benefits of environmental protection.

Crofton Division is an integrated pulp and paper mill with three paper machines and two pulp lines. Major products include newsprint, directory paper and NBSK pulp, which is used in the manufacture of printing, writing and tissue papers.

Newsprint capacity .....	280,000 tonnes	Paper machines: .....	Three
Directory capacity .....	150,000 tonnes	Pulp lines: .....	Two
Market pulp capacity .....	250,000 tonnes	Employees: .....	1,000



### What we accomplished in 2002/2003:

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| <ul style="list-style-type: none"> <li>▶ Installed additional real-time emissions measurement systems on both the power and recovery boilers. These included a polycyclic aromatic hydrocarbon (PAH) monitor on the power boiler to track formation of PAHs, which have been linked to the formation of dioxin. Both recovery boilers were also fitted with new real-time particulate monitors, and the No. 3 recovery boiler was equipped with a real-time total reduced sulphur (TRS) emissions sensor.</li> <li>▶ Overhauled the effluent treatment system's piping.</li> <li>▶ Replaced and upgraded the power boiler's fuel oil system with environmental containment and fire controls.</li> <li>▶ Reduced the number of times we exceeded our permit limit for elevated odorous gases from seven in 2001 to one in 2002. The improvement reflects strong operating performance and the benefits of capital improvement projects introduced over the past several years to reduce odour.</li> <li>▶ Participated in a Forest Products Association of Canada air emissions testing program, which is designed to measure the point source emissions from the stacks and their impact on ambient air quality. Twenty-nine sources were tested for fine particulates, TRS, sulphur dioxide, nitrogen oxides, ammonia, PAHs and volatile organic substances.</li> </ul> | <ul style="list-style-type: none"> <li>▶ Installed a heat exchanger on part of its kraft effluent stream that reduced both mill energy use and odorous TRS emissions from the pulp washers.</li> <li>▶ Received approval from the provincial government in early 2003 to expand our wood ash landfill, which is currently at capacity. We began construction of this expansion project in the summer of 2003.</li> <li>▶ Started disposing of accumulated stockpiles of woodwastes and wood sludges to reduce wastes on the mill site. These are being disposed of through incineration in the mill's woodwaste power boiler.</li> <li>▶ Completed a seismic upgrade of our chlorine dioxide storage tanks and installed a containment berm to reduce the impact of a potential chemical spill.</li> <li>▶ Improved the mill's equipment and emergency response capabilities following an audit of the oil delivery and handling procedures in 2002.</li> <li>▶ Started working with a local environmental group to begin assessing the health of the nearby estuary now that the mill has eliminated a fresh water discharge into that site.</li> </ul> |
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### What we are working on:

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| <ul style="list-style-type: none"> <li>▶ A review of other potential clean fuels for the power boiler. Fuels with no sea salt content will help reduce fine particulate emissions.</li> <li>▶ The further extension of a seismic upgrade of our chlorine dioxide storage by installing a chemical neutralization system for the berm.</li> <li>▶ Assessment of the seismic integrity of our Lake Cowichan weir, raw water pipeline and surge tower.</li> </ul> | <ul style="list-style-type: none"> <li>▶ Increased employee awareness of the environmental and economic benefits of reducing water consumption. The short-term goal is to reduce water usage by 10 per cent in 2003. The long-term goal is to reduce water usage by 20 per cent by completing identified capital projects.</li> <li>▶ Further improvements to the mill's equipment and emergency response capabilities following an audit of the oil delivery and handling procedures in 2002.</li> </ul> |
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### Problem areas in 2002/2003 and what we did to put them right:

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| <ul style="list-style-type: none"> <li>▶ In July, odorous gases released from the pulp washing area exceeded our permit limit.<br/><i>A cleaner source of water has been routed to the pulp washers and there have been no further permit exceedances for odour.</i></li> <li>▶ Two minor releases of freon, an ozone depleting substance (ODS), were released from an air conditioning unit in 2002.<br/><i>The incidents were investigated and reported to the regulatory agencies. The air conditioning unit was repaired and the unit is scheduled for a complete overhaul and refrigerant replacement to a non-ODS refrigerant.</i></li> </ul> | <ul style="list-style-type: none"> <li>▶ A weekly sample of the mill's cooling water outfall failed the daphnia flea toxicity test. A subsequent sample passed the daphnia flea toxicity test, while another failed. Analytical testing indicated no contamination in the stream and the sample passed the trout toxicity test with 0 per cent mortality. Daphnia testing is considered an indicator of toxicity, whereas trout testing is considered a conclusive determination of toxicity.<br/><i>This incident was investigated and reported to the regulatory agencies. The cooling water discharge will continue to be tested for daphnia and trout toxicity.</i></li> </ul> |
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## Elk Falls



Elk Falls Division is located near Campbell River, on the central east coast of Vancouver Island. With 30,000 residents and a diversified economy, Campbell River is a major regional centre that serves as a natural distribution and service hub for the northern half of the island.

Salmon fishing enthusiasts flock to Campbell River as a gateway to the abundant waters of the Georgia Basin – bordered by Vancouver Island, the B.C. mainland and the northern Gulf Islands. With more than 22 kilometres of waterfront, the city is also a primary port on the Inside Passage frequented by Alaska cruise ships and other deep-sea vessels.

Elk Falls Division is an integrated pulp and paper mill operating three paper machines, one kraft paper machine and one pulp line. Major paper products are newsprint and soft-calendered high brites used in catalogues, newspaper inserts and magazines, and kraft paper used in product packaging. The division's major pulp product is sawdust-based kraft pulp, used to make tissue and printing and writing paper.

Newsprint capacity: ..... 365,000 tonnes  
 Specialties capacity: ..... 145,000 tonnes  
 Kraft paper capacity: ..... 114,000 tonnes  
 Market pulp capacity: ..... 160,000 tonnes

Paper machines: ..... Three  
 Kraft paper machines: ..... One  
 Pulp lines: ..... One  
 Employees: ..... 1,050



### What we accomplished in 2002/2003:

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| <ul style="list-style-type: none"> <li>▶ Optimized performance of our wet electrostatic precipitator, which virtually eliminated haze in the Campbell River area by reducing particulate emissions by an estimated 85 per cent. The new precipitator allowed us to reduce the power boiler's permit level to 115 mg/cubic metre in late December 2002 from 460 mg/cubic metre. As part of the new permit, testing now takes place monthly instead of quarterly and has been expanded to encompass metals and sulphur dioxide.</li> <li>▶ Successfully integrated the ISO 14001 Environmental Management System of the pulp and paper operations.</li> <li>▶ Reduced water usage by six per cent during the first half of 2003 by implementing process efficiencies.</li> <li>▶ Conducted a trial using coal as an auxiliary fuel in the No. 5 power boiler. Results showed significant improvements in boiler stability, a decrease in polycyclic aromatic hydrocarbons (PAH), and reduced dioxin and furan formation when burning high salt content woodwaste with coal rather than with natural gas or oil. After this</li> </ul> | <p>successful trial and a series of public open houses and newsletters, we received an air permit amendment in December 2002 to burn coal as an auxiliary fuel. Since coal allows for more efficient burning, we anticipate reduced volumes of ash for disposal in landfills.</p> <ul style="list-style-type: none"> <li>▶ Repaired the effluent treatment UNOX reactor with no environmental upsets, and identified and repaired a leak in the mill's landfill liner. To ensure that the landfill liner is protected in future we have restricted equipment access in this area.</li> <li>▶ Regularly communicated our environmental initiatives and achievements to the community. Two newsletters were sent to local residents during the year and the mill held two open houses to discuss coal plans and trial results. The mill's Bug Show participated in the annual Campbell River Children's Festival. We also completed an annual community survey, which showed a continuing improvement in local public perception.</li> </ul> |
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### What we are working on:

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| <ul style="list-style-type: none"> <li>▶ Reduction of water usage by 10 per cent.</li> <li>▶ Reduction of sulphur emissions.</li> <li>▶ Shut down of our No. 1 recovery boiler in 2004, which will reduce total reduced sulphur (TRS) emissions from the recovery boiler and the lime plant. This closure will also reduce organic loading to the secondary effluent treatment plant.</li> </ul> | <ul style="list-style-type: none"> <li>▶ Commissioning a bio-scrubber to treat exhaust from the equalization basin at the secondary effluent plant. This is expected to reduce treatment plant odours in the surrounding community.</li> </ul> |
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### Problem areas in 2002/2003 and what we did to put them right:

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| <ul style="list-style-type: none"> <li>▶ We exceeded our permit for particulate from the No. 3 power boiler in the second quarter of 2002. The boiler was shut down, based on visual observations, prior to receiving test results.<br/><i>In December 2002 this boiler was placed on standby service. The boiler will no longer burn woodwaste fuel, which contributes to particulate, and will be run on oil alone.</i></li> <li>▶ In March there was a small release of calcium carbonate.<br/><i>The containment system was modified to redirect any future releases to the secondary effluent treatment plant.</i></li> </ul> | <ul style="list-style-type: none"> <li>▶ During the May shutdown, there was a release of secondary treated effluent to the storm-water retention lagoon at the co-generation facility adjacent to the mill.<br/><i>The lagoon was quickly emptied back into our treatment system using vacuum trucks.</i></li> <li>▶ In December, 35 kilograms of chlorine dioxide were released to the atmosphere due to a power outage.<br/><i>Investigation revealed that the existing emergency backup systems for chlorine dioxide were unreliable. These systems have been upgraded.</i></li> </ul> |
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## Port Alberni



A thriving forest industry centre for 80 years, the city of Port Alberni is situated on the west coast of Vancouver Island at the head of the 48-kilometre-long Alberni Inlet, surrounded by scenic wooded mountains.

The city is named for Pedro de Alberni, a Spanish sea captain who sailed nearby waters in 1791. Home to about 29,000 residents, it is the gateway to Pacific Rim National Park on Vancouver Island's west coast. Each year Port Alberni hosts close to 950,000 tourists from around the world, who come to pursue such activities as swimming, hiking, sport fishing, diving and kayaking, or just to enjoy its scenic beauty. NorskeCanada and its employees are proud to contribute to the community's cultural, social and economic vitality.

At Port Alberni, two machines produce directory paper for telephone directories and one machine produces lightweight coated paper used in catalogues, magazines, brochures, inserts and flyers.

Directory capacity: ..... 223,000 tonnes  
 Lightweight coated capacity: ..... 209,000 tonnes

Paper machines: ..... Three  
 Employees: ..... 750

### What we accomplished in 2002/2003:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>▶ Registered our environmental management system to the ISO 14001 EMS standard and achieved 100 per cent compliance with all permits.</li> <li>▶ The lowest particulate emissions from the power boiler in the mill's history due to efficient boiler operation and precipitator maintenance.</li> <li>▶ Installed a mechanical barker in the woodroom to replace the existing hydraulic barker. This reduced water consumption by approximately 1,000 U.S. gallons per minute and increased electric power generation from the mill's turbo-generator because the new barker enabled us to shut down the steam-driven water pump. Partial funding for the project was provided by BC Hydro's Power Smart program. The mechanical barker was "recycled" from the Powell River mill, where the equipment was no longer needed following the closure of the Powell River woodroom.</li> <li>▶ A significant reduction in natural gas consumption by introducing a banking strategy on the No. 3 power boiler and operating the boiler in a "hot" standby mode, readily available as backup for the woodwaste boiler with minimal gas usage.</li> <li>▶ Participated in a Pulp and Paper Research Institute of Canada (PAPRICAN) research project to explore ways to reduce the formation of trace levels of chlorinated dioxins and furans when salt-laden woodwaste is burned</li> </ul> | <p>in the power boiler. Two trials used a water spray quench system. The results from the first trial were very encouraging and recorded the lowest dioxin emissions ever measured for this boiler. The research work indicated that the use of tire-derived fuel helped reduce dioxin formation because sulphur in the fuel inhibits the formation of chlorinated compounds. Further trials and testing are scheduled for 2003 using the combination of the quench system and the addition of tire-derived fuel.</p> <ul style="list-style-type: none"> <li>▶ Completed the collection system for storm water from the old kraft chip pile area of the mill for treatment in the mill's effluent treatment system.</li> <li>▶ Safely removed more insulating material containing asbestos from the old kraft mill and recovery boilers that were shut down in 1993.</li> <li>▶ Demolished and removed obsolete equipment, including the 40-year-old recovery boiler stack, which changed the skyline of the area.</li> <li>▶ Completed construction of a six-kilometre pipeline transporting water from Sproat Lake to the Port Alberni mill, replacing an above-ground line built more than 40 years ago. Environmental considerations were a major factor in project planning because the pipeline crosses 13 sensitive fisheries streams. The project was recognized with an Award of Merit from the Consulting Engineers of British Columbia.</li> </ul> |
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### What we are working on:

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>▶ A decrease in purchased electricity consumption by increasing internally generated power. Implementation of another Power Smart project by upgrading the turbo-generator will produce additional power from the same steam flow.</li> <li>▶ Reduction of water consumption by improving awareness and identifying low-cost conservation projects.</li> <li>▶ Further trials and testing of ways to reduce the formation of trace levels of chlorinated dioxins and furans when salt-laden woodwaste is burned in the power boiler.</li> <li>▶ Further expansion of untreated storm water runoff collection from the periphery of the mill site and woodyard.</li> </ul> | <ul style="list-style-type: none"> <li>▶ The continued safe removal of insulating material containing asbestos and the demolition of old obsolete equipment.</li> <li>▶ Consideration of options for the re-use and disposal of the old Sproat Lake water pipeline.</li> <li>▶ We are participating with other interested organizations in the development of a Somass Estuary management plan aimed at enhancing the productivity and diversity of the natural resources in the estuary. The plan will provide a balanced approach that supports water-dependent industrial use while aiming to maintain and improve the existing habitat base for fish, wildlife and plants. The Port Alberni mill is located on the estuary.</li> </ul> |
|--|--|

### Problem areas in 2002/2003 and what we did to put them right:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>▶ There was one spill to the environment in November 2002 when sodium sulphite solution used in the chemi-thermo mechanical pulping process was discharged to the sewer during a power failure.<br/><i>The incident was reported to the regulatory agencies and there was no indication of environmental impact. Operational and control changes have been introduced to prevent a recurrence.</i></li> <li>▶ An outstanding Waste Management Act charge relating to a 1999 effluent spill (prior to NorskeCanada ownership of the mill) was resolved in 2002.</li> </ul> | <p><i>As part of the settlement, we made a \$7,500 donation to a local fish enhancement society.</i></p> <ul style="list-style-type: none"> <li>▶ While demolishing old equipment at the kraft mill in August 2002 insulation containing asbestos was inadvertently removed without the required safety and containment procedures.<br/><i>The incident was investigated and reported to the Workers' Compensation Board and improvements were made to our procedures to prevent a recurrence. The asbestos was contained within the mill site, properly cleaned up and not released to the environment.</i></li> </ul> |
|--|---|

## Powell River



Powell River Division's paper mill began operation in 1912 – the first newsprint producer in Western Canada. And from the beginning the mill has been a proud contributor to the vibrant community of the same name.

Situated on British Columbia's mainland – at the top of the Sunshine Coast, about 140 kilometres northwest of Vancouver – the District of Powell River now boasts a population of 22,000. Nestled between the waters of the Strait of Georgia and the pine forests of the Coast Mountain Range, its location, mild climate and natural beauty make it a popular vacation spot, especially attractive to divers, hikers, kayakers and other outdoors enthusiasts.

The division and its people actively support local programs and community organizations, with particular emphasis on pursuits with an environmental aspect. One example is a salmon hatchery built on the mill site in 2000. Sponsored by the division and operated by the Powell River Salmon Society, the hatchery can rear 2.5 million salmon fry annually for release into streams along the Sunshine Coast.

Powell River Division produces newsprint and soft-calendered and machine-finished high brites on three paper machines. The mill's specialty grades are used in catalogues, magazines, inserts, flyers and high-volume weekend newspaper magazines.

Newsprint capacity: ..... 227,000 tonnes  
Specialties capacity: ..... 232,000 tonnes

Paper machines: ..... Three  
Employees: ..... 725



### What we accomplished in 2002/2003:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>▶ Implemented the ISO 14001 Environmental Management System and successfully achieved registration in July 2002. This provides an independent confirmation of the quality and integrity of the mill's environmental management system.</li> <li>▶ Amended our air and effluent permits in early 2002 to reflect the closure of the kraft pulp mill in November 2001. The mill no longer has any discharges related to the kraft pulping process.</li> <li>▶ Published the first two issues of <i>Enviomatters</i>, an environmental newsletter created to advise the citizens of Powell River of some of the environmental initiatives undertaken by the mill. This newsletter will be an ongoing divisional initiative.</li> <li>▶ Installed and commissioned an automated system to elevate the pH of the primary effluent clarifier to minimize odours from this source. As well, new tankage was installed at our sludge dewatering facility to minimize odour generation.</li> <li>▶ Completed improvements to the effluent treatment power supply system and concluded upgrades to the effluent outfall monitoring system. These two enhancements provide improved backup power and a system to collect and store information in the event of a power outage.</li> <li>▶ Replaced effluent treatment system underground piping and diverted potentially contaminated cooling and storm water streams to the system for treatment. We also installed additional equipment to prevent further paper machine effluent releases.</li> </ul> | <ul style="list-style-type: none"> <li>▶ Converted two decommissioned kraft mill tanks for use as PCC (precipitated calcium carbonate) storage, including installation of a spill containment system and upgrades for seismic stability, and completed installation of permanent storage systems for two additional bulk process chemicals. As a result of this, these three chemicals now meet the Company's standard for storage and handling of bulk process chemicals.</li> <li>▶ Completed a trial using tire-derived fuel as an auxiliary fuel in place of natural gas. This trial was undertaken to reduce emissions and improve the combustion efficiency of woodwaste, the power boiler's primary fuel. A comprehensive trial assessment report, prepared by a third party consultant, was submitted to the Ministry of Water, Land and Air Protection in June 2003.</li> <li>▶ Shipped approximately 480 tonnes of PCB-contaminated soil and concrete to Quebec for high temperature incineration.</li> <li>▶ Participated in the Pulp and Paper Research Institute of Canada's research project to determine control strategies for trace dioxin and furan emissions from coastal power boilers. Results from the 2002 semi-annual stack emission tests show that the dioxin/furan emissions from the No. 19 power boiler continue to be among the lowest of the coastal boilers and well below the Canada-wide standard for existing and new boilers.</li> <li>▶ Launched an education program to reduce mill process water use by 10 per cent by promoting zero-cost or low-cost water reduction initiatives.</li> </ul> |
|--|---|

### What we are working on:

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>▶ Reducing water use by 10 per cent over 2002.</li> <li>▶ Maximizing the use of woodwaste fuel, offsetting the need for supplemental natural gas use, resulting in a reduction in greenhouse gas emissions.</li> <li>▶ A long-term solution to streamline the effluent treatment system by converting one of the three existing secondary</li> </ul> | <p>clarifiers into a primary clarifier. This process will further reduce odour and effluent pumping costs.</p> <ul style="list-style-type: none"> <li>▶ Identifying and prioritizing a list of projects that may be added to the 2004 capital plan to ultimately achieve a further 50 per cent reduction in water use over a five-year period.</li> </ul> |
|---|---|

### Problem areas in 2002/2003 and what we did to put them right:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>▶ The pH of our two cooling water discharges was outside the permit range of 5.5 to 8.0 on 16 occasions in 2002. The majority of these incidents originated from the paper mill area and were of short duration.<br/><i>Investigations were completed and corrective action plans were developed and completed for each incident. Several cooling water and storm water streams were diverted to the effluent treatment system to prevent future discharges.</i></li> <li>▶ In November 2002 the one-hour average opacity from the woodwaste-fired No. 19 power boiler exceeded our permit limit four times due to a single incident related to burning high salt content woodwaste fuel.<br/><i>We have reviewed established procedures with operating personnel to prevent a recurrence.</i></li> <li>▶ Environment Canada investigated a minor reportable spill of paper machine effluent that occurred in August</li> </ul> | <p>2002. There has been no further regulatory action.<br/><i>To prevent future overflows from this source additional equipment was installed during the May 2003 maintenance shutdown.</i></p> <ul style="list-style-type: none"> <li>▶ Three other reportable spills were recorded in 2002. All were minor.<br/><i>Investigations were completed and corrective actions taken for each incident.</i></li> <li>▶ In March 2003 there were five pH permit exceedances at the treated effluent outfall. The cause was the inadvertent release of sodium hydroxide (caustic soda) into the effluent treatment system due to human error.<br/><i>The mill was immediately shutdown to prevent further exceedances. Corrective actions have been completed to improve process monitoring, operating procedures and training of employees.</i></li> </ul> |
|--|---|

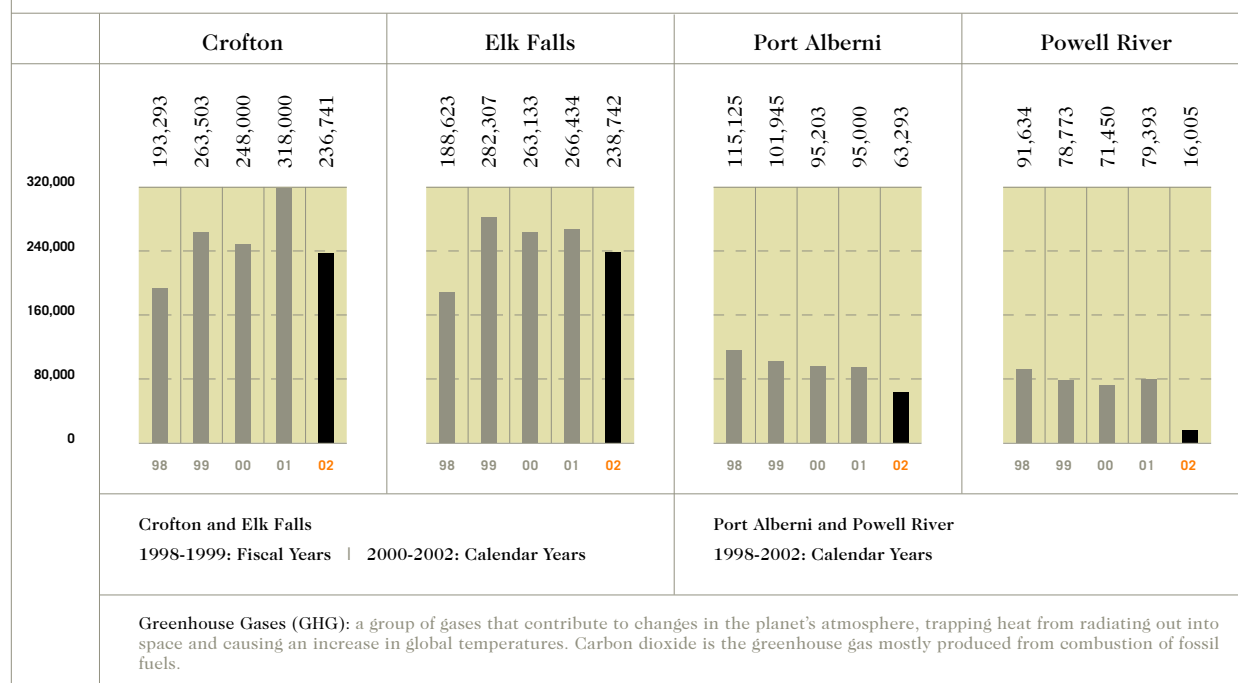
## Improving Air Quality



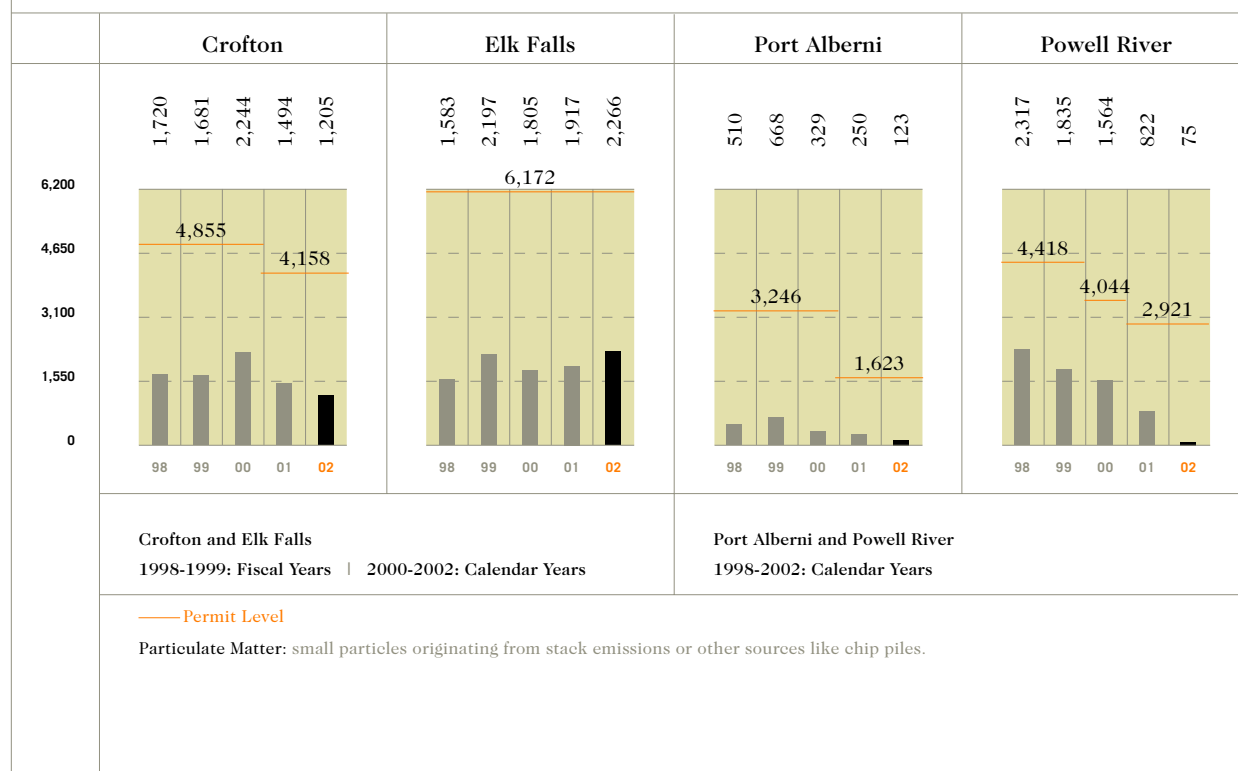
We strive to achieve ongoing improvement in air quality in the vicinity of our four mills. Over the past five years, we have invested substantial capital at our facilities to upgrade air emissions controls and infrastructure. Crofton and Elk Falls – the only NorskeCanada mills now producing kraft pulp – have made significant progress in reducing odours associated with the chemical pulping process. Improvements in odour and fine particulate emissions controls and monitoring equipment at Crofton in 2002 and optimization of the new wet electrostatic precipitator at Elk Falls have contributed to sharply reduced emissions of particulate and haze at the respective mills. At Port Alberni, improved operating performance of the power boiler and precipitator has reduced particulate emissions. Opacity problems at Powell River have been largely resolved after the mill decreased the use of high salt content woodwaste as fuel for the power boiler. Our mills already meet scheduled 2006 federal regulations limiting emissions of dioxins, which are generated by burning wood-waste containing high levels of sea salt.

Air Emissions					
	1998	1999	2000	2001	2002
<b>Crofton</b>					
Direct GHGs as tonnes CO <sub>2</sub> e/year <sup>3,4</sup>	193,293	263,503	248,000	318,000	236,741
Direct GHGs as kg CO <sub>2</sub> e/adt <sup>3,4</sup>	404	349	340	490	303
Particulate matter kg/day <sup>5</sup>	1,720	1,681	2,244	1,494	1,205
Particulate matter kg/adt <sup>5</sup>	1.0	0.88	1.13	0.77	0.60
TRS kg/day <sup>8</sup>	no test	523	588	322.2	218.6
TRS kg/adt <sup>8</sup>	no test	0.45	0.452	0.259	0.181
Power Boiler dioxin ng/m <sup>3</sup> TEQ <sup>6,7</sup>	no test	no test	0.132	0.089	0.091
Ambient TRS % compliance A level					
24 hr average <sup>1</sup>	95.2	94.3	90.7	91.1	94.8
Ambient PM10 % compliance A level <sup>2</sup>	99.9	99.7	99.8	99.9	100
<b>Elk Falls</b>					
Direct GHGs as tonnes CO <sub>2</sub> e/year <sup>3,4</sup>	188,623	282,307	263,133	266,434	238,742
Direct GHGs as kg CO <sub>2</sub> e/adt <sup>3,4</sup>	460	380	340	370	322
Particulate matter kg/day <sup>5</sup>	1,583	2,197	1,805	1,917	2,266
Particulate matter kg/adt <sup>5</sup>	0.79	1.00	0.79	0.86	0.99
TRS kg/day <sup>8</sup>	241	233	307	201	267
TRS kg/adt <sup>8</sup>	0.26	0.23	0.33	0.21	0.23
Power Boiler dioxin ng/m <sup>3</sup> TEQ <sup>6,7</sup>	no test	no test	no test	0.11	0.168
Ambient TRS % compliance A level					
24 hr average <sup>1</sup>	100.00	99.97	99.95	99.99	99
Ambient PM10 % compliance A level <sup>2</sup>	99.98	100	100	100	100
<b>Port Alberni</b>					
Direct GHGs as tonnes CO <sub>2</sub> e/year <sup>3,4</sup>	115,125	101,945	95,203	95,000	63,293
Direct GHGs as kg CO <sub>2</sub> e/adt <sup>3,4</sup>	310	290	270	256	178
Particulate matter kg/day <sup>5</sup>	510	668	329	250	123
Particulate matter kg/adt <sup>5</sup>	0.44	0.56	0.26	0.22	0.122
Power Boiler dioxin ng/m <sup>3</sup> TEQ <sup>6,7</sup>	no test	1.00	0.27	0.24	0.12
Ambient PM10 % compliance A level <sup>2</sup>	100	100	100	100	100
<b>Powell River</b>					
Direct GHGs as tonnes CO <sub>2</sub> e/year <sup>3,4</sup>	91,634	78,773	71,450	79,393	16,005
Direct GHGs as kg CO <sub>2</sub> e/adt <sup>3,4</sup>	157.0	133.27	122.7	125.9	37.3
Particulate matter kg/day <sup>5</sup>	2,317	1,835	1,564	822	75
Particulate matter kg/adt <sup>5</sup>	1.58	1.06	0.97	0.39	0.06
Power Boiler dioxin ng/m <sup>3</sup> TEQ <sup>6,7</sup>	0.035	0.044	0.082	0.045	0.016
Ambient PM10 % compliance A level <sup>2</sup>	100	100	100	100	100
Port Alberni and Powell River are paper mills and do not produce kraft pulp. Kraft production involves chemical processes not directly involved in paper manufacturing. Powell River's pulp mill was closed in November 2001.					
1 <b>A Level TRS:</b> British Columbia's 'A' level ambient odour objective is 2 parts per billion average or less over a 24 hour day. Percentage compliance with this objective is a measure of the percentage of days in the year in which the daily average was at or below 2 parts per billion.	have a stronger warming effect than others and the CO <sub>2</sub> e measure provides an appropriate comparison of the warming effects of every greenhouse gas.		6 <b>Power Boiler:</b> large burner designed to burn woodwaste from sawmills to generate electricity and steam for the mill operations.		
2 <b>Ambient PM10:</b> a measure of ambient levels of fine particulate of less than or equal to 10 microns in size. B.C.'s A Level PM10 objective is 50 micrograms per cubic metre.					
3 <b>CO<sub>2</sub>e:</b> is the effective greenhouse gas emission expressed as equivalent tonnes of carbon dioxide. Some greenhouse gases	4 <b>Greenhouse Gases (GHG):</b> a group of gases that contribute to changes in the planet's atmosphere, trapping heat from radiating out into space and causing an increase in global temperatures. Carbon dioxide is the greenhouse gas mostly produced from combustion of fossil fuels.		7 <b>Power Boiler Dioxins:</b> low levels of chlorinated compounds produced by the combustion of sea salt laden woodwaste. Power boiler dioxins are expressed as dioxin equivalent units (TEQ).		
	5 <b>Particulate Matter:</b> small particles originating from stack emissions or other sources like chip piles.		8 <b>TRS – Total Reduced Sulphur Gases:</b> gases which have the characteristic smell of rotten eggs and cabbage that are emitted from kraft pulp mill operations and effluent treatment systems.		

## Air Emissions

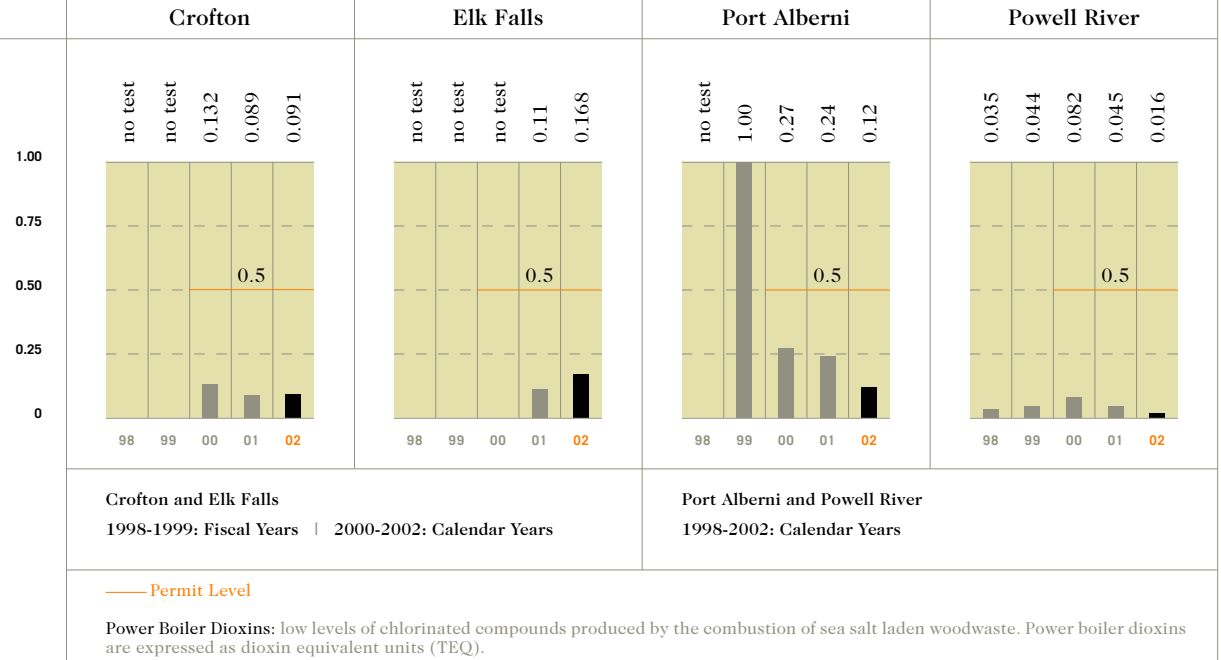
Direct GHGs ..... tonnes CO<sub>2</sub>e/yr

Particulate Matter ..... kg/day

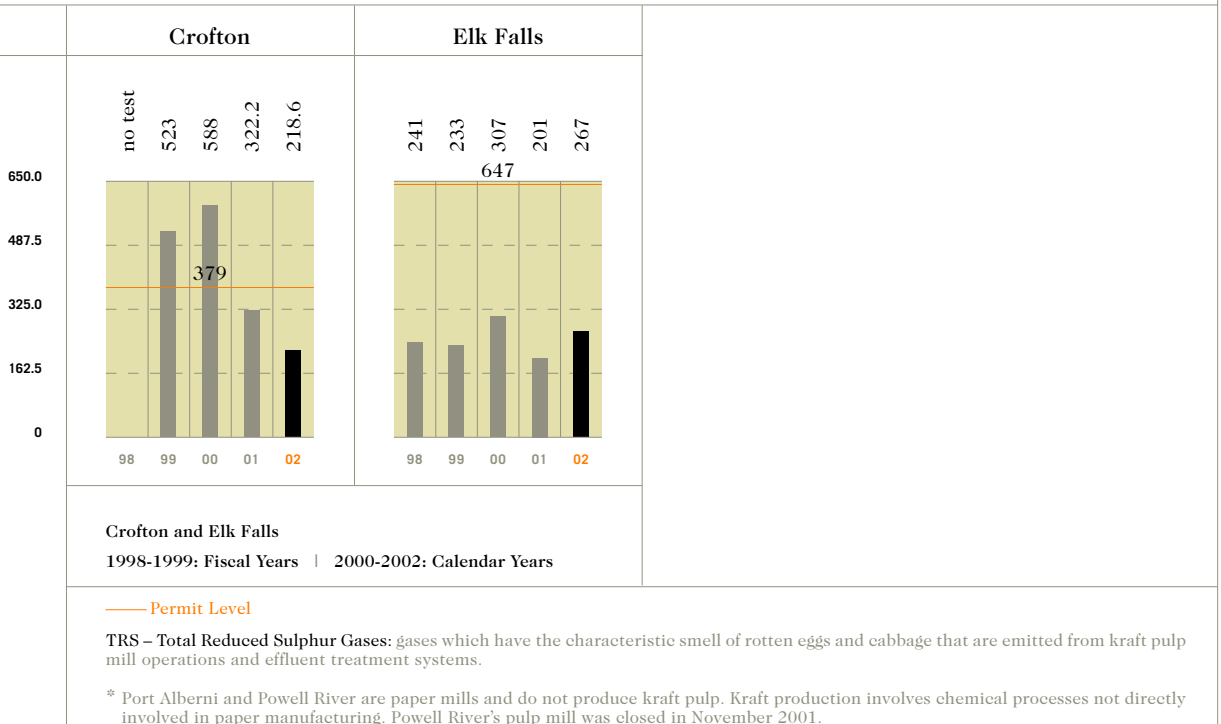




## Air Emissions

Power Boiler Dioxins ..... ng/m<sup>3</sup> TEQ

TRS – Total Reduced Sulphur Gases ..... kg/day



## Safeguarding Water Quality



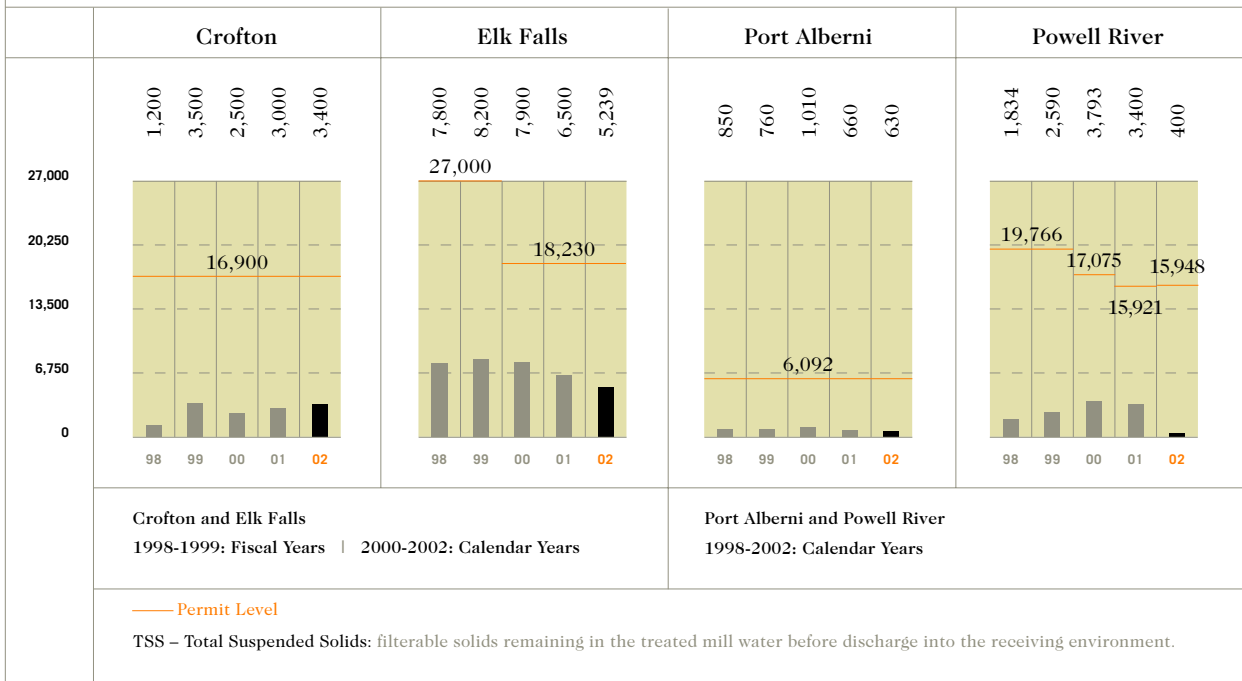
Mill wastewater passes through primary and secondary effluent treatment systems before being discharged into receiving waters. Primary treatment reduces solids through settling, while secondary treatment uses micro-organisms to reduce the effluent's biochemical oxygen demand and toxicity. Effluent quality improved following installation of secondary treatment systems at the four operations in the early 1990s.

Adsorbable organic halides (AOX) are a family of chemical compounds created as a byproduct of the kraft bleaching process when chlorine dioxide reacts with pulp fibres. In 1992, the government of British Columbia mandated the elimination of AOX in mill effluent by December 31, 2002. In July 2002, this regulation was amended to 0.6 kilograms per tonne of pulp produced effective December 31, 2002. This is similar to legislation recently enacted in the United States. All our facilities operate below this new limit. Crofton and Elk Falls respectively averaged 0.36 and 0.44 kg of AOX discharged per tonne of pulp in 2002. The Port Alberni and Powell River mills do not produce kraft pulp or use a brightening process involving chlorine or chlorine derivatives, and therefore do not produce AOX or dioxins in their effluent.

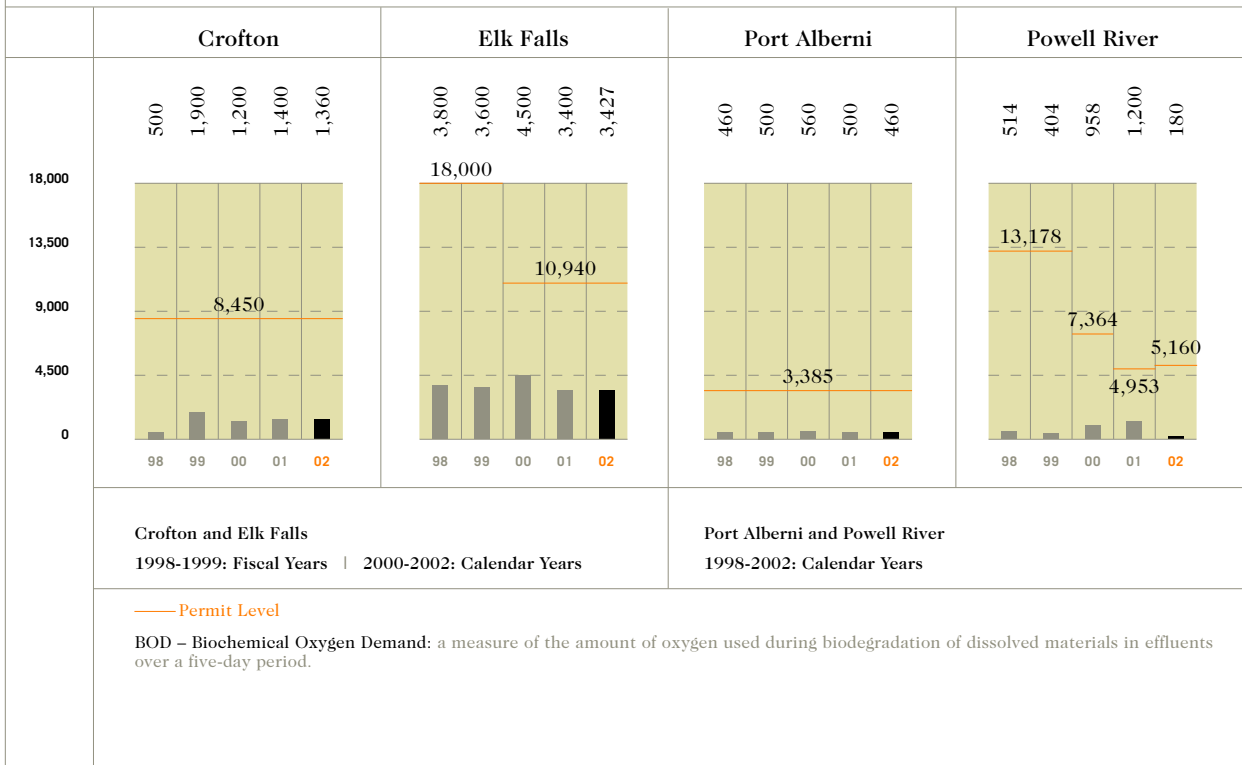
Effluent					
	1998	1999	2000	2001	2002
<b>Crofton</b>					
Water use m <sup>3</sup> /adt	99.7	94	87.3	80.1	77.8
TSS kg/day <sup>5</sup>	1,200	3,500	2,500	3,000	3,400
TSS kg/adt <sup>5</sup>	1.9	1.9	1.3	1.9	1.8
BOD kg/day <sup>2</sup>	500	1,900	1,200	1,400	1,360
BOD kg/adt <sup>2</sup>	1	1	0.62	0.79	0.70
AOX kg/day <sup>1</sup>	390	497	390	341	369
AOX kg/adt <sup>1</sup>	0.43	0.48	0.38	0.35	0.36
2378 TCDD ppq <sup>3</sup>	ND	ND	ND	ND	ND
2378 TCDF ppq <sup>3</sup>	ND	ND	ND	ND	ND
Trout toxicity % compliance <sup>4</sup>	100	100	100	100	100
<b>Elk Falls</b>					
Water use m <sup>3</sup> /adt	102	93	85	83	80
TSS kg/day <sup>5</sup>	7,800	8,200	7,900	6,500	5,239
TSS kg/adt <sup>5</sup>	3.87	3.74	3.45	2.92	2.43
BOD kg/day <sup>2</sup>	3,800	3,600	4,500	3,400	3,437
BOD kg/adt <sup>2</sup>	1.89	1.64	1.96	1.53	1.59
AOX kg/day <sup>1</sup>	450	501	442	371	403
AOX kg/adt <sup>1</sup>	0.69	0.61	0.58	0.49	0.44
2378 TCDD ppq <sup>3</sup>	ND	ND	ND	ND	ND
2378 TCDF ppq <sup>3</sup>	11	5.1	21	24	28.5
Trout toxicity % compliance <sup>4</sup>	100	100	83	92	100
<b>Port Alberni</b>					
Water use m <sup>3</sup> /adt	128	118	111	107	121.5
TSS kg/day <sup>5</sup>	850	760	1,010	660	630
TSS kg/adt <sup>5</sup>	0.71	0.66	0.86	0.55	0.65
BOD kg/day <sup>2</sup>	460	500	560	500	460
BOD kg/adt <sup>2</sup>	0.38	0.44	0.48	0.42	0.47
Trout toxicity % compliance <sup>4</sup>	100	100	100	100	100
<b>Powell River</b>					
Water use m <sup>3</sup> /adt	127.7	128.9	120.1	95.2	97.1
TSS kg/day <sup>5</sup>	1,834	2,590	3,793	3,400	400
TSS kg/adt <sup>5</sup>	1.25	1.70	2.18	2.00	0.2
BOD kg/day <sup>2</sup>	514	404	948	1,200	180
BOD kg/adt <sup>2</sup>	0.35	0.27	0.55	0.70	0.1
Trout toxicity % compliance <sup>4</sup>	100	100	100	100	100
ND: non-detectable – test result was below 2 parts per quadrillion					
<div> <div> 1 AOX – Adsorbable Organic Halides: a measure of the amount of chlorine bound to an organic substance. Occurs in kraft operations in the bleaching process. 2 BOD – Biochemical Oxygen Demand: a measure of the amount of oxygen used during biodegradation of dissolved materials in effluents over a five-day period. 3 Dioxins and Furans: specific chlorine-containing compounds that have been detected in trace amounts in pulp and paper facility emissions. 2378 TCDD &amp; 2378 TCDF denote specific dioxin and furan substances. A non-detection result is noted as ND. 4 Trout Toxicity: a standard test that exposes juvenile rainbow trout to liquid substances for 96 hours. If less than 50% of the fish die, the substance is considered non-toxic. 5 TSS – Total Suspended Solids: filterable solids remaining in the treated mill water before discharge into the receiving environment. </div> </div>					

## Effluent

TSS ..... kg/day

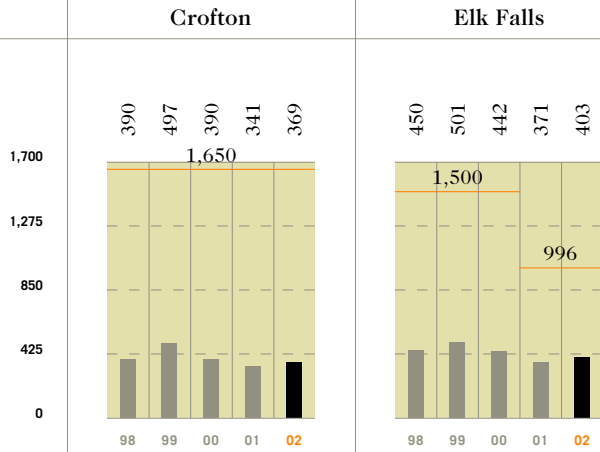


BOD ..... kg/day



## Effluent

AOX ..... kg/day



**Crofton and Elk Falls**  
1998-1999: Fiscal Years | 2000-2002: Calendar Years

— Permit Level

**AOX – Adsorbable Organic Halides:** a measure of the amount of chlorine bound to an organic substance. Occurs in kraft operations in the bleaching process.

Port Alberni and Powell River are paper mills and do not produce kraft pulp. Kraft production involves chemical processes not directly involved in paper manufacturing. Powell River's pulp mill was closed in November 2001.

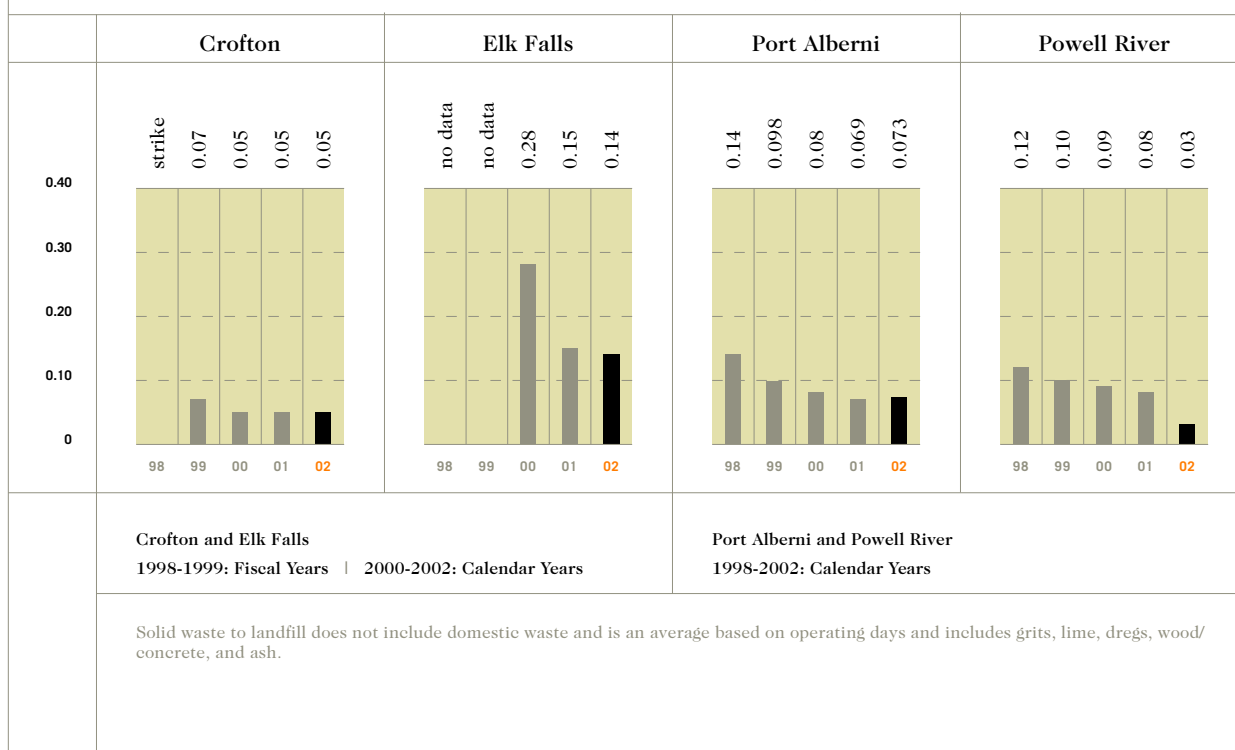
## Reducing Solid Waste

NorskeCanada is committed to reducing solid waste at its operations. Typical solid waste materials generated at our mills include boiler wood ash, lime mud from the recausticizing process, sludge from effluent treatment systems and unusable wood refuse. Elk Falls expects to reduce volumes of ash disposed in landfills as a result of the shutdown of the No. 3 power boiler as well as increased combustion efficiency associated with burning coal. All four mills recycle solid wastes wherever possible, including woodwaste, metal, paper and waste oil.

### Solid Waste to Landfill ..... cubic metres per air dried tonne of production

	1998	1999	2000	2001	2002
Crofton	strike	0.07	0.05	0.05	0.05
Elk Falls	no data	no data	0.28	0.15	0.14
Port Alberni	0.14	0.098	0.08	0.069	0.073
Powell River	0.12	0.10	0.09	0.08	0.03

### Solid Waste to Landfill ..... cubic metres per air dried tonne of production



## Operations

NorskeCanada's four mills, at Crofton, Campbell River, Port Alberni and Powell River, are located within a 160-kilometre radius on British Columbia's coastal waters. Products from the Company's 12 paper machines, three pulp lines and one kraft paper machine are shipped to customers in North America, Asia, Central and South America and Europe.



It's a newspaper, a magazine, a catalogue, a telephone directory, a way to communicate and share information; it's paper, it's our product and we're proud of it. But our pride doesn't blind us to our responsibility to the environment in which we operate.

Being environmentally responsible is important because we make a lot of paper – 1.9 million tonnes a year to be exact – which ranks us as the world's largest producer of directory paper, the largest producer of groundwood paper in western North America, and the third largest newsprint and groundwood company on the continent by production capacity. We also produce 400 million tonnes of pulp per year.

Our customers include North America's leading publishers and commercial printers.

## Environmental Policy

NorskeCanada is accountable for the impact of its operations on the environment and we accept responsibility for the conservation and sustainability of the resources we consume.

While the company's products play an important role in contemporary society, we are mindful that they too must represent the highest standards of environmental integrity we can provide.

NorskeCanada is committed to the principle of continuous improvement and reviews its policies and practices against external benchmarks with the help of independent advisors and partners. The company works cooperatively and collaboratively with those who contribute positively, through advice or criticism, to the betterment of its environmental performance. Day-to-day, the responsibility for environmental performance rests with all employees.

In the application of this policy, NorskeCanada commits to:

- ▶ Adhere to the principles of conservation and sustainability
- ▶ Meet the requirements of all relevant environmental legislation
- ▶ Be fully transparent in the public disclosure of our environmental performance
- ▶ Strive to eliminate pollution at its source
- ▶ Set environmental objectives and targets to support our goals
- ▶ Operate our facilities with respect for the values of surrounding communities
- ▶ Continually improve our environmental performance



Russell J. Horner  
President and Chief Executive Officer  
NorskeCanada  
July 2003



## Our Products

Capacities are as at December 31, 2002

### Specialty Printing Papers 1,073,000 tonnes

Lightweight coated  
209,000 tonnes



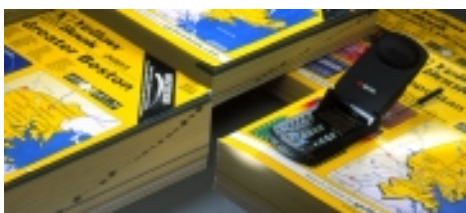
 **electracote**

Soft-calendered and machine-finished high brites  
377,000 tonnes



 **electrabrite**  **electracal**  **electraprime**  
 **electrasoft**  **electrastar**

Directory  
373,000 tonnes



 **catalyst**

Kraft Paper  
114,000 tonnes



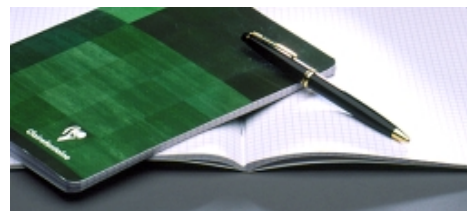
 **silverliner**

Newsprint  
872,000 tonnes



 **marathon**

Market Pulp  
410,000 tonnes



 **elk prime**

## Contact Us

Visit us online at [www.norskecanada.com](http://www.norskecanada.com)

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