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Nola Joyce Buhr

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**ENVIRONMENTAL DISCLOSURE: AN EMPIRICAL STUDY OF
CORPORATE COMMUNICATION IN CANADA AND THE ROLE OF ACCOUNTING**

by

Nola Buhr

Western Business School

**Submitted in partial fulfilment
of the requirements for the degree of
Doctor of Philosophy**

**Faculty of Graduate Studies
The University of Western Ontario
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ABSTRACT

This empirical thesis provides an in-depth description of the evolution and the current state of environmental disclosure in Canada. A multi-dimensional classification framework was specifically designed for this thesis to perform content analysis of environmental disclosure. The framework was developed with 25 sub-categories to capture: subject matter being discussed; type of information used; location of information in the annual report; and tense of information. This classification framework will be useful in future to analyze other aspects of environmental disclosure.

A random sample of 183 annual reports from 40 companies listed on the TSE; one environmental report; 79 pieces of additional external disclosure; and 17 interviews with disclosure preparers in eight companies were utilized to address five basic questions:

- (1) What is the quantity and nature of the environmental disclosure currently being provided in annual reports and other media?
- (2) Has there been a change in the quantity and nature of environmental disclosure over time?
- (3) What are the characteristics of firms providing environmental disclosure?

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CHAPTER ONE

OVERVIEW

Section 1.1 INTRODUCTION

A recent study of 95 of the annual reports of Canada's largest corporations was conducted by KPMG Environmental Services Inc. (Harris, 1992). It was found that 58% of the annual reports reviewed contained comments on environmental matters. However, only 23% of the annual reports studied provided quantitative information concerning financial costs and capital expenditures on the environment.

Another study of annual reports from TSE (Toronto Stock Exchange) 300 companies (Blunn, 1992) indicates that more companies are addressing environmental issues in their annual reports. In 1991, 47% of the annual reports studied provided some type of discussion of environmental issues. This compares to 29% in 1989.

However, this study found that most of the environmental sections in annual reports were limited to "pleasing photographs and examples of corporate actions and successes (p. s31)." In 1991, 21% of the annual reports explained financial impact (of environmental issues) and 19% of the

annual reports quantified financial impact (of environmental issues). This compares to 10% and 5% respectively for 1989. These findings are consistent with the United Nations Economic and Social Council report (1992).

Hence, while environmental issues are becoming a more common part of corporate communication, the amount of financial information pertaining to such issues appears to be limited (albeit growing).

But, what financial information should be provided?

Accounting is generally seen to be a social science which provides information (ex ante) to markets (defined in a broad sense) and monitors (ex post) accountability relationships. It has been defined in A Statement of Basic Accounting Theory (AAA, 1966, p. 1) as:

the process of identifying, measuring, and communicating economic information to permit informed judgments and decisions by users of the information.

However, such general descriptions and definitions do not advise specifically what the role of accounting should be with regard to environmental issues. Thus far, only one aspect of environmental issues has been addressed by the CICA Handbook. This is the need to recognize the costs of site restoration on an ongoing basis. Under Canadian

generally accepted accounting principles, for fiscal periods commencing on or after December 1, 1990:

When reasonably determinable, provisions should be made for future removal and site restoration costs, net of expected recoveries, in a rational systematic manner by charges to income (Canadian Institute of Chartered Accountants, 1990, 3060.39, p.1141(5)).

The general descriptions and definitions of accounting also fail to circumscribe the realm of accounting. Is accounting limited to what is presented in the Financial Statements? Or, does the Management Discussion and Analysis section of the annual report contain accounting information? Perhaps, accounting has a role to play in the entire annual report? And, what about earnings announcements which are found outside the annual report and are commonly considered accounting information?

A recent CICA research study, Information to be Included in the Annual Report to Shareholders (1991) indicates that accounting has some role to play in the entire annual report. The committee that produced this study had this to say about environmental disclosure and the annual report:

The environment is everyone's business. "Environmental responsibility" information is essential in the annual report because it enables diverse user groups to better understand the nature of operations of companies in various industries, the potential impact on cash flows, and the ability to effectively manage environmental risk (p. 97).

Thus, there exist multi-faceted problems concerning environmental reporting:

- (1) What environmental issues should accounting address?
- (2) What information regarding these issues should be the concern or in the domain of accounting?
- (3) Where in the annual report should this information be provided?
- (4) Should this environmental information be provided in an ex ante (prospective) or ex post (retrospective) manner?

Thus far, studies of environmental disclosure such as Blunn (1992) and Harris (1992) are not representative of Canadian corporations in general and may lack the depth necessary to adequately describe the nature of environmental disclosure.

Therefore, this thesis addresses these multi-faceted problems and limited understanding of the current state of environmental disclosure in Canada.

The first purpose of this thesis is to describe the current practice of environmental performance reporting in Canada. Before normative responses to these multi-faceted problems can be formulated, it is necessary to describe the evolution and the current state of environmental performance reporting.

Such a description is developed in this thesis to address all four components of the problem: subject matter, type of information, location of information and time orientation of information. These four components describe different aspects of environmental disclosure and shall be referred to in total as the nature of environmental disclosure. This description also captures the quantity of environmental disclosure currently being provided.

The second purpose of this thesis is to determine what changes have happened in the quantity and nature of environmental disclosure over time.

The third purpose of this thesis is to determine the characteristics of firms disclosing this information.

The fourth purpose of this thesis is to explore the proportion of accounting information within the environmental disclosure and the extent of an accounting function involvement in developing this information.

The fifth purpose of this thesis is to explore the management process behind the production of environmental disclosure.

Section 1.2 THE RESEARCH QUESTIONS

Thus, Canadian corporate environmental disclosure is examined with five basic questions in mind:

- (1) What is the quantity and nature of the environmental disclosure currently being provided in annual reports and other media?
- (2) Has there has been a change in the quantity and nature of environmental disclosure over time?
- (3) What are the characteristics of firms providing environmental disclosure?
- (4) What is the extent of accounting information found in the environmental disclosure and what is the role of accountants in producing the environmental disclosure?
- (5) What is the management process behind the production of environmental disclosure?

(1) What is the quantity and nature of the environmental disclosure currently being provided in annual reports and other media?

Nature of Environmental Disclosure

Nature of environmental disclosure is determined by four distinct characteristics:

(a) Subject matter

(What environmental issues should accounting address?);

(b) Type of information

(What information regarding these issues should be the concern or in the domain of accounting?);

(c) Location of information

(Where in the annual report should this information be provided?); and

(d) Tense of information

(Should this environmental information be provided in an ex ante (prospective) or ex post (retrospective) manner?).

(a) Subject matter

Corporate disclosure is used by a variety of users for a variety of purposes. However, there are likely some common issues which users want addressed: (1) economic impact of corporate environmental activities; (2) compliance with environmental legislation; and (3) pollution abatement activities. Users also want information on the risks that the firm faces because of its environmental impact.

This thesis documents the various topics discussed in environmental disclosure.

(b) Type of information

A general scrutiny of some recent annual reports indicates that there is a broad range of information provided on environmental issues. Some of the information quantifies, in dollars, environmental issues, such as capital expenditures. Some of the information explains financial impact using terms such as costs, savings, investment in equipment. Some of the information details corporate risk management programs and discusses the results of environmental audits and corporate compliance with environmental laws. These types of information would be seen by many to be information within the purview of accounting (e.g., Boritz, 1990). For the purposes of this thesis, this information is deemed to be accounting information.

Some of the information provided merely affirms that corporate management thinks that the environment is an important issue. Some of the information provided discusses government regulations without an indication of whether or not the corporation is in compliance with regulations. This type of information is clearly not accounting information.

In essence, there is a continuum of information that ranges from dollars spent on environmental issues (accounting information) to general platitudes about the environment

(non-accounting information). Chapter Three will document the various levels of information in more detail.

(c) Location of information

Much of the accounting research done in the area of environmental disclosure has been limited to disclosure in the annual report (e.g., Bowman and Haire, 1975; Ingram and Frazier, 1980; and Wiseman, 1982). However, in recent years corporations have begun to issue environmental reports separate from annual reports (e.g., Falconbridge, Noranda Minerals, Noranda Forest, Ontario Hydro, Shell Canada).

By 1993, environmental disclosure had become common enough that The Financial Post Annual Report Awards included awards for environmental reporting. The industry categories included mining, oil and gas, paper and forest products and industrial products - primary manufacturers. Many of the companies that entered the competition provided environmental reports to be judged in addition to the environmental disclosure in their annual reports.

Corporations also disclose information through such diverse vehicles as filings with securities commissions, press releases, trade magazine articles and public relations brochures. Therefore, accounting and non-accounting

information about environmental issues may be disclosed in these other sources as well.

Within the annual report, there is also a question of where is the information located. Essentially there are four possible areas:

- (i) Audited Financial Statements;
- (ii) Management Discussion and Analysis;
- (iii) Letter to Shareholders; and
- (iv) Corporate Overview (balance of the annual report).

The credibility aspect of information presented in the annual report declines (aside from whatever faith the user wishes to place in management's integrity in reporting) as the user moves down the list from Financial Statements to Corporate Overview. The Financial Statements are attested to by an independent, external auditor ensuring maximum credibility. The Management Discussion and Analysis section, while mandated by the Ontario Securities Commission (OSC) is only reviewed by the OSC on a sample basis. Thus credibility is reduced. The Letter to Shareholders maintains some credibility because the president and/or CEO affix their signatures to the letter. The only credibility that the Corporate Overview section has is that it is reviewed by the external auditor in conjunction with the Financial Statements.

(d) Tense of information

Information can be presented in past, present or future tense. Information in past or present tense is retrospective and focuses on stewardship reporting. Information in future tense is prospective and focuses on reporting management's strategy and plans. Retrospective and prospective reporting serve different purposes and will be valued differently by different users.

Capturing the Nature of Environmental Disclosure

Therefore, this thesis classifies the various types of information being presented in corporate disclosure of environmental issues and identifies which types may be considered accounting information.

In order to obtain a more complete understanding of what information is being communicated, this thesis examines, on a sample basis, a broad range of disclosure vehicles which includes: annual reports, environmental reports, filings required by the Ontario Securities Commission and items found in the public press. Also, this thesis documents where in the annual report the environmental disclosure is being presented.

Additionally, this thesis classifies the information according to its tense and retrospective or prospective focus.

(2) Has there has been a change in the quantity and nature of environmental disclosure over time?

Blunn (1992) would seem to indicate that environmental disclosure is a rapidly growing phenomenon. This thesis seeks to determine if this is indeed the case. This thesis also seeks to determine if environmental disclosure is a recent phenomenon or if it has been in use for several decades.

(3) What are the characteristics of firms providing environmental disclosure?

Several researchers have explored the relationship between disclosure in annual reports and firm characteristics such as size, profitability, market rate of return, listing status, risk and industry (e.g., Buzby, 1975; Cowen, Ferreri and Parker, 1987; Singhvi and Desai, 1971; and Trotman and Bradley, 1981). However, there does not appear to have been any study of such relationships in a Canadian context.

This thesis seeks to explore the relationships between corporate environmental disclosure in annual reports and firm characteristics with a view to confirming prior research and extending it to the Canadian context.

(4) What is the extent of accounting information found in the environmental disclosure and what is the role of accountants in producing the environmental disclosure?

Blunn (1992), Harris (1992) and the United Nations Economic and Social Council (1992) all found that the environmental disclosure that is currently being provided lacks information about the financial impact of the company's environmental performance.

This thesis seeks to determine what portion of the environmental disclosure is accounting information. Also, this thesis seeks to determine what role the accounting function currently plays in producing this information.

(5) What is the management process behind the production of environmental disclosure?

Aside from Gibbins, Richardson and Waterhouse (1990, 1992a, 1992b); Richardson, Gibbins and Waterhouse (1989); Waterhouse, Gibbins and Richardson (1993) and Lev (1992), little

research has been performed to examine the management process behind the generation of corporate disclosure. The decision to present corporate disclosure is not taken lightly. There are many costs that the firm incurs (Diamond, 1985; Dye, 1990; Leftwich, Watts and Zimmerman, 1981; Pastena and Ronen, 1979; and Verrecchia, 1983) in doing so: costs associated with the release of proprietary information; costs associated with the reaction to the disclosure of "bad news"; costs associated with collecting and organizing the disclosure information; and the costs associated with disseminating the information.

The disclosure process involves a diverse range of personnel both internal and external to the firm. The accounting function is not responsible for the full extent of corporate disclosure. Therefore, it would be valuable to examine the accountant's role.

This thesis seeks to provide evidence concerning current management disclosure practices regarding corporate environmental performance. The thesis also seeks to determine the accountant's role in providing this disclosure.

Section 1.3 THE STUDY

The study proceeds in four stages:

Stage I - Study of annual reports;

Stage II - Study of environmental reports;

Stage III - Study of additional disclosure; and

Stage IV - Interviews of disclosure preparers.

Stage I

During Stage I, a random sample of 40 TSE companies was drawn, 10 each from four industries. In order to investigate the growth of environmental disclosure, the annual reports for these companies were examined for the following years: 1969, 1979, 1989, 1990 and 1991. (At the initiation of this study, 1991 was the most recent year end available for annual reports.)

This sample was analyzed by means of content analysis. Content analysis is a research tool which places narrative text into categories in order to derive conclusions about thematic content. Through the use of content analysis, I addressed the first and second research question. I developed an understanding of the environmental issues that were being disclosed and the nature of information used to

discuss these issues. I also determined if the quantity and nature of environmental disclosure has changed over time.

Research question three also was addressed during this stage. Measures of firm characteristics were taken from the literature and compared with the results of the content analysis. This process provided evidence whether or not there is a relationship between certain firm characteristics and environmental disclosure in annual reports.

This stage also addressed research question four and determined what portion of the environmental disclosure can be defined as accounting information.

Stage II

During Stage II, environmental reports were obtained, where they existed, for the 40 companies for the five years under study. After a 100% census of the 40 companies in the sample, I found that only one environmental report was produced by the companies in the sample for the years under study. Content analysis was performed on this report to extend the evidence gathered to answer the first and second research questions.

During this stage, a comparison was made between information presented in the annual report and information presented in the environmental report.

Stage III

The thesis then proceeded to Stage III. In this stage, a sub-sample of eight companies, two from each industry, were selected from the main sample of 40. For this sub-sample, all other public disclosure with environmental content was obtained for the year 1991. Except for two companies, this additional disclosure consisted of filings required by the Ontario Securities Commission. This disclosure was analyzed by way of content analysis and compared to annual reports and environmental reports produced by the firms in question for 1991. This stage addresses research questions one and two.

Stage IV

During Stage IV, interviews were conducted with managers responsible for producing environmental disclosure. This addressed research questions four and five. The interviews followed a pre-established questionnaire which included sixteen open-ended questions. The focus of discussion was all environmental disclosure produced by the firm during

1991. Disclosure practices subsequent to this time frame also were discussed.

Interview results were used to provide evidence to determine the nature of the management of the environmental disclosure process and the role of the accounting function within this process.

Section 1.4 OUTLINE OF REMAINDER OF DOCUMENT

The remainder of this document is divided into seven chapters.

The second chapter begins by discussing accountability and presenting arguments to support the notion that accounting is a changing discipline. Then the chapter provides a review of the literature and discusses research done in the area of environmental disclosure. Next, it identifies the disclosure information currently being sought. The chapter concludes with a four class framework which identifies eight categories to classify environmental issues and ten categories to classify the type of information being used to discuss the environmental issue.

The third chapter discusses the methodological aspects of the thesis. It describes the following: the sample under

study, data gathering methods and content analysis methods, (i.e., classification schemes). Finally, the chapter defines the research questions.

The fourth chapter presents the results and interpretation of Stage I of the study, the content analysis of 183 annual reports.

The fifth chapter presents the results of Stage II of the study. Only one company issued an environmental report for only one of the years under study. Therefore, there are limited conclusions that can be drawn from this stage of the research.

The sixth chapter presents the results and interpretation of Stage III of the study, the content analysis of additional public disclosure for the year 1991 for a sub-sample of eight companies.

The seventh chapter presents the results and interpretation of Stage IV of the study, interviews with disclosure preparers.

The eighth and final chapter presents conclusions from the thesis.

CHAPTER TWO

LITERATURE SURVEY

Section 2.1 INTRODUCTION

This chapter reviews the accounting literature associated with environmental disclosure, and disclosure in general. Section 2.2 discusses concepts of the social contract and accountability which form the "first principles" by which environmental disclosure is important. Section 2.3 points out the need for a new and changing role for accounting in the realm of environmental disclosure. Section 2.4 describes the research performed in the area of environmental disclosure. Section 2.5 examines the broader context of narrative disclosure, voluntary disclosure and disclosure management. Section 2.6 briefly discusses the need for research on environmental disclosure. Section 2.7 provides a description of environmental disclosure currently being sought and recommended by various bodies. Section 2.8 provides a summary and conclusion to the chapter.

Section 2.2 THE SOCIAL CONTRACT AND ACCOUNTABILITY

The corporate form of ownership allows for the amassing of capital to provide society with goods and services that

would not otherwise be provided. However, because the corporation is part of a larger social system it must be responsive to society's expectations if it is going to continue to survive.

This view is based on legitimacy theory and the notion of social contract (Dowling and Pfeffer, 1975; Lindblom, 1993; Pfeffer and Salancik, 1978; Richardson, 1987; and Sethi, 1979) in which the corporation must perform sufficient socially desired activities in return for social approval and continued existence. In order to obtain this approval, the corporation must ensure that its activities are legitimate or of worth to the larger social system.

Over time, activities that are merely socially desired become required as social expectations are entrenched in law, government regulations and cultural norms. New social expectations arise and new activities are seen as being socially desirable. "A specific action is more or less socially responsible only within the framework of time, environment, and the nature of the parties involved (Sethi, 1979, p. 64)." Thus, the corporation must cope with this moving target concept (Churchill, 1974) and determine whether it will focus its activities on meeting legislation or acting in advance of legislation and meeting the newest of social expectations.

Because of the existence of the implicit social contract, the corporation becomes accountable, to one degree or another, to society. Until the past few decades corporations were seen to be accountable only to investors. However, there has been a broadening of accountability. Corporations are now seen to be accountable to many stakeholders.

Broad Range of Stakeholders

A CICA research study, Corporate Reporting: Its Future Evolution (1980), provides a detailed listing of the users to whom the corporation should report. There are 15 different categories of users who have a legitimate interest in receiving financial information from the corporation. These user groups are: shareholders (present and potential); creditors - long term (present and potential); creditors - short term (present and potential); analysts and advisors; employees (present, past and potential); non-executive directors (present and potential); customers (present, past and potential); suppliers (present and potential); industry groups; labour unions; government departments and ministers; public-political parties; regulatory agencies; other companies; and standard setters and academic researchers.

The annual report has traditionally been the means to satisfy accountability relationships with investors and creditors. It is also the key document used to satisfy a broad range of stakeholders. However, there are other communication vehicles which the corporation uses to convey messages to its stakeholders. Most notable is the recent use of an "environmental report." For example, Ontario Hydro, Noranda Minerals, Noranda Forest, Falconbridge, and Shell Canada have produced such reports. The title of these reports varies from company to company. (For example, Environmental Review, Environmental Report or, in the case of Shell Canada, "Progress Toward Sustainable Development 1991 Review.") For consistency, this thesis refers to such documents as environmental reports.

Deloitte Touche Tohmatsu International (1993, pp. 37-40) ranks the audiences of environmental reports as follows: (1) Employees; (2) Local Communities; (3) Shareholders; (4) Environmental Campaigners; (5) Regulators; (6) Media; (7) Trade and Industry Customers; (8) Financial Community; (9) Consumers; and (10) Classroom.

But answering the question "To whom is the corporation responsible?" only asks half of the question. There is also the question "For what is the corporation responsible?".

Accounting has developed over many centuries to satisfy the need for accountability which was created by the separation of owners and managers. Accounting will have to continue to develop to fulfil this broadening notion of accountability.

Corporate responsibility

One key area where accountability is expanding, is in the area of corporate environmental performance. Society is placing increasing emphasis on the importance of the environment and managing the environment in a more responsible manner (Dunlap and Scarce, 1991). This is evidenced by the United Nations Conference on Environment and Development held in Rio de Janeiro, June 3 to 14, 1992. Nationally, there is the establishment of Canada's Green Plan by the Federal Government in 1990 which "expresses the Government's commitment to work with Canadians to manage our resources prudently and to encourage sensitive environmental decision-making (Government of Canada, Canada's Green Plan In Brief, Statement by the Prime Minister, 1990, forward)."

Within the environmental arena, there is a continuum of attitudes which must be considered when determining the extent of corporate responsibility. At one end of the continuum are those that adhere to the economic paradigm and

at the other end are those that adhere to the ecological paradigm.

Those that follow the economic paradigm suggest that the only social responsibility the corporation has is to maximize long-term shareholder return. The adherents of this view, usually attributed to Milton Friedman (1962), argue that efficient resource allocation in society can only be achieved by pursuing enlightened self-interest through a market economy. This would include, of course, complying with all laws, environmental or otherwise.

Within this paradigm, there are those who are concerned that the market is flawed and does not price goods to reflect the full cost of environmental resources such as air, soil and water. Their solution is to adjust the markets in order to impound the costs and benefits of externalities into the price of goods and services. For example, one way to do this might be to sell pollution rights through a market-based mechanism.

Those that follow the ecological paradigm reject a market based approach to the way in which society manages the environment. The proponents of this paradigm are referred to as deep green. Buchholz (1991), for example, takes this deep green approach by asserting that as long as we maintain

our human-centred view of the world we will continue to use the economic paradigm. However, the deep greens assert that the economic paradigm is no longer sufficient to address the environmental problems that we face today. Instead of an anthropocentric view of the world, we need to take an ecocentric view. In short, there needs to be a change in human consciousness akin to the change experienced when we discovered that the sun did not revolve around the earth.

Although the economic paradigm still has more adherents than the ecological paradigm, it is possible that we are experiencing a societal paradigm shift. However, the shift does not appear to be in favour of the deep green. Rather, it appears as though there is a movement towards a marriage of the two paradigms - the ecological and the economic. This emerging view is known as sustainable development.

Sustainable Development

Sustainable development is broader and more complex than the notions of environmental protection because it incorporates environmental protection and economic development.

Sustainable development has been defined as follows:

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development, 1987, p. 43).

Even if a corporation does not embrace the concepts of sustainable development, it must as a minimum comply with environmental laws. Greening social conscience and changing social expectations have been translated into more stringent environmental laws. For example, current environmental legislation has provisions which include the imprisonment of executive officers for the violation of environmental laws. By September 1992, there had been five jail terms imposed in Canada - the longest being eight months (Canadian Press, 1992). Legislation and the cost of clean-up in Canada, which has been estimated at \$20 billion dollars (Lorinc, 1992), both ensure that business takes a hard look at its effect on the environment.

The environmental laws in the 1960's and 1970's were intended mainly to licence pollution sources and authorize remedial actions. However, the laws put in place since then are much more stringent and extensive. The Mining Association of Canada has developed a partial list of environmental legislation currently affecting the mining industry. This list is 4 pages long and comprises over 100 acts and regulations. "In all jurisdictions, environmental agencies are proposing a strengthening of environmental regulations, monitoring requirements and compliance enforcement. In addition, the permitting and approval process is being made more open to public participation, including the

right of individuals to access the courts in the event of environmental damage (Meade, 1993)."

While corporations certainly need to concern themselves with the effect that these environmental acts and regulations can have on their operations, this seems to be but one of many factors in motivating environmental performance reporting.

The Canadian Institute of Chartered Accountants (1993b, p. 3) indicates that "the major influences on organizations to record, monitor, and report their environmental performance can be categorized as follows: social responsibility; public confidence; capital markets; regulator regime; peer pressure; competitive position; and litigation."

While this thesis plans to address the issue of corporate motivation to provide environmental disclosure, there is no intent to propose causal relationships.

A pilot study performed by the author (1992) confirms the presence of environmental performance reporting in Canadian annual reports. The study examined environmental disclosure over a five year period (1986 to 1990) using a sample of ten companies consisting of five companies from the mining sector and five companies from the pulp and paper sector. It was found that all ten companies began producing

substantive environmental disclosure in their annual reports in 1989. Therefore, companies are responding to increased societal emphasis on the environment by increasing the amount of disclosure devoted to environmental issues.

This increase in disclosure may result from a change in actual corporate behaviour or it may result from a perceived need to give lip service to a stance of corporate environmental responsibility. This thesis does not attempt to measure actual behaviour and compare it with behaviour as disclosed in the annual report. Rather, this thesis investigates the quantity and nature of environmental disclosure and examines the management processes behind providing such disclosure to the public.

Section 2.3 THE ROLE OF ACCOUNTING

As accountability relationships change, the nature of accounting must change in order to serve those relationships. Accounting must change if it is to continue to serve a changing society.

The CICA Handbook provides the basis of Generally Accepted Accounting Principles. However, the Handbook is not an unchanging document. The following statement appears in the

Introduction to Accounting Recommendations in the CICA

Handbook:

Accounting is not static. It has changed in the past and will continue to adapt to changes in economic or social conditions in the future (1992b, p. 10).

We have seen many accounting changes in recent decades. For example, in response to a need for more information on cash flows, we now have a statement of changes in financial position based on cash as a required component of Financial Statements. In response to a need for information on the future prospects of a company, future oriented financial information is now seen an essential part of a prospectus. In response to inflation and its effect on historic information, we developed approaches to current value accounting, added them to the Handbook as needed and then deleted them when inflation levels dropped.

Society is beginning to demand and expect financial information on a corporation's environmental performance just as society has demanded and come to expect cash flow information, future oriented financial information and (in its day) current value information.

Financial performance and environmental performance are not two separate phenomena. Rather, they are inextricably linked. Expenditures on pollution prevention or clean-up

impacts financial performance. Process improvements instituted to improve environmental performance can also affect financial performance. Better waste management affects financial performance. Failure to comply with legislation can affect financial performance. Therefore, aside from any socially desirable reasons for being seen to be environmentally responsible, there is a need for the corporation to disclose information on environmental performance, at least as to how it affects financial performance.

There is an abundance of capital markets literature which can also be used to explain why environmental disclosure should be provided. This literature (e.g., Beaver, 1989) suggests that the efficient market hypothesis holds in the semi-strong form. Information that a firm releases will quickly be impounded into the market price of the firm's stock. This in turn will affect the cost of raising capital. Therefore, if there is a demand for such information, it will affect the cost of capital.

For example, when a prospectus is issued investors will want to know about risks and opportunities (Thornton, 1993). One of the risks facing many corporations is the need to clean up polluted sites. Someone must provide this information for inclusion in the prospectus. (If information is viewed

as necessary and is not provided in the prospectus then the firm may possibly be viewed as riskier which will increase the cost of capital.) Whether this information should be provided by accountants alone, or accountants in conjunction with other professionals such as environmental lawyers and environmental engineers depends on specific circumstances.

Roles and Responsibilities as Defined by Professional Accounting Associations

At least as early as 1973, a need was seen (Alexander, 1973) for business to develop ways to account for social issues. In fact, in 1973, the American Institute of Certified Public Accountants (AICPA) indicated that information about social issues (which includes the environment as a subset) had a role in Financial Statements. (Note: that this information is not just expected to be in the annual report but rather actually located in the Financial Statements.) In Objectives of Financial Statements (1973), the AICPA spells out the need to report on the activities of the enterprise as they affect society:

An objective of financial statements is to report on those activities of the enterprise affecting society which can be determined and described or measured and which are important to the role of the enterprise in its social environment.

Another accounting body, the CICA (Report of CICA Long-Range Strategic Planning Committee, 1986, p. 19, as quoted in CICA, 1992a, p. 10) defines the role of the CA Profession more broadly than recording and communicating dollar values of transactions.

The mission of chartered accountants is to provide services that enable decisions to be made on the effective allocation and efficient use of resources.

Such services include:

- * The design of systems to provide accounting, financial and other economic information, both quantitative and qualitative.
- * The measurement, interpretation and communication of such information.
- * The independent attestation to its credibility.

The Financial Statement Concepts section (1991a) of the CICA Handbook has the following to say about financial reporting:

Financial statements form part of the process of financial reporting that includes also, for example, information in annual reports outside the financial statements and in prospectuses and in funding proposals. While many financial statement concepts also apply to such information, this Section deals specifically only with financial statements (CICA, 1000.06).

Thus, the accountant's role is not limited to the production of Financial Statements. The realm of financial disclosure is broader than just the specific numbers compiled in accordance with GAAP. Accounting extends to the communication of information that allows users to make informed judgments and decisions.

In Canada auditors are required, under section 7500 of the CICA Handbook, to read the other information presented in the annual report and consider whether any of it is inconsistent with the Financial Statements (CICA, 1986). Therefore, since 1986, the auditor has been required to have at least limited involvement with the entire annual report. This indicates that information found elsewhere in the annual report can relate to information found in the Financial Statements.

The current definition of liabilities in the CICA Handbook also provides room for consideration of social, specifically ethical and moral, issues. Liabilities as defined by the CICA Handbook, Section 1000 extend beyond legal liabilities and include moral liabilities. Some see this as the entry-way for corporations to accrue for environmental clean-ups that are not yet required under law. The definition reads:

Liabilities do not have to be legally enforceable provided that they otherwise meet the definition of liabilities; they can be based on equitable or constructive obligations. An equitable obligation is a duty based on ethical or moral considerations. A constructive obligation is one that can be inferred from the facts in a particular situation as opposed to a contractually based obligation (1991a, 1000.34).

Although the professional accounting associations have clearly indicated that accountants currently have a role to play in providing social information, it is likely that, in the future, society will demand even more information

regarding corporate environmental performance. Accountants will have to continue to adapt to society's needs.

One way that the accounting profession will have to adapt is by becoming more involved with scientists and engineers. (This type of inter-professional involvement already takes place between accountants and actuaries in the areas of pension and insurance accounting.) The Institute of Chartered Accountants in England and Wales (1992) suggests that there needs to be an integration of scientific and financial information.

There is a need to develop meaningful ways of integrating scientific and technical environmental information with financial information about items such as expenditures, liabilities, asset values and future profitability (p. 2).

Roles and Responsibilities as Defined by Academics

Bevis (1965) has the following to say about the role of accounting and accountability and the changing ethical standards of society (p. 8):

The highest ethical attainment is reached when a man accepts this accountability as a challenge to measure himself by his willingness to report fully on the results of his own actions. Looked at in this way, a practical observer of the corporate scene can agree with the academicians that the accounting discipline works hand in hand with rising ethical standards of the society.

Further comments on the need for the accounting profession to adapt to serve society's needs have been made by Spacek (1969):

The view that a profession is a reader-serving process, not a figure-producing process, is vital for all accountants to understand. A profession begins with the public and its needs. Given the public needs, the profession develops backwards, first concerning itself with the requirements of the public (p. 153-154).

Spacek concludes his comments by referring to whom the profession serves:

We cannot adhere to the principles of accounting acceptable to business without considering the needs of and fairness to all other segments of our society. The present concept of business acceptability only, is tantamount to lack of independence. Adherence to the wishes of one segment of the economy makes us of little value to the public as a whole - the only body which we can independently serve. If we are to serve any segment to the exclusion of any other one, we are subservient, not independent (p. 155-156).

Hawkins (1977) discusses the expansion of the traditional role of accounting to include the measurement and disclosure of a corporation's social contribution. He indicates that:

The work of the social cost and human resource accountants should be followed closely, since it may lead to a significant expansion in the concept of what is considered to be the role of corporate reporting (p. 20).

Puxty (1986) examines the nature of accounting in relation to social accounting. He says that:

the nature of accounting is most clearly seen when accounting changes, because the direction in which it changes demonstrates dramatically the nature of what is changing (p. 103).

Thus, the boundaries of accounting are being pushed and challenged. The role of accounting is seen to be more than financial disclosure limited to dollar values presented in the Financial Statements. How much more has not yet been well defined. There is also a clear need articulated for accounting to adapt to meet society's changing needs. Because accounting serves society, it must change as society changes.

This thesis does not provide a definitive role for accounting in the realm of environmental disclosure. However, this thesis does examine the current role played by accounting and the accounting profession in the area of environmental disclosure.

Section 2.4 ENVIRONMENTAL DISCLOSURE LITERATURE

Environmental disclosure in annual reports has been studied by many accounting academics since the early 1970's (for example: Bowman and Haire, 1975; Freedman and Jaggi, 1982; Guthrie and Parker, 1989; Ingram, 1978; Ingram and Frazier, 1980; Rockness, 1985; Wiseman, 1982; and Zeghal and Ahmed, 1990). Much of this work focuses on annual reports from the

late 1970's. And, with the exception of Zeghal and Ahmed none of this research examines Canadian disclosure.

A good part of the earlier research in the 1970's dealt with the broader notion of social responsibility disclosure. Some of that literature is included here as it deals with the environment as one of the social issues that a corporation is held accountable for and must report on.

The discussion of the literature on environmental disclosure is broken down into the following categories:

- (a) descriptions of environmental disclosure;
- (b) environmental disclosure compared to firm characteristics;
- (c) environmental disclosure compared to environmental performance;
- (d) environmental disclosure compared to economic performance;

Discussion under each of these four categories concludes with a brief summary of the conclusions from the literature that are tested in this thesis. Most of the literature reviewed here uses some form of content analysis as a methodology. Therefore, the literature not only provides conclusions for further testing but it also provides a general methodology for undertaking the testing. Section 2.5 provides similar and additional conclusions drawn from the voluntary disclosure literature that also are tested in

this thesis. At the end of the chapter, in Section 2.8, Table 2 summarizes the various conclusions that are tested and the associated research questions under study.

(a) Descriptions of environmental disclosure

The United Nations Economic and Social Council (1992) surveyed the annual reports of 222 transnational corporations from six industries in order to assess the extent of environmental disclosure. "The survey reconfirmed on a large scale that while transnational corporations are aware of environmental issues, their disclosures remain qualitative, descriptive, partial and difficult to compare....it was not possible to gauge the environmental performance of the corporations, let alone the impact of their environmental activities on their financial results (p.2)."

The six industries examined were: chemicals; forestry and forestry products; metals; motors; petroleum and petrochemicals; and pharmaceutical, soaps and cosmetics. The annual reports were examined in eight areas:

- (a) policies and programs;
- (b) major environmental improvements;
- (c) emission levels;
- (d) impact of government legislation;
- (e) legal proceedings;

- (f) financial impacts;
- (g) information in the notes to the accounts; and
- (h) other pertinent environmental information.

While environmental information, which tended to be descriptive or qualitative, was provided by 70 per cent of the corporations there were significant industry differences. The percentage of corporations providing such information ranged from 94 per cent for the forestry industry to only 35 per cent for the motor industry.

Harte and Owen (1991) examined the annual reports of 30 British companies that were considered to be good at disclosing environmental information. They looked for the following characteristics: separate section on the environment; statement of corporate objectives; financial data on environmental expenditure; non-financial statistical information; and specific narrative detailing company operations.

The authors found relatively little detail in the annual reports. Most of the reporting was of a very general nature, stating corporate philosophy. Harte and Owen suggest that if annual reports are going to be a suitable means for public accountability, there needs to be more credibility. They suggest that one way to enhance credibil-

ity would be to provide auditable information such as compliance with standards.

Zeghal and Ahmed (1990) used content analysis to investigate the nature of social responsibility disclosure in a variety of media. They examined annual reports, advertisements and brochures for Canadian companies in the banking and petroleum industries for the years 1981 and 1982. They found that disclosure made in advertisements and brochures were meant to persuade a targeted audience rather than provide hard financially oriented information. Hence, different vehicles were used for different types of disclosure.

Guthrie and Parker (1989) use content analysis and historical analysis to examine the relationship between corporate social disclosure and social, economic and political events. They studied a single Australian company, Broken Hill Proprietary Company, Ltd., over a period of 100 years and sought to determine if disclosure was made in an attempt to legitimate corporate actions.

They found that corporate social disclosure patterns varied over the company's history. However, the authors felt that there was sufficient levels of disclosure to conclude that corporate social reporting is a long established practice.

Guthrie and Parker found, though, that human resource and community involvement were the key categories of disclosure. With regard to the environment, they found that environmental disclosure was made by the company post-1970 with a small amount of disclosure around 1950. Guthrie and Parker found that in more recent times that the environmental disclosure appears to have been provided as a response to public pressure.

These four studies provide the following conclusions which are tested in this thesis:

- The environmental disclosure that is being provided does not provide adequate financial information and is too general (United Nations Economic and Social Council; Harte and Owen).

- Environmental disclosure differs by industry with the forestry industry being the highest discloser (United Nations Economic and Social Council).

- Different vehicles are used for different types of disclosure (Zeghal and Ahmed).

- The production of social disclosure is a long-established process (Guthrie and Parker).

- Environmental disclosure appears to have been produced as a response to public pressure (Guthrie and Parker).

(b) Environmental disclosure compared to firm characteristics

Trotman and Bradley (1981) examined the effects of size, systematic risk, social constraints and management decision horizon on the disclosure of social responsibility information. Size was measured by total assets and sales volume. Systematic risk was measured by the firm's beta.

They found that companies that provide social responsibility information were larger in size than those companies that did not provide social responsibility information. Also, they found that the systematic risk of companies that provide social responsibility disclosure was higher than the systematic risk of companies that did not provide social responsibility disclosure.

Cowen, Ferreri and Parker (1987) examined the nature of social responsibility disclosure in relation to the characteristics of corporate size, profitability, industry type and the presence of a social responsibility committee. Company size was determined by Fortune rank. Corporate profitability was measured in terms of return on equity and the presence of a social responsibility committee was determined by annual report disclosure.

The authors classified corporate social responsibility disclosure according to subject matter in seven different categories: environment, energy, fair business practices, human resources, community involvement, product safety and other disclosure. This was done so that they could determine what quantity of disclosure was presented in each category rather than just obtaining a total for social responsibility disclosure.

Cowen, Ferreri and Parker found that different categories of disclosure (i.e., different subject matter) received different treatment. Company size was the most significant variable explaining differences in type of disclosure. Most disclosure types were not significantly affected by industry and profitability had no effect on disclosure types.

These two studies provide the following conclusions which are tested in this thesis:

- Larger companies provide more social responsibility disclosure (Trotman and Bradley).

- Subject matter differs based on the size of the company (Cowen, Ferreri and Parker).

- Subject matter is not significantly affected by industry (Cowen, Ferreri and Parker).

- Subject matter is not affected by profitability (Cowen, Ferreri and Parker).

(c) Environmental disclosure compared to environmental performance

Ingram and Frazier (1980) undertook a study to examine the correlation between environmental disclosure and the Council on Economic Priorities (CEP) indices. Their assumption is that if disclosures are going to be useful there should be a correspondence between the disclosures and actual events.

They performed a detailed content analysis of 40 annual reports and evaluated the annual reports on four dimensions: (1) evidence (monetary, nonmonetary, qualitative, declarative, none); (2) time (past, present, future); (3) specificity (specific, general); and (4) theme (e.g., public interest, litigation).

They found that the content analysis scores of the disclosures did not relate strongly to the CEP indices of corporate environmental activities.

Wiseman (1982) compared voluntary environmental disclosure with environmental performance measures as provided by the Council on Economic Priorities. She examined annual reports for various years in the 1970's for the largest companies in the steel, oil, and pulp and paper industries. In order to analyze the annual reports, Wiseman developed an index which

included 18 items. The items were classified into four categories: (1) items related directly to economic factors; (2) items relating to environmental litigation; (3) items relating to pollution abatement items; and (4) other environmentally related items.

Using this index, she ranked the disclosure based on the presence or absence and the degree of specificity of each of the information items. She found that there was no relationship between the measured contents of a firm's environmental disclosure and its environmental performance.

The two studies discussed in this section compared environmental disclosure to environmental performance. It is not the intent of this thesis to pursue such a comparison. Instead, these studies are of value to the literature review because they illustrate methodologies to be adapted rather than conclusions to be tested. Both studies use the research methodology of content analysis to evaluate annual reports. The same methodology is used for this thesis (see Chapter Three). The classification schemes from these studies were also taken into consideration when designing the classification scheme for this thesis (see Chapter Three).

(d) Environmental disclosure compared to economic performance

Bowman and Haire (1975) performed a content analysis to determine the number of lines in the annual report devoted to social responsibility. They coded "discussed efforts to either increase positive potential externalities or decrease negative potential externalities - to increase apparent social benefits or decrease apparent social costs (p. 52)." Once they had their measures of social responsibility disclosure they compared return on equity with the disclosure. They found, as they put it, "that more corporate social responsibility is not associated with less profits (p. 52)." With additional analysis they concluded that the presence of corporate responsibility disclosure is not associated with higher profits.

Ingram (1978) studied certain social responsibility disclosures in annual reports and their impact on security returns. Within each of the categories (environmental, fair business, personnel, community and product) the disclosure was enumerated and classified as monetary or non-monetary.

Ingram grouped the companies into portfolios on the basis of the type of disclosure they provided. He found that there was no evidence that social responsibility disclosures

possess information content (i.e., based on security returns).

A second test was performed isolating the firms into market segments by industry, year and excess earnings levels. Ingram found that combining the segments in the first test "washes out the effects of the disclosures on security returns (p. 283)." The information content of the social responsibility disclosure was conditional upon the market segment of the firm.

Freedman and Jaggi (1986) studied the annual reports and 10-K's for 1973 and 1974 of chemical, paper and pulp, oil refining and steel companies. They used a simple protocol with only six items to characterize a firm's pollution abatement activities. These categories were weighted to give an indication of the usefulness of the information. Their classification scheme is as follows:

- (1) EPA standards for current pollution emissions and firm's performance - weight of 2.5;
- (2) Future capital expenditures - weight of 2.0;
- (3) Current capital expenditures - weight of 1.5;
- (4) Past capital expenditure - weight of 1.5;
- (5) Descriptive along with a percentage - weight of 0.5; and
- (6) Descriptive - weight of 0.5.

Freedman and Jaggi took the results of this classification system and compared it to security price movement. They found that extensive pollution disclosures in their current form did not produce a significant investor reaction, (i.e., the disclosure did not provide investors with any incremental information content). One explanation that the authors gave for these results is that the firms are not disclosing the information that investors want - namely compliance with regulation. None of the firms in their sample disclosed information on pollution emissions and the firm's performance. Hence, the usefulness of disclosure is an important factor.

Anderson and Frankle (1980) performed a study which examined the impact of social disclosure on the capital markets. They found that firms which provided social disclosure outperformed (from a beta analysis point of view) those firms that did not provide social disclosure. They conclude that "economic resources appear to be allocated in the market to securities of those firms that socially disclose (p. 477)."

These four studies treat economic performance as a dependent variable and offer mixed conclusions as to whether or not social responsibility/environmental disclosure affects economic performance.

- The Bowman and Haire article and the Freedman and Jaggi article both conclude that this type of disclosure does not result in an improved economic performance.

- Ingram concludes that disclosure has no effect on security returns unless market segment is taken into consideration.

- Anderson and Frankle conclude that firms which provide social disclosure outperform those firms that do not.

Clearly, the relationship between environmental disclosure and economic performance bears further testing in order to clear up some of this confusion. It should be noted that the confusion is exacerbated by the Guthrie and Parker (1989) and Cowen, Ferreri and Parker (1987) research that treats economic performance as an independent variable. At least, both articles were consistent in their findings that economic performance did not influence disclosure.

Section 2.5 NARRATIVE DISCLOSURE, VOLUNTARY DISCLOSURE AND DISCLOSURE MANAGEMENT

In addition to the environmental disclosure literature, there is a relevant, broader base of literature which

includes narrative disclosure, voluntary disclosure and disclosure management. While this literature does not deal specifically with environmental or social responsibility disclosure, it still offers insights and conclusions that apply to environmental disclosure because much of environmental disclosure is narrative, voluntary and certainly part of the disclosure management process.

These three areas, narrative disclosure, voluntary disclosure and disclosure management are discussed separately, and where applicable there is a brief summary of the conclusions from the literature that are tested in this thesis.

Narrative Disclosure

This literature provides several reasons why the extent of (any) disclosure should be positively associated with size.

Buzby (1975) does a good job of summarizing these reasons:

- (1) The accumulation and dissemination of information is costly.
- (2) Adequate disclosure may increase investor confidence which will increase the marketability of

securities and make external financing cheaper. (This has been supported by Anderson and Frankle, 1980 and Thornton, 1993.)

(3) Smaller firms may feel that increased disclosure will place them at a competitive disadvantage with larger firms in their industry.

(4) Larger firms are more closely watched by government agencies (and public interest groups). Therefore, it is possible that these firms feel that better reporting will lessen unwanted pressure from government (and public interest groups). This has been supported by Watts and Zimmerman (1978) who suggest that firms experiencing "high" profits may engage in social responsibility campaigns in order to combat government intrusion.

Buzby (1975) compared the extent of disclosure with the size of the company and the company's listing status. As a result of his study, Buzby found that the extent of disclosure is positively associated with asset size. Also, he noted a key point: "extent of disclosure is not synonymous with the adequacy of disclosure (p. 30)."

Singhvi and Desai (1971) compared the type of financial disclosure with several characteristics of the firm: (1) asset size; (2) number of stockholders; (3) listing status; (4) CPA firms; (5) rate of return; and (6) earnings management. They measured disclosure based on a weighted index of 34 disclosure items, (e.g., a description of principal plants received a 2). They did not examine the quantity of information or the detailed nature of the information.

Using a multiple regression analysis, Singhvi and Desai found that corporations which disclose inadequate information are likely to be: small in size measured by both assets and number of shareholders; free from listing requirements; audited by small CPA firms and be less profitable measured by both rate of return and earnings margin.

Tennyson, Ingram and Dugan (1990) investigated the association between management's narrative disclosure in the president's letter and bankruptcy. Their premise was that as the president's letter was unaudited, it might provide more forward looking information than the management analysis section of the annual report. Therefore, they proposed that there was an ex ante relationship between narrative disclosure and bankruptcy.

They found that there was a relationship between the narrative disclosure and financial distress. The president's letter had greater (although not significant) explanatory ability than the management analysis. The authors concluded that their research provided some indication that the regulatory process reduces the usefulness of narrative disclosure in explaining bankruptcy.

Lebar (1982) performed a study to determine if the language of the annual report, the 10K and the financial press release were consistent in reporting year-end results. She found that there were differences in the topics presented in the three documents. She also found that some of the documents seemed to contradict each other when describing the same topics.

Thompson, Olsen and Dietrich (1987) examined the nature of firm-specific news announcements in the Wall Street Journal Index. They found that there was considerable variation in the number of news items according to firm size and industry grouping (as well as the day of the week and the month of the year).

These five articles offer the following conclusions that are tested in this thesis:

- Size of company affects disclosure (Buzby; Singhvi and Desai; and Thompson, Olsen and Dietrich).

- Firms that provide adequate information are more profitable (Singhvi and Desai).

- Industry affects the extent of disclosure (Thompson, Olsen and Dietrich).

- Different reporting vehicles may send different messages about the same topics (Lebar).

Voluntary Disclosure

The research performed in the area of voluntary disclosure falls into two main streams. The first examines why voluntary disclosure should exist in the first place. The second examines a specific voluntary disclosure, earnings forecasts.

Why voluntary disclosure exists

Researchers who have examined the nature of voluntary disclosure include Dye (1990); Diamond (1985); Verrecchia (1983); Leftwich, Watts and Zimmerman (1981); and Pastena and Ronen (1979).

Dye compares the disclosure policies that firms select voluntarily with the policies that would be mandated in order to maximize social welfare. He suggests that there is a "race to the top" in which equilibrium voluntary disclosures exceed optimal mandatory disclosures. This is because each firm experiences higher returns to additional disclosure, as long as they are disclosing more information than others.

Diamond (1985) looks at the optimal release of information by firms and comes to the conclusion that there are two benefits in releasing low cost information to the public: (i) it reduces the cost of private information collection; and (ii) there is an improvement in risk sharing because public information makes traders' beliefs more homogenous and reduces the magnitude of speculative positions which informed traders take.

Verrecchia (1983) examines how the existence of disclosure-related costs can explain a manager's decision to withhold information. In the absence of disclosure-related costs, no news is bad news. However, the greater the proprietary cost associated with the disclosure of information, the less negatively traders react to the withholding of information.

Leftwich, Watts and Zimmerman (1981) look at the historical development of interim reporting and examines the relation between the reporting frequency and variables suggested by agency theory. The agency theory variables are seen as economic incentives to disclose. Because of the need for monitoring, managers will exceed minimum reporting requirements in order to minimize agency costs.

Pastena and Ronen (1979) perform an empirical study to look at the kind of information that managers choose to voluntarily disclose. They make the following conclusions:

(1) Managements act as if "they attempt to delay the dissemination of negative information, relative to positive information,"

(2) They act as if they disclose primarily soft positive information as contrasted with soft negative information, and

(3) They disclose negative information essentially only after such information becomes hard.

(Hard information is that which has a high probability of imminent disclosure by sources uncontrollable by management or as a result of an audit.)

Thus, these five examples of research indicate that there are certain costs and benefits to voluntary disclosure that are considered by disclosure preparers when they make and execute their disclosure policies.

Voluntary earnings forecasts

Research on voluntary earnings forecasts has been conducted by Kasznik and Lev (1993); Lev and Penman (1990); Trueman (1986); and Waymire (1985).

Kasznik and Lev (1993) study the management decision of whether or not to warn investors of an impending earnings surprise (ahead of the earnings announcement) or to keep silent. They point out that there are three motives to alert investors to such surprises:

- (1) adjust investor expectations to reduce transaction costs;
- (2) deter shareholder litigation; and
- (3) enhance the manager's reputation.

Lev and Penman (1990) looked at voluntary forecast disclosure and compared it with nondisclosure. They found that the "samples of forecasting and nonforecasting firms differ most markedly on firm size and on earnings change in the forecast year. Earnings changes of forecasting firms are higher in the forecast year than those of nonforecasting firms and those of firms in general (p. 59)." They also found that "earnings forecasts generally distinguish firms with particularly "good" annual earnings from other firms, including firms in their own industries (p. 74)."

Trueman (1986) poses the question "Why Do Managers Voluntarily Release Earnings Forecasts?" as the title of his paper. He answers his question as follows: "The reason is that the forecast release gives the investors a more favorable assessment of the manager's ability to anticipate economic environmental changes and to adjust production plans accordingly (p. 53)." However, if there are costs associated with releasing a forecast the manager must compare the costs with any benefits which might result as a consequence of investors changing their perception of his ability.

Waymire (1985) found that there is an association between earnings volatility and the frequency and timing of voluntary management forecast disclosures. The more frequent forecasters tend to have less volatile earnings processes. A cost-related interpretation may be that executives expect legal sanctions for providing inaccurate forecasts. A benefit-related explanation is that managers may perceive benefits to providing information to improve analysts forecasts.

Thus, these four articles examine a specific type of voluntary disclosure and draw certain conclusions about the presence or absence of such disclosure. This thesis strives to do the same with environmental disclosure. Of course,

conclusions drawn from these four articles can not be specifically tested in this thesis because they relate to earnings forecasts which are not relevant to environmental disclosure.

Disclosure Management

While some of the literature discussed above touches on disclosure management, it has been included with the voluntary disclosure section rather than this section on disclosure management. This section is designed to focus on and outline two specific disclosure models (Lev, 1992 and Gibbins, Richardson and Waterhouse, 1990) that are used to evaluate the environmental disclosure under study. The Lev model, which is used to evaluate environmental disclosure outputs, is discussed first.

The model proposed by Lev

Lev (1992, p. 9) points out that, "Managers rarely devote to information disclosure the careful attention and thorough planning accorded to other corporate activities, such as production, marketing, and finance." This is despite the evidence which indicates that the consequences of most voluntary disclosures are significant and long-lasting. Lev provides a number of illustrations to support this point.

For example: (1) there is a definite market reaction to new product announcements; (2) announcements of dividend decreases result in a less negative market reaction than unannounced dividend decreases; and (3) executives' prospective comments other than hard earnings and dividend data has a significant impact on market values (whereas retrospective comments do not have a noticeable effect).

Lev says that disclosure strategy has received little attention but "it should be integrated with the overall corporate strategy and culture and linked with the specific investment, production and marketing policies (p. 10)."
"Without an active, well planned and executed disclosure strategy there is no assurance that the intrinsic value of the company and its potential will be fully appreciated by outsiders (investors, suppliers, customers) (p. 12)."

Interestingly, Lev sees that the beneficiaries of disclosure are the company's managers and its stakeholders. This is due to the phenomenon that: (1) disclosure has a significant effect on managers' decisions and corporate activities; and (2) disclosure addresses the substantial and permanent information gap that exists between the company's insiders and outsiders.

He points out that the cost-benefit analysis of disclosure is not a straightforward matter. Information disclosure often exerts simultaneous and contradictory effects on various stakeholders. While an optimistic earnings forecast might have a favorable effect on capital markets, it might adversely effect (from management's point of view) labour markets. Therefore, "the cost-benefit analysis of a disclosure strategy should simultaneously consider the effects of disclosures on all the firm's major stakeholders and constituents, including government and regulatory agencies (p. 16)."

Several disclosure objectives are presented by Lev:

(1) Correcting misvaluations

- A misvaluations occurs because of the information gap between insiders and outsiders and associated misperceptions.

(2) Enhancing liquidity

- Information asymmetry leads to low liquidity for which investors demand higher returns.

(3) Changing shareholder mix

- Institutional investors are often considered to be a seal of approval by lenders, suppliers and customers.

- (4) **Deterring political and regulatory intervention**
 - Regulators are often pressed by activists groups to take action to control corporate behaviour.
- (5) **Gaining competitive advantage**
 - Rather than just deter regulatory intervention, a corporation may seek to actually narrow the information gap which should result in market value increase.

Disclosure strategy can be implemented in three categories, according to Lev:

- (1) **Within GAAP disclosure**
 - Choices can be made within the regulated domain of GAAP.
- (2) **Voluntary communications**
 - These are public announcements made by management. These can be qualitative or quantitative and retrospective or prospective.
- (3) **Commitments**
 - These are signals that managers send by making financial decisions such as a dividend increase or a stock repurchase.

I am not clear as to why Lev feels that commitments are a third category of disclosure strategy. Rather, it would seem that this category is merely one type of subject matter

that may be discussed in regulated (GAAP) disclosure or non-regulated (voluntary) disclosure. Also, Lev includes Management Discussion and Analysis as a voluntary disclosure. This disclosure is regulated by the securities commissions in both Canada and U.S. Therefore I would consider disclosure in this vehicle to be regulatory (as GAAP is regulatory). However, it is clear that there are disclosure choices to be made in the MD&A (as there are to be made within GAAP). Following this line of thinking, I see only two disclosure strategies:

- (1) Disclosure choices within regulatory disclosure (GAAP and MD&A); and
- (2) Voluntary disclosure.

Within these two strategies, disclosure can be quantitative or qualitative and retrospective or prospective. Thus, disclosure can be analyzed within three dichotomies: (1) quantitative versus qualitative; (2) voluntary versus regulatory; and (3) retrospective versus prospective. It is these dichotomies that this thesis pursues in the realm of environmental disclosure. However, rather than use Lev's dichotomy of qualitative versus quantitative information, I will use the accounting information versus non-accounting information dichotomy.

In summary, the environmental disclosure under examination in this thesis is evaluated using the following binary groupings (to be defined in Chapter Three):

- (1) Accounting information versus non-accounting information;
- (2) Voluntary disclosure versus regulatory disclosure; and
- (3) Retrospective information versus prospective information.

The model proposed by Gibbins, Richardson and Waterhouse

Gibbins, Richardson and Waterhouse (1992b, p. 45) echo Lev's comments about the need for disclosure strategy:

Just as a company's human and financial resources are managed to ensure efficient and effective functioning, so too must its information be managed. Financial information disclosure is one of management's more important responsibilities.

Gibbins, Richardson and Waterhouse (1990) also point out that:

Research to date on disclosure practices is largely silent about who in the organization makes particular disclosure decisions, what determines the locus of this responsibility, the range of issues considered when making disclosure decisions, the role of consultants, auditors and other external parties in the disclosure process, and the impact of external disclosure rules on disclosure decisions.

Based on twenty interviews, Gibbins, Richardson and Waterhouse developed a model to explain and predict corporate financial disclosure. This model includes six categories of disclosure outputs, (i.e., the dependent variable and five categories of independent variables that influence the set of disclosure outputs).

The dependent variables are defined as follows:

(1) Information set

- the standard format that often exists and provides a set of pigeonholes for the information

(2) Content

- the specific numbers or words disclosed

(3) Redundancy

- use of multiple media or various audiences for a particular disclosure

(4) Timing

- when is good news and bad news released

(5) Ex ante interpretation

- explicit attempts to influence the interpretation that others give to the information at the time that the information is released (e.g., MD&A is released with audited Financial Statements)

(6) Ex post interpretation

- attempts to alter the interpretations that others place on information that has already been released

These dependent variables are not well developed by Gibbins, Richardson and Waterhouse. It would appear that the first three, information set, content and redundancy, are similar to variables present throughout the literature and accordingly, are captured in the study. The last three variables appear to focus on the timing of disclosure which is not an issue to be addressed by this thesis and therefore, are not pursued.

The independent variables in their model are defined as follows:

(I) Firm's disclosure position

- a relatively stable preference for the way disclosure is managed
- There are two dimensions:
 - (1) Ritualism which is uncritical adherence toward prescribed norms; and
 - (2) Opportunism which is seeking out firm specific advantage in the disclosure of financial information.

(II) Antecedents

- There are two types of antecedents:

(1) internal and

(2) external.

- Internal antecedents include:

(a) corporate history,

(b) corporate strategy and

(c) internal politics.

- External antecedents include:

(a) institutional factors such as:

(i) legislation,

(ii) interorganizational norms and

(iii) industry norms and

(b) market factors such as:

(i) regulation of markets,

(ii) use of financial markets,

(iii) factor markets and

(iv) competitive position.

(III) Disclosure issues

- These are defined by externally imposed disclosure requirements and by factors internal to the firm. The firm's disclosure position is relative to its perception of norms and opportunities.

(IV) External consultants and advisors

- These individuals play the following roles:

- (1) they help identify norms and opportunities;
- (2) they identify formal and informal rules;
- (3) they provide technical advice and an opinion;
- (4) their involvement adds credibility; and
- (5) they are a strategic resource in bargaining.

(IV) Structure

- Issues provide the stimulus for disclosure while structures are the activating force.

(1) Internal structure provides for the assignment of disclosure management responsibility and policies and procedures.

(2) External structure provides information demands channelled through other organizations.

The independent variables have been developed by Gibbins, Richardson and Waterhouse to a much greater extent than the dependent variables. Therefore, the independent variables have sufficient depth to permit them to be tested. The results of the interviews in Chapter Seven are cast against these independent variables in order to impose additional structure on the analysis and to test out the model proposed by Gibbins, Richardson and Waterhouse.

**Section 2.6 NEED FOR FURTHER RESEARCH ON ENVIRONMENTAL
DISCLOSURE**

As illustrated in Section 2.4 and Section 2.5, a considerable amount of research has already been undertaken in the areas of social responsibility/environmental disclosure, narrative disclosure, voluntary disclosure and disclosure management. The conclusions from this literature that are tested in this thesis are summarized in Table 2 in Section 2.8.

However, research in these areas is by no means complete. There is a clear need for more research.

As is the custom in academic research, most articles include suggestions for future research. Zeghal and Ahmed (1990), for example, conclude their article with the following research questions (among others):

- (1) How do disclosures through annual reports compare with other media?
- (2) Do non-annual report media provide new information or do they reinforce the existing disclosure?
- (3) What industry-specific differences emerge in the choice of various media to convey social information?

- (4) On what basis do decision makers decide on the most appropriate media for disclosing social information?

In the general area of disclosure management Richardson, Gibbins and Waterhouse (1989, p. 34) point out that:

Despite the amount of research and writing that has been devoted to what happens after financial information is released (in stock market responses, tax liabilities, merger activities and so on), not much light has hitherto been shed on the internal process of generating that information.

Not only has the need for more research in the area of environmental disclosure and disclosure management been articulated by academics, there is also a call for more research being issued from many organizations.

The CICA (1992c) issued a proposal in September 1992 for a research study on "Reporting Information Relating to Environmental Performance". According to the proposal, the objective of the study is:

To develop the basis for a framework for the reporting of information relating to the performance of an organization in accordance with standards and expectations relating to environmental conduct and responsibilities (p. 1).

One of the reasons given for undertaking this research study is that the CICA has indicated (in a submission to the federal government's Prosperity Initiative Steering Group) a

potential for future standard-setting work in non-financial standard setting areas such as measurement and reporting relating to environmental concerns.

The International Institute for Sustainable Development (IISD) (1992) indicates that financial reporting standards need to be developed in order to encompass information relating to sustainable development. In order to develop these standards preliminary activities such as monitoring current practice are seen as necessary research activities.

The IISD states:

The extent and nature of existing public disclosure should be determined....Similarities and differences between industries, domestic and multinational companies, publicly traded and private companies and large and small entities should be noted to gain and understanding of the forces influencing practice (p. 77).

In addition to stating this need for research, the IISD and the CICA have also indicated what desirable environmental disclosure should entail. They are joined by the United Nations Transnational Corporations and Management Division (1992), the Institute of Chartered Accountants in England and Wales (1992) and the Ontario Securities Commission (Van Haren, 1992) which have all commented on the type of environmental disclosure seen as desirable. (These comments on disclosure are discussed in the following section.)

Section 2.7 ENVIRONMENTAL DISCLOSURE SEEN AS DESIRABLE

In 1992, there was a proliferation of documents which provided details on desired environmental disclosure. These documents have been produced by the following organizations: the Ontario Securities Commission (OSC); the Ontario Round Table on Environment and Economy (OREE); the Association for Investment Management and Research (AIMR); the Institute of Chartered Accountants in England and Wales (ICAEW); the International Institute for Sustainable Development (IISD); and the United Nations Transnational Corporations and Management Division (UN). The Canadian Institute of Chartered Accountants (CICA) produced a document containing such details in 1991 (Information to be Included in the Annual Report to Shareholders, 1991b). (Note that pertinent U.S. documents do not exist. Formal studies of this nature do not appear to be as advanced in the U.S. The AICPA is only at the stage of follow-up from exploratory meetings held in January 1993 (CICA, Data Sheet Notes 5, 1992c)).

(It must be noted that comments referred to as OSC comments were comments made by Gary Van Haren, Associate Chief Accountant of the OSC in a speech, May 1992. The remarks he made are not necessarily the views of the Ontario Securities Commission. It should also be noted that the remarks referred to as CICA remarks are in fact the views of the

study group that prepared the report in question and are not necessarily those of the governing body or membership of the CICA. As well, the ICAEW document and the UN document are considered the views of the authors and not necessarily representative of the members of the respective bodies.)

Some of the recommendations put forth by these organizations deal with changes in disclosure outside of the current accounting model. For example the United Nations (1992, p. 17) suggests that we adopt an approach for "accounting for sustainable development". Such an approach would measure natural resources consumed in producing goods and services as well as the resources preserved and wealth created for future use. But, for the most part, recommendations are made within the context of our current accounting framework. This thesis shall concern itself with recommendations made within the context of the existing accounting model.

The recommendations put forth by OSC, OREE, AIMR, ICAEW, IISD, UN and CICA are summarized in Table 1.

Table 1

Environmental Disclosure Seen as Desirable

(* = mentioned in document)

TYPE OF DISCLOSURE	OSC	OREE	AIMR	CICA	ICAEW	IISD	UN
Environmental policy		*	*	*	*	*	*
Objectives to support policy (measurable)		*	*		*	*	
Impact on environment				*	*		
Compliance with legislation		*			*	*	*
Abatement initiatives				*	*		*
Performance vs. objectives		*	*			*	*
Capital expenditure (made and committed)	*			*	*		*
Operating expenditure	*			*	*		*
Effect on earnings (current and future)	*						*
Risks (not req'd to be disclosed as contingencies)	*				*		
Future social trends and industry issues	*	*		*			
Identity of director/officer responsible					*	*	
Key features of external environmental audit reports					*	*	

The seven organizations were not unanimous in their discussion of desirable environmental disclosure. In fact, there was evidence of different orientations. The speech by the OSC Associate Chief Accountant (Van Haren, 1992) took a stance which reflected a prime concern for how the environment affects the firm.

The Annual Information Form requires specific disclosure of: The financial or operational effect of environmental protection requirements on: capital expenditures; earnings; competitive position; expected impact on future years (p. 2).

Whereas the CICA and the ICAEW take a stance which indicates concern for how the firm affects the environment. The CICA (1991b, p.96) suggests disclosure on "the impact of company-/industry operations on the environment." The ICAEW (p. 2) suggests disclosure of "the key impacts of the business on the environment."

Therefore, Table 1 attempts to develop a coherent synthesis of the different views and different suggestions for disclosure presented by these seven organizations. There were a number of suggestions for disclosure that were not included in the table because they were made by only one of the organizations. Such suggestions included the following: indicate the effect of environmental protection requirements on the firm's competitive position (OSC); match clean-up costs with current operations (UN which noted that this is

currently only required in Canada); provide an action plan where environmental objectives have not been met (IISD).

These suggestions for disclosure were considered in formulating the categories used for classification purposes in the content analysis (see Chapter Three). Some of the suggestions refer to the subject matter, for example, abatement initiatives. Some of the suggestions refer to the type of information, for example, capital expenditure (disclosed presumably in dollars).

Other publications (the Canadian Chamber of Commerce, n/d; Deloitte Touche Tohmatsu International, 1993; Elkington and Robins, 1993; Gray, 1993; Investor Responsibility Research Center, 1992; and Nitkin and Powell, 1993) provide information on current environmental reporting practices and offer strategies for reporting, some as simple as: "Be honest. Give the good news - and the bad." (Deloitte Touche Tohmatsu International, 1993, p.10).

Section 2.8 SUMMARY

This chapter has reviewed the following: the concept of accountability; the role of accounting; the research on environmental disclosure; the broader context of narrative disclosure, voluntary disclosure and disclosure management;

the need for more research; and current demands for environmental disclosure.

The concept of accountability, the *raison d'etre* of accounting, has broadened in recent years to include many more stakeholders than just shareholders and creditors. Coupled with this expanding group of users is a broadening of user needs for information. This translates into a need to provide a broader range of information which includes financial and perhaps even non-financial information about environmental issues.

Associated with this changing view of users and changing user needs is a need for the accounting profession to change. The profession needs to adapt itself to meet changing social and economic circumstances. Financial performance and environmental performance are inextricably linked. Financial information must now be integrated with scientific, technical and legal information. And, accountants and auditors are well positioned to assist in performing this integration.

A significant amount of research has been conducted to examine disclosure practices. However, little of it captures the recent explosion of disclosure and new

disclosure vehicles such as the environmental report. Little of it captures Canadian disclosure practices.

There has been little work done to examine the internal management process of providing disclosure. There needs to be a better understanding of the management processes leading up to the release of environmental disclosure.

This thesis hopes to fill some of this void by obtaining evidence through a study of environmental disclosure and the management of such disclosure. Analysis of this evidence should aid in developing our understanding of the phenomenon of environmental performance reporting.

More specifically, several research questions for study have arisen as a result of a review of the literature and these questions are tested in this thesis. Although many of these questions have been tested in the past, there are several reasons to test them again:

- I use Canadian data;
- I use more recent empirical evidence;
- I provide additional support (or refutation as the case may be) to conclusions made in the past with the aim of strengthening our understanding about environmental disclosure and disclosure in general; and

- I expand our understanding of disclosure management by testing the Lev (1992) model and the Gibbins, Richardson and Waterhouse (1990) model.

Table 2 outlines the 11 basic research questions under study and indicates the literature that motivates these questions.

Table 2 - General Research Questions and Relevant Literature

GENERAL RESEARCH QUESTIONS	RELEVANT LITERATURE
<p>(1) Has the quantity and nature of environmental disclosure in annual reports changed over time?</p>	<p>Guthrie and Parker (1989) conclude that corporate social reporting is a long-established practice.</p>
<p>(2) Are there industry differences in the quantity and nature of environmental disclosure in annual reports?</p>	<p>Cowen, Ferreri and Parker (1987) found that most corporate social responsibility disclosure types (i.e., subject matter) were not affected by industry.</p> <p>United Nations Economic and Social Council (1992) found that the extent of environmental disclosure differs by industry (forestry provided the most).</p> <p>Ingram (1978) found that industry has an effect on social responsibility disclosure.</p> <p>Thompson, Olsen and Dietrich (1987) found that industry affects the extent of disclosure.</p>
<p>(3) Is there a relationship between the size of a company and the quantity and nature of environmental disclosure in the annual report?</p>	<p>Cowen, Ferreri and Parker (1987) found that large companies provide more social responsibility disclosure types.</p> <p>Trotman and Bradley (1981) concluded that larger companies provide more social responsibility disclosure.</p> <p>Ingram (1978) found that size of company has an effect on social responsibility disclosure.</p> <p>Buzby (1975) found that extent of disclosure is positively associated with asset size.</p> <p>Singhvi and Desai (1971) concluded that adequacy of disclosure is associated with size.</p> <p>Thompson, Olsen and Dietrich (1987) found that disclosure varied by firm size.</p>

Table 2 - General Research Questions and Relevant Literature (Cont.)

GENERAL RESEARCH QUESTIONS	RELEVANT LITERATURE
<p>(4) Is there a relationship between the profitability of a company and the quantity and nature of environmental disclosure in the annual report?</p>	<p>Cowen, Ferreri and Parker (1987) found that profitability had no effect on social responsibility disclosure types.</p> <p>Freedman and Jaggi (1986) found that pollution disclosure does not produce a significant security price movement.</p> <p>Anderson and Frankle (1980) concluded that firms which provide social disclosure outperform those that do not.</p> <p>Bowman and Haire (1975) found that social responsibility disclosure is not a cause of higher profits.</p> <p>Ingram (1978) concluded that after taking market segment and size into account social responsibility disclosure affects security returns.</p> <p>Guthrie and Parker (1989) concluded that environmental disclosure was produced as a response to public pressure rather than economic pressure.</p> <p>Singhvi and Desai (1971) concluded that companies that disclose inadequate information are less profitable.</p>
<p>(5) What portion of environmental disclosure found in the annual report falls within the domain of accounting?</p>	<p>Lev (1992) offers a model which is modified somewhat to address this question.</p> <p>United Nations Economic and Social Council (1992) concluded that it was not possible to gauge the impact of environmental activities on financial results.</p> <p>Harte and Owen (1991) suggest that more auditable information such as compliance with standards needs to be included in annual reports.</p>

Table 2 - General Research Questions and Relevant Literature (Cont.)

GENERAL RESEARCH QUESTIONS	RELEVANT LITERATURE
(6) What is the nature of the environmental reports that have become a communication vehicle in recent years?	To the best of my knowledge no "academic" work has been done in this area. The most extensive study conducted, from a practitioner point of view, is the international study done by Deloitte Touche Tohmatsu International (1993).
(7) How does the disclosure in environmental reports compare with the disclosure in annual reports?	Zeghal and Ahmed (1990) found that different disclosure vehicles are used for different types of social responsibility disclosure. Lebar (1982) concluded that different reporting vehicles may send different messages about the same topics.
(8) In 1991, what was the nature of the sum total of additional environmental disclosure issued by the corporation?	Zeghal and Ahmed (1990) found that different disclosure vehicles are used for different types of social responsibility disclosure. Lebar (1982) concluded that different reporting vehicles may send different messages about the same topics.
(9) In 1991, how does environmental disclosure outside the annual report compare with the disclosure in the annual report?	Zeghal and Ahmed (1990) found that different disclosure vehicles are used for different types of social responsibility disclosure. Lebar (1982) concluded that different reporting vehicles may send different messages about the same topics.
(10) What is the management process in issuing environmental disclosure?	Gibbins, Richardson and Waterhouse (1990) provide a model to analyze the management process behind the disclosure.
(11) What role did the accounting function play in the management and release of environmental disclosure?	To the best of my knowledge this topic has not been addressed by the literature. Therefore, this is a contribution of my thesis.

CHAPTER THREE

RESEARCH DESIGN

Section 3.1 INTRODUCTION

This chapter outlines the methodology to be employed in this thesis. Section 3.2 details the selection of the main sample and the sub-sample under study. Section 3.3 provides the process for data collection which is undertaken in four stages. Section 3.4 discusses the use of content analysis. This section provides a classification system for environmental issues and type of information. Section 3.5 provides a summary of the research questions to be addressed.

Section 3.2 SELECTION OF MAIN SAMPLE AND SUB-SAMPLE

The main sample consists of 40 public companies listed on the Toronto Stock Exchange (TSE). Sampling was done using the CD-ROM "Corporate Information on Canadian Companies", December 1992 version. Companies were selected on an industry basis through the use of SIC codes.

Poore and Davis (1992) indicate which industries that the Environmental Protection Agency in the U.S. considers to be predominant sources of hazardous waste. These industries

include: chemicals and allied products; fabricated metal products, electronic and electric equipment; electroplating; lumber and wood treating; petroleum and refining; primary metal products; rubber and plastic products; textile mill products; and paper and allied products. Holusha (1991) provides a list of the 10 biggest polluters in the U.S. based on their analysis of Environmental Protection Agency data. These polluters are located in the following industries: petroleum, chemical, iron and steel, construction materials, automobiles, refined metals.

It is presumed that these industries have comparable environmental impact in Canada. Of these industries, three were chosen for study: (1) paper and allied products (SIC 26); (2) petroleum and gas extraction (SIC 13); and (3) metal mining (SIC 10). These three industries can be presumed to have a significant impact on the environment. (It should be noted that there are an insufficient number of public companies in Canada in the chemical and allied products or primary metal producers industry to obtain a sufficiently large sample.)

Review of Statistics Canada information (1992) indicates that the three resource based industries have significant economic impact because they make up the following percentage of Canadian Gross Domestic Product (GDP):

Mining - 1.14 percent;
Oil and Gas - 2.16 percent; and
Pulp and Paper - 1.67 percent.

This thesis also explores the disclosure of companies which, at least directly, do not have a significant environmental impact. Thus, the investment management sector (SIC 67) was chosen to serve as the fourth industry under study. (It should be noted that there are an insufficient number of public companies in Canada in the banking and financial or insurance company sectors to obtain a sufficiently large sample.)

This Statistics Canada information source does not provide enough detail to determine what the investment management industry contributes to GDP. However, by way of illustration, the trust, other finance and real estate sector contributes 5.54% of the GDP.

The disclosure presented by the investment management companies sector is compared and contrasted with the other three resource based, "high environmental impact" industries. In order to obtain an understanding of the changes in environmental disclosure, annual reports for specified years from a span of 23 years were selected. The years 1969, 1979, 1989, 1990 and 1991 have been chosen.

Using such a time span for study imposed additional restrictions on the sample selection. Companies selected for study had to meet the following criteria: (1) have operations dating back to 1969; (2) have remained in the same industry for the 23 year period; (3) have been public for the 23 year period and (4) have shares that are actively traded. The fourth criteria is intended to eliminate companies that are closely held and therefore do not have as broad an audience to whom they must report.

Ten companies were selected in each of the four industries using the following sampling approach. Each industry was sampled separately.

- (1) Using the CD-ROM "Corporate Information on Canadian Companies", all companies listed with the appropriate SIC code were selected.
- (2) Using the same CD-ROM, all companies that were not public in 1992 were excluded from the sample.
- (3) Using the same CD-ROM, all companies that were not listed on the TSE were excluded from the sample.

- (4) Using the Financial Post Survey of Mines and Energy Resources 1992 and the Financial Post Survey of Industrials 1992, all companies in the sample were reviewed for date of incorporation. All companies that were incorporated subsequent to 1968 were excluded. This criteria also served to exclude companies that had been in existence prior to 1969 but had undergone some sort of reorganization of sufficient magnitude to warrant a re-incorporation. It was felt that these were justifiably excluded as such a reorganization would likely be indicative of a major change in the operations of the company.

Companies that were not listed in these Financial Post references, companies that had been suspended from TSE trading and companies that had not filed with the Ontario Securities Commission were also excluded at this time. There were only a few companies that fell into these categories.

Tables 3 through 6 detail the results of the sampling process for steps one through four.

Table 3

Sampling Population of Investment Management Companies

<u>Criteria</u>	<u>Number of Companies</u>
Appropriate SIC code (1)	552
Less non-public	225
	—
Public companies (2)	327
Less non-TSE	258
	—
TSE companies (3)	69
Less post 1968 incorporation	50
	—
Sampling population (4)	19
	===

Table 4

Sampling Population of Mining Companies

<u>Criteria</u>	<u>Number of Companies</u>
Appropriate SIC code (1)	2044
Less non-public	123
	—
Public companies (2)	1921
Less non-TSE	1686
	—
TSE companies (3)	235
Less post 1968 incorporation	177
	—
Sampling population (4)	58
	====

Table 5

Sampling Population of Oil and Gas Companies

<u>Criteria</u>	<u>Number of Companies</u>
Appropriate SIC code (1)	795
Less non-public	130
	—
Public companies (2)	665
Less non-TSE	486
	—
TSE companies (3)	179
Less post 1968 incorporation	137
	—
Sampling population (4)	42
	==

Table 6

Sampling Population of Pulp and Paper Companies

<u>Criteria</u>	<u>Number of Companies</u>
Appropriate SIC code (1)	79
Less non-public	50
	—
Public companies (2)	29
Less non-TSE	11
	—
TSE companies (3)	18
Less post 1968 incorporation	7
	—
Sampling population (4)	11
	==

After the sampling populations were established, as outlined in Tables 3 to 6, three more steps (steps 5 through 7) were undertaken.

- (5) From each list, a random sample was drawn. The list resulting from step (3) above provided a number for each company (based on alphabetical order). The company number for each company was written on a slip of paper and put in a bag. All the slips were then pulled from the bag and the order of removal was recorded. The first ten companies on this draw list (in each of the draws for each industry) comprised the initial sample.
- (6) Through the use of the Financial Post Survey of Mines and Energy Resources 1992 and the Financial Post Survey of Industrials 1992 the distribution of shareholdings in companies was reviewed to ensure that all companies in the sample were not closely held. Closely held is defined for the purposes of this thesis as fewer than 6 owners who combined hold 95% or more of the stock. Any closely held companies were deleted from the sample and the next company on the draw list was added to the sample.

- (7) As data was being collected, the sample was reviewed to ensure that each company selected had been publicly traded for the entire 23 years. Any companies that had not been public for the entire time period were dropped from the sample and the next company on the draw list was added to the sample.

Tables 7 through 10 list the companies selected as a result of steps five through seven.

Table 7

Selected Sample of Investment Management Companies

Canadian General Investments, Limited
Economic Investment Trust Limited
Garbell Holdings Limited
MPG Investment Corporation Limited
Pioneer LifeCo Inc.
Power Corporation of Canada
Power Financial Corporation
Third Canadian General Investment Trust Limited
Trans Rampart Industries Ltd.
United Corporations Limited

Table 8**Selected Sample of Mining Companies**

Anglo Dominion Gold Exploration Limited
Brunswick Mining and Smelting Corporation Limited
Canada Tungsten Mining Corporation Limited
Moneta Porcupine Mines Inc.
NSR Resources Inc.
Newhawk Gold Mines Ltd.
Nova Beaucage Mines Limited
Redstone Resources Inc.
Tintina Mines Limited
Win-Eldrich Mines Limited

Table 9**Selected Sample of Oil and Gas Companies**

American Leduc Petroleums Limited
First Calgary Petroleum Ltd.
Numac Oil & Gas Ltd.
Place Resources Corporation
Prairie Oil Royalties Company, Ltd.
Ram Petroleums Limited
Scurry-Rainbow Oil Limited
Sogepet Limited
Trans-Dominion Energy Corporation
United Reef Petroleums Limited

Table 10**Selected Sample of Pulp and Paper Companies**

Abitibi-Price Inc.
Canadian Pacific Forest Products Limited
Donohue Inc.
Fletcher Challenge Canada Limited
Quebecor Inc.
Repap Enterprises Inc.
Rolland Inc.
Roman Corp. Limited
Scott Paper Limited
West Fraser Timber Co. Ltd.

It evolved that in two of the industries there were an insufficient number of companies that met the criteria of being publicly traded for the entire 23 year period. Therefore, as outlined in Chapter Four, several companies were private for a portion of the period under study. These companies did not have to make their 1969 and in some cases 1969 and 1979 annual reports public. As a result, the final sample consisted of 186 annual reports.

The sub-sample used for Stage III and Stage IV was selected from the main sample and consisted of two companies from each of the four industries for a sub-sample size of eight. The sub-sample was selected on the basis of company size.

Section 3.3 DATA COLLECTION

3.3.1 Stage I - Selection of annual reports for main sample

The first disclosure document to be examined is the annual report. Annual reports were selected for the years 1969, 1979, 1989, 1990 and 1991. The intervals of 1969 and 1979 and 1989 provide an indication of the change that has taken place over intervals of a decade. The range of 1989 to 1991 provides an indication of current disclosure practices and documents recent trends in environmental disclosure.

Copies of annual reports for all 40 companies for the five years under study are analyzed by means of content analysis. (Content analysis to be discussed in Section 3.4.)

3.3.2 Stage II - Selection of environmental reports for main sample

While the exact nature of an environmental report differs from company to company, an environmental report is generally a report presenting corporate environmental performance for a finite period of time - usually one year. Because there is no statutory requirement to issue an environmental report, not all companies will have issued environmental reports for each of the five years under study.

An environmental report was sought for all 40 companies in the sample for each of the five years under study.

As the data collection section in Chapter Five indicates, only one company, Canadian Pacific Forest Products Limited, produced an environmental report for only one of the years under study, 1991.

3.3.3 Stage III - Selection of additional public disclosure for sub-sample

At this stage, further work was performed using only the sub-sample of eight companies - two from each of the four industries. All remaining public disclosure provided by these companies was obtained for the year of 1991 and analyzed by way of content analysis.

Remaining or other (i.e., non-annual report and non-environmental report) disclosure is defined by the following parameters: (1) any disclosure listed in the Canadian Business and Current Affairs (CBCA) database; (2) the CanCorp Canadian Corporate Documents Service available from Micromedia Limited which provides copies of all information filed with the Ontario Securities Commission (OSC); and (3) any public information produced voluntarily by the company that would not be included in (1) or (2).

The Canadian Business and Current Affairs (CBCA) database include material indexed in Canadian Business Index, Canadian News Index, Canadian Magazine Index, and Bibliography of Works on Canadian Foreign Relations. Information produced by the company that would not be covered by the CBCA database or the CanCorp Service would include non-material press releases not required by the OSC, brochures

and advertising. It was necessary to contact the companies in question to obtain press releases, brochures and advertising of this nature.

As described in Chapter Six, there was very limited disclosure provided by the sub-sample companies in the way of brochures or advertising and there was virtually no non-material press releases. These items have therefore not been coded by way of content analysis. Additional public disclosure consisted of OSC filings for all eight companies and reports in the business press for two of the eight companies.

This thesis is limited to examining the extent of communication from corporations. Therefore items selected from the CBCA database were screened. Only articles or press/financial releases written by employees of the corporation were used. Hence, articles written about the corporation or its employees were excluded. This screening process is documented in Chapter Six, Table 48.

3.3.4 Stage IV - Interviews conducted with sub-sample

Using the eight company sub-sample, interviews were conducted with management personnel responsible for producing disclosure items issued in 1991. The initial

requirement was to determine who in the firm is responsible for conceiving, preparing and authorizing such disclosure.

Key individuals were identified on a firm by firm basis and interviews were undertaken with each individual. It is felt that the use of multiple informants enhances the validity and reliability of this thesis. Interviewing was conducted with a pre-established set of questions (see Chapter Seven). The questions were intended to be relatively open-ended in order to elicit discussion rather than simple one-word answers.

Section 3.4 ANALYSIS OF WRITTEN DISCLOSURE

3.4.1 Use of content analysis

A multi-dimensional classification framework was specifically designed for this thesis for content analysis of environmental disclosure. The framework was developed with 25 sub-categories to capture: subject matter being discussed; type of information used; location of information in the annual report; and tense of information. This classification framework can be used in the future for content analysis of other items of environmental disclosure.

Content analysis is a research tool which places narrative text into categories in order to derive conclusions about thematic content. "Content Analysis is any technique for making inferences by objectively and systematically identifying specified characteristics of messages (Holsti, 1969, p. 14)." Kerlinger (1964, p. 544) as quoted in Kassarian (1977, p. 9) indicates that:

Content analysis, while certainly a method of analysis, is more than that. It is...a method of observation. Instead of observing people's behavior directly, or asking them to respond to scales, or interviewing them, the investigator takes the communications that people have produced and asks questions of the communications.

Content analysis has been used for several decades in such disciplines as journalism and the social sciences (Budd, Thorp and Donohew, 1967; and Holsti, 1969). More recently, marketing and accounting researchers have begun to use content analysis. This methodology has been used in the accounting literature in the analysis of annual reports (Bowman and Haire, 1975; Freedman and Jaggi, 1982; Guthrie and Parker, 1989; Ingram, 1978; Ingram and Frazier, 1980; Lentz and Tschirgi, 1963; Rockness, 1985; Tinker and Neimark, 1987; Wiseman, 1982; and Zeghal and Ahmed, 1990;) and in the management literature in the analysis of portions of the annual report (primarily Management's Letter to the Shareholders) (Bettman and Weitz, 1983; D'Aveni and MacMillan, 1990; and Staw, McKechnie and Puffer, 1983).

Content analysis has the characteristics of objectivity, systematization and quantification (Kassarjian, 1977). The requirement of objectivity necessitates that the categories of analysis be defined in a manner precise enough that different analysts may apply them to the same document and obtain the same results. Systematization ensures that the categories that have been defined are exhaustive and mutually exclusive. The quantification aspect of content analysis ensures that the data are rendered in a form suitable not only for statistical methods but also for interpretation and inference.

When using content analysis there are three basic decisions that have to be made (Holsti, 1969):

- (1) Categories - What is the subject matter?
- (2) Units - What will be the unit of analysis: words, sentences, themes, paragraphs?
- (3) System of enumeration - Will it be frequency, space or intensity?

In using content analysis, reliability is often measured and determined by the percentage of agreement between judges who have analyzed the same material. The validity of content analysis is determined by the choice of categories and content units.

The following section outlines the response to these three decisions and address reliability and validity issues.

3.4.2 Classification process

The first step is to determine which passages from the text are relevant to the research questions under study.

Therefore, the first decision to be addressed in the classification process is choice of key words used to describe environmental issues. Several key words such as: spills, pollution, emissions, discharge, effluent, toxic waste, recycling, environmental, ecological, re-forestation, site decommissioning, and sustainable development signal that some type of environmental disclosure is being made. The text surrounding such key words is selected, analyzed and categorized. (See Appendix A for the complete list of key terms used to extract text.)

A schema for categorization has been established based on: (1) the disclosure suggestions (see Chapter Two) of several organizations (OSC, OREE, AIMR, CICA, ICAEW, IISD, UN); (2) a pilot study conducted by the author (1992); and (3) the index categories used by Wiseman (1982). (See Appendix B for the content analysis coding sheet which lays out the four classes and 25 categories/dependent variables discussed below.)

There are four classes to be used in the categorization process:

I Subject Matter

(with 8 categories/dependent variables);

II Information Type

(with 10 categories/dependent variables);

III Location

(with 4 categories/dependent variables); and

IV Tense

(with 3 categories/dependent variables).

The first class, subject matter, categorizes the type of the environmental issue being discussed. This class examines the topic of discussion rather than the type of information presented during the discussion (Class II). There are eight categories in this class:

(1) Products of the Firm

This would include the use of recycled materials in products or the production of "environmentally-friendly" products. It would also include description about the processes to make such products.

(2) By-products of the Firm

This includes all emissions and waste produced by the firm.

(3) **Pollution Control**

Discussion here would revolve around the reduction or elimination of unwanted by-products.

(4) **Conservation**

This would include protection of habitat and re-forestation.

(5) **Site Restoration**

This category is more specific than the other categories as it refers to the only environmental issue specifically required to be accounted for by the CICA Handbook. It has been established as a separate category in order to evaluate the response to this accounting requirement.

(6) **External Demands**

This category captures all the discussion surrounding the social, political and legal demands that affect the firm. This category would include discussion of laws affecting the firm, potential or actual litigation and compliance with laws.

(7) Environmental Policy

Discussion in this category would include formal policy statements by the firm as well as general statements of commitment to the environment.

(8) Management Systems

This would include discussion of special studies and environmental management systems. This category includes discussion of environmental audits and their results, employee training programs and the existence of environmental officers or committees.

The second class, information type, categorizes the type of information presented surrounding the environmental issue being discussed. Use of this class is meant to aid in determining what of the disclosure presented is accounting information and what is not currently regarded as accounting information. There are ten categories in this class. The first five categories represent accounting information and the last five categories represent non-accounting information.

(1) Dollars

This includes information presented in quantified dollar terms, e.g., "Last year \$20 million was spent on pollution control equipment." This is considered accounting information.

(2) Financial Impact

This includes disclosure using terms such as: costs, savings, earnings, investment, liquidity, purchase, expense, capital, and revenue. An example of this information type in use is: "Investment will be made in pollution control equipment." This is considered accounting information.

(3) Risk Management-General

This is discussion regarding compliance with laws, development of environmental management systems and environmental audits. Words indicating risk management include: controlling, limiting, and reducing. Information in this category will provide general information about risk management, e.g., "We are reducing emissions." This is considered accounting information.

(4) Risk Management-Quantified

This category provides the same type of risk management information as the third category. However, information in this category is presented in a quantified manner, e.g., "We have reduced our emissions by 20% during the past year." This is considered accounting information.

(5) Risk Management-Compliance

This category provides the same type of risk management information as the third and fourth categories. However, information in this category discloses compliance or non-compliance with environmental laws, e.g., "We have reduced our emissions by 20% during the past year and are now in compliance with all relevant environmental legislation." This is considered accounting information.

(6) Acts/Processes-Quantified

This is information that discusses activities or processes undertaken by the firm. This information is presented in a quantified manner and does not refer directly to risk management, e.g., "During the past year our SO₂ emissions were 75,000 kilotonnes." This is considered non-accounting information.

(7) Acts/Processes-General

This is information that discusses activities or processes that the corporation has undertaken. This information is presented in a non-quantified manner and does not refer directly to risk management. This is considered non-accounting information.

(8) Legislation and Regulation

This is discussion surrounding environmental laws that apply to the firm. It includes discussion on what is required and expected of the firm. It also includes the firm's participation in the regulatory process. For example, efforts at obtaining certain environmentally-related permits would be included in this category. This is considered non-accounting information.

(9) General Information

This is information that is specific to the company but does not discuss company activity. For example, "We endorse efforts made by Environment Canada in this area." This is considered non-accounting information.

(10) Non-specific Information

This is information presented that is not specific to the company. For example, "Environment Canada is conducting a study." This is considered non-accounting information.

The third class, location type, categorizes where in the annual report the information is presented. (This class is only used for Stage I of this thesis.) It is hoped that the credibility aspect of information can be answered by recording here in the annual report the text is located.

There are four categories in this class:

- (1) Audited Financial Statements;
- (2) Management Discussion and Analysis;
- (3) Letter to the Shareholders; and
- (4) Corporate Overview (i.e., the balance of the annual report).

Categories (1) and (2) are regulatory disclosure whereas categories (3) and (4) represent voluntary disclosure. Based on the extent of the involvement of the independent, external auditor, the Ontario Securities Commission and management's representation, the credibility of the information declines as the user moves down the list from (1) Audited Financial Statements to (4) Corporate Overview.

The fourth class, tense, has three categories:

- (1) Past;
- (2) Present; and
- (3) Future.

By including this class in the categorization scheme it is possible to determine if environmental issues are presented in an ex post or ex ante fashion, (i.e., whether or not the information is retrospective or prospective).

The second decision to be made in content analysis is units. Coding was done using sentences as the unit of measurement. Sentences have been chosen as a unit because they represent a complete thought. Where sentences contain several types of information, coding was done based on the first clause of the sentence.

The third decision in using content analysis is system of enumeration. Enumeration was done on the basis of a count of sentences instead of column inches or pages (space) or intensity. It is felt that sentence count provides the most accurate system of enumeration given the subject matter and the source documents.

The validity of the categories used for data indexing has been supported by the literature as discussed in Chapter

Two. The use of a multi-method approach (content analysis of written disclosure and interviews) serves to enhance to validity and reliability of the results.

I classified and coded all written disclosure. (See Appendix B for a copy of the coding sheet.) However, in order to obtain some measure of the reliability of the classification process, a graduate student was employed to classify the same material on a test basis. The student was trained as to the use of content analysis and the definitions of the categories used for classification purposes. (A training guide, given to the student, has been provided in Appendix C. This training guide provides an indication of how sentences - artificially constructed for illustration purposes - would be coded using the classification scheme that has been adopted for this thesis.) As discussed in Chapter Four, an inter-rater reliability was calculated at 84.02% and found to be acceptable.

Appendix D provides more detail on the following: (1) defining environmental information; (2) determining the context for coding; and (3) determining what information will not be coded (e.g., the Table of Contents).

3.4.3 Disclosure and firm characteristics

Information on firm characteristics were gathered from the annual reports during Stage I - data selection process. Information on three variables were collected: (1) Industry (determined by the sampling process); (2) Size (to be measured by total assets); and (3) Profitability (to be measured by return on total assets). Time (year of annual report) is the fourth independent variable to be used in the analysis. As indicated by Table 2, in Chapter Two these characteristics are drawn from a body of corporate responsibility/environmental disclosure literature (for example Cowen, Ferreri and Parker, 1987; Trotman and Bradley, 1981; and the United Nations Economic and Social Council, 1992).

Size was split into three categories: (1) those companies with \$100 million or more in total assets; (2) those companies with over \$10 million in total assets and less than \$100 million in total assets; and (3) those companies with less than \$10 million in total assets.

Profitability (measured by return on assets) was split into two categories: (1) those companies greater than or equal to the industry mean; and (2) those companies less than the industry mean.

Section 3.5 SUMMARY OF RESEARCH QUESTIONS

In summary, this thesis addresses the following research questions (stated in the null form).

Stage I

- (1) Has the quantity and nature of environmental disclosure in annual reports in Canada changed over the last 23 years?

RQ₁: Over time, there has been no difference in the quantity of environmental disclosure presented in annual reports.

RQ₂: Over time, there has been no difference in the type of subject matter presented in environmental disclosure in annual reports.

RQ₃: Over time, there has been no difference in the type of information presented in environmental disclosure in annual reports.

RQ₄: Over time, there has been no difference in the location of environmental disclosure presented in annual reports.

RQ₅: Over time, there has been no difference in the tense of information presented in environmental disclosure in annual reports.

- (2) Are there industry differences in the quantity and nature of environmental disclosure in annual reports in Canada?

RQ₆: On an industry basis, there is no difference in the quantity of environmental disclosure presented in annual reports.

RQ₇: On an industry basis, there is no difference in the type of subject matter presented in environmental disclosure in annual reports.

RQ₈: On an industry basis, there is no difference in the **type of information** presented in environmental disclosure in annual reports.

RQ₉: On an industry basis, there is no difference in the **location** of environmental disclosure presented in annual reports.

RQ₁₀: On an industry basis, there is no difference in the **tense** of information presented in environmental disclosure in annual reports.

(3) Is there a relationship between the **size of a company** and the quantity and nature of environmental disclosure in annual reports produced by the company?

RQ₁₁: Based on the size of a company, there is no difference in the **quantity of environmental disclosure** presented in annual reports.

RQ₁₂: Based on the size of a company, there is no difference in the **type of subject matter** presented in environmental disclosure in annual reports.

RQ₁₃: Based on the size of a company, there is no difference in the **type of information** presented in environmental disclosure in annual reports.

RQ₁₄: Based on the size of a company, there is no difference in the **location** of environmental disclosure presented in annual reports.

RQ₁₅: Based on the size of a company, there is no difference in the **tense** of information presented in environmental disclosure in annual reports.

- (4) Is there a relationship between the profitability of a company and the quantity and nature of environmental disclosure in annual reports produced by the company?

RQ₁₆: Based on the profitability of a company, there is no difference in the quantity of environmental disclosure presented in annual reports.

RQ₁₇: Based on the profitability of a company, there is no difference in the type of subject matter presented in environmental disclosure in annual reports.

RQ₁₈: Based on the profitability of a company, there is no difference in the type of information presented in environmental disclosure in annual reports.

RQ₁₉: Based on the profitability of a company, there is no difference in the location of environmental disclosure presented in annual reports.

RQ₂₀: Based on the profitability of a company, there is no difference in the tense of information presented in environmental disclosure in annual reports.

- (5) What portion of environmental disclosure found in annual reports falls within the domain of accounting?

Stage II

- (6) What is the nature of the environmental reports which have become a communication vehicle in recent years?

This question does not lend itself to research questions stated in the null form. Rather, this question shall be addressed through a description of the information found during the data collection.

- (7) How does the disclosure in environmental reports compare with the disclosure in annual reports?

RQ₂₁: There is no difference between annual reports and environmental reports with regard to the quantity of environmental disclosure.

RQ₂₂: There is no difference between annual reports and environmental reports with regard to the type of subject matter presented in environmental disclosure.

RQ₂₃: There is no difference between annual reports and environmental reports with regard to the type of information presented in environmental disclosure.

RQ₂₄: There is no difference between annual reports and environmental reports with regard to the tense of information presented in environmental disclosure.

Stage III

- (8) In 1991, (for the sub-sample), what was the nature of the sum total of additional environmental disclosure issued by the corporation?

This question does not lend itself to research questions stated in the null form. Rather, this question shall be addressed through a description of the information found during the data collection.

- (9) For the 1991 sub-sample, how does environmental disclosure outside the annual report compare with the disclosure in the annual report?

RQ₂₅: There is no difference between annual reports and other additional disclosure with regard to the quantity of environmental disclosure.

- RQ₂₆: There is no difference between annual reports and other additional disclosure with regard to the type of subject matter presented in environmental disclosure.
- RQ₂₇: There is no difference between annual reports and other additional disclosure with regard to the type of information presented in environmental disclosure.
- RQ₂₈: There is no difference between annual reports and other additional disclosure with regard to the tense of information presented in environmental disclosure.

Stage IV

- (10) For the 1991 sub-sample, what is the management process in issuing environmental disclosure? Questions of who determines the disclosure and why disclosure choices were made will be explored here.

This question does not lend itself to research questions stated in the null form. Rather, this question shall be addressed through a description of the information found during the data collection.

- (11) What role did the accounting function play in the management and release of environmental disclosure?

This question does not lend itself to research questions stated in the null form. Rather, this question shall be addressed through a description of the information found during the data collection.

CHAPTER FOUR

RESULTS OF EXAMINING ANNUAL REPORTS

Section 4.1 INTRODUCTION

This chapter focuses on the environmental disclosure found in the selected sample of annual reports. Section 4.2 reviews the research questions under study. Section 4.3 discusses the data collection and the content analysis coding. Section 4.4 provides a brief overview of the annual reports in the context of the four industries. Section 4.5 presents the raw data collected and addresses certain assumptions regarding the statistical analysis used. Section 4.6 presents the results of the statistical analysis of the independent variable Time. Section 4.7 presents the results of the statistical analysis of the independent variable Industry. Section 4.8 presents the results of the statistical analysis of the independent variable Size. Section 4.9 presents the results of the statistical analysis of the independent variable Profitability. Section 4.10 analyzes the disclosure in the context of three disclosure dichotomies outlined in Chapter Two. A conclusion to the chapter is found in Section 4.11.

Section 4.2 RESEARCH QUESTIONS

Several research questions were posed in connection with the quantity and nature of environmental disclosure. These can be grouped into four areas of query which focus on four independent variables: Time, Industry, Size, Profitability.

The question of quantity of disclosure is examined using a single dependent variable, which provides the number of sentences devoted to environmental issues. These data are evaluated with the statistical method of ANOVA.

The question of nature of disclosure is examined using four classes of dependent variables. These classes are:

I Subject Matter

(with 8 categories/dependent variables);

II Information Type

(with 10 categories/dependent variables);

III Location

(with 4 categories/dependent variables); and

IV Tense

(with 3 categories/dependent variables).

The nature of the disclosure is evaluated using the statistical method of MANOVA.

Specifically, the research questions to be addressed have been stated in null form and grouped according to independent variables, below.

(1) Has the quantity and nature of environmental disclosure in annual reports in Canada changed over the last 23 years?

RQ₁: Over time, there has been no difference in the quantity of environmental disclosure presented in annual reports.

RQ₂: Over time, there has been no difference in the type of subject matter presented in environmental disclosure in annual reports.

RQ₃: Over time, there has been no difference in the type of information presented in environmental disclosure in annual reports.

RQ₄: Over time, there has been no difference in the location of environmental disclosure presented in annual reports.

RQ₅: Over time, there has been no difference in the tense of information presented in environmental disclosure in annual reports.

(2) Are there industry differences in the quantity and nature of environmental disclosure in annual reports in Canada?

RQ₆: On an industry basis, there is no difference in the quantity of environmental disclosure presented in annual reports.

RQ₇: On an industry basis, there is no difference in the type of subject matter presented in environmental disclosure in annual reports.

RQ₈: On an industry basis, there is no difference in the type of information presented in environmental disclosure in annual reports.

RQ₉: On an industry basis, there is no difference in the location of environmental disclosure presented in annual reports.

RQ₁₀: On an industry basis, there is no difference in the tense of information presented in environmental disclosure in annual reports.

(3) Is there a relationship between the size of a company and the quantity and nature of environmental disclosure in annual reports produced by the company?

RQ₁₁: Based on the size of a company, there is no difference in the quantity of environmental disclosure presented in annual reports.

RQ₁₂: Based on the size of a company, there is no difference in the type of subject matter presented in environmental disclosure in annual reports.

RQ₁₃: Based on the size of a company, there is no difference in the type of information presented in environmental disclosure in annual reports.

RQ₁₄: Based on the size of a company, there is no difference in the location of environmental disclosure presented in annual reports.

RQ₁₅: Based on the size of a company, there is no difference in the tense of information presented in environmental disclosure in annual reports.

(4) Is there a relationship between the profitability of a company and the quantity and nature of environmental disclosure in annual reports produced by the company?

RQ₁₆: Based on the profitability of a company, there is no difference in the quantity of environmental disclosure presented in annual reports.

RQ₁₇: Based on the profitability of a company, there is no difference in the type of subject matter presented in environmental disclosure in annual reports.

- RQ₁₈: Based on the profitability of a company, there is no difference in the type of information presented in environmental disclosure in annual reports.
- RQ₁₉: Based on the profitability of a company, there is no difference in the location of environmental disclosure presented in annual reports.
- RQ₂₀: Based on the profitability of a company, there is no difference in the tense of information presented in environmental disclosure in annual reports.

- (5) What portion of environmental disclosure found in annual reports falls within the domain of accounting?

Section 4.3 DATA COLLECTION

Annual reports were obtained in paper or fiche form from the following libraries: Western Business School Library, London Public Library, Administrative Studies Library at York University and the Metropolitan Reference Library in Toronto. From these locations, 183 of the 186 reports in the sample were obtained. (Section 4.4 explains why the main sample consisted of 186 and not 200 reports.)

The three annual reports that were missing were ordered from Micromedia. (Micromedia retains microform copies of all Ontario Securities Commission Filings.) Micromedia was unable to locate the three reports in question. The companies which produced the reports were contacted and the

three reports were requested. Two of the reports were for 1969 and the other was for 1979. The companies were unable to provide copies dating that far back.

Therefore, the sample under investigation consisted of 183 annual reports. Table 11 found just before Section 4.5 identifies, by company and industry, the 183 annual reports analyzed and the 17 that were unobtainable.

Each annual report was coded in its entirety by me using the Data Coding Sheet found in Appendix B. In order to ensure the reliability of the coding, a second judge was used to test the coding on a sample basis. The second judge was a recent MBA graduate. The second judge's sample was established by selecting ten annual reports from each industry on a random basis for a total of 40 annual reports. (Note: if the report was only available on fiche at the Metropolitan Library or at York University it was replaced with another selection. This was done to avoid the judge's travelling to Toronto.)

The second judge received training through an hour and a half briefing and a 50 page instruction guide. The instruction guide consisted of the following:

- (1) a list of the annual reports to be coded by the second judge;

- (2) a 12 page description of content analysis in general and the categories to be used specifically for this study;
- (3) a 13 page list of key terms used to extract sentences for coding;
- (4) an eight page guide of constructed sentences to show all possible combinations of subject matter and information type;
- (5) a three page content analysis protocol to outline the approach to coding;
- (6) a six page detailed description of the categories on the coding sheet; and
- (7) a six page guide to determining tense, extracted from The Elements of Grammar (Shertzer, 1986).

The second judge was asked to review the guide and ensure that the instructions were clear before coding was begun. During the coding, the second judge posed a few questions for clarification.

The inter-rater reliability between the first and second judge was calculated using the percentage of each annual report that was coded in agreement. On this basis, the overall level of reliability achieved was 84.02%. The inter-rater reliability was also calculated on the basis of sentence identification only. The reliability for this

measurement was 90.45%. Per Kassarian (1977, p. 14) "researchers can be quite satisfied with coefficients of reliability above 85 percent. Studies with reported reliabilities of less than 80 percent should be treated with suspicion." Thus, the inter-rater levels of reliability achieved are acceptable.

Section 4.4 DESCRIPTION OF DATA

This section provides a brief overview of the nature of the annual reports selected for examination.

4.4.1 Investment management industry

Because of the nature of this industry in Canada, it was not possible to obtain 10 companies that had been in this industry, incorporated prior to 1969 and publicly traded from 1969 onwards. Therefore, for some of the companies selected it was not possible to obtain 1969 and 1979 annual reports. Specifically, there are six companies in the sample for 1969 and 1979. The sample has 10 companies for the years 1989, 1990 and 1991.

The investment management companies range from total assets of less than \$10 million to over \$2 billion in 1991. Except for a couple of the small companies, the industry is

profitable for each of the five years under study. While the annual reports for the larger companies are similar to annual reports found for other industries, many of the reports reviewed for this industry were very plain in appearance - no graphics, no photos, limited colour - and they contained almost no voluntary information.

4.4.2 Mining industry

There are a sufficient number of mining companies in Canada that were incorporated or publicly traded from 1969 onwards to ensure a sample of 10 companies with annual reports that should have been available for each of the five years in question. However, it was not possible to obtain 3 annual reports for the sample. Therefore, there are eight companies in the sample for 1969, nine companies in the sample for 1979 and 10 companies in the sample for 1989, 1990 and 1991.

Many of the mining companies are small, (i.e., with total assets in 1991 of less than \$10 million). For the most part, these small companies are primarily engaged in exploration. Many of the companies in the sample suffered financial losses during the years under review. There are three companies in the sample that during at least one of

the years under review had retained earnings in a deficit position.

4.4.3 Oil and gas industry

There are a sufficient number of oil and gas companies in Canada that were incorporated and publicly traded from 1969 onwards to ensure a sample of 10 companies with annual reports available for each of the five years in question. Therefore, there are 10 companies in the sample for 1969, 1979, 1989, 1990 and 1991.

The selected sample is comprised of various types of companies. Many of the companies are small, (i.e., with total assets in 1991 of less than \$10 million). Some of these companies engage primarily in exploration. Some of the companies are subsidiaries controlled by large oil and gas parent companies. There are no clear cut trends on profitability.

4.4.4 Pulp and paper industry

Because of the nature of the pulp and paper industry in Canada, there were only 11 companies that were incorporated prior to 1969. Not all of these were publicly traded during 1969 and 1979. One of the companies was not in the pulp and

paper industry in 1969. The eleventh company that was not chosen for the sample was not publicly traded in 1969 and 1979. The sample consists of six companies for 1969, eight companies for 1979 and 10 companies for 1989, 1990 and 1991.

Nine of the ten companies in the sample have total assets greater than \$100 million in 1991. Four of the ten companies have total assets greater than \$1 billion in 1991. Thus, the sample consists of large companies. The pulp and paper industry has suffered substantial financial losses in 1990 and 1991 and most of the companies in the sample suffered losses during one or both of these years.

Table 11

Annual Reports Obtained and Analyzed

* = coded (183 reports in total)
 SHP = Shares Held Privately (13 reports in total)
 ARM = Annual Report Missing (3 reports in total)
 NSM = Not in Same Industry (1 report in total)

	1969	1979	1989	1990	1991
INVESTMENT MANAGEMENT					
Canadian General	*	*	*	*	*
Economic Investment	*	*	*	*	*
Garbell Holdings	SHP	SHP	*	*	*
MPG Investment	*	*	*	*	*
Pioneer LifeCo	SHP	SHP	*	*	*
Power Corporation	*	*	*	*	*
Power Financial Corp.	SHP	SHP	*	*	*
Third Canadian Gen.	*	*	*	*	*
Trans Rampart	SHP	SHP	*	*	*
United Corporations	*	*	*	*	*
MINING					
Anglo Dominion	*	*	*	*	*
Brunswick Mining	*	*	*	*	*
Canada Tungsten	*	*	*	*	*
Moneta Porcupine	*	*	*	*	*
NSR Resources	*	*	*	*	*
Newhawk Gold Mines	ARM	ARM	*	*	*
Nova Beaucage	*	*	*	*	*
Redstone Resources	*	*	*	*	*
Tintina Mines	ARM	*	*	*	*
Win-Eldrich Mines	*	*	*	*	*
OIL AND GAS					
American Leduc	*	*	*	*	*
First Calgary Pet.	*	*	*	*	*
Numac Oil & Gas	*	*	*	*	*
Place Resources	*	*	*	*	*
Prairie Oil Royalties	*	*	*	*	*
Ram Petroleums	*	*	*	*	*
Scurry-Rainbow Oil	*	*	*	*	*
Sogepet Limited	*	*	*	*	*
Trans-Dominion Energy	*	*	*	*	*
United Reef Petrlm.	*	*	*	*	*

Table 11 (Cont.)

Annual Reports Obtained and Analyzed

* = coded (183 reports in total)
 SHP = Shares Held Privately (13 reports in total)
 ARM = Annual Report Missing (3 reports in total)
 NSM = Not in Same Industry (1 report in total)

	1969	1979	1989	1990	1991
PULP AND PAPER					
Abitibi-Price Inc.	*	*	*	*	*
Cdn. Pacific Forest	*	*	*	*	*
Donohue Inc.	*	*	*	*	*
Fletcher Challenge	*	*	*	*	*
Quebecor	SHP	*	*	*	*
Repap Enterprises	SHP	SHP	*	*	*
Rolland Inc.	*	*	*	*	*
Roman Corp.	NSM	*	*	*	*
Scott Paper	*	*	*	*	*
West Fraser Timber	SHP	SHP	*	*	*

Section 4.5 RAW DATA AND STATISTICAL ASSUMPTIONS

Raw data results are presented in three tables and three figures. The raw data results for Sentence Count over Time by Industry are listed in Table 12 and the mean number of sentences is graphed in Figure 1. The raw data results for Sentence Count over Time by Size are listed in Table 13 and the mean number of sentences is graphed in Figure 2. The raw data results for Sentence Count over Time by Profitability are listed in Table 14 and the mean number of sentences is graphed in Figure 3.

Table 12 - Sentence Count Over Time by Industry
of Companies with the Indicated # of Sentences per Annual Report
I = Investment Management; O = Oil and Gas; M = Mining; P = Pulp and Paper

# of sent.	1 9 6 9			1 9 7 9			1 9 8 9			1 9 9 0			1 9 9 1			T O t.									
	I	O	P	I	O	P	I	O	P	I	O	P	I	O	P										
0	6	7	10	1	24	6	7	9	3	25	9	6	7	0	22	9	6	6	0	21	8	6	4	0	18
1-5	0	1	0	1	2	0	2	1	0	3	1	3	3	1	8	1	3	3	0	7	2	2	1	0	5
6-10	0	0	0	2	2	0	0	0	2	2	0	0	0	1	1	0	0	1	1	2	0	1	3	1	5
11-15	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1
16-20	0	0	0	1	1	0	0	0	1	1	0	1	0	2	3	0	0	0	1	1	0	0	1	0	1
21-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	2	2
31-40	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	3	3	0	0	0	1	1
41-50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51-60	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	0	1	0	1	2	0	0	0	2	2
61-70	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	2	3
71-80	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1
81-90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91-100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
> 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	6	8	10	6	30	6	9	10	8	33	10	10	10	10	40	10	10	10	10	40	10	10	10	10	40

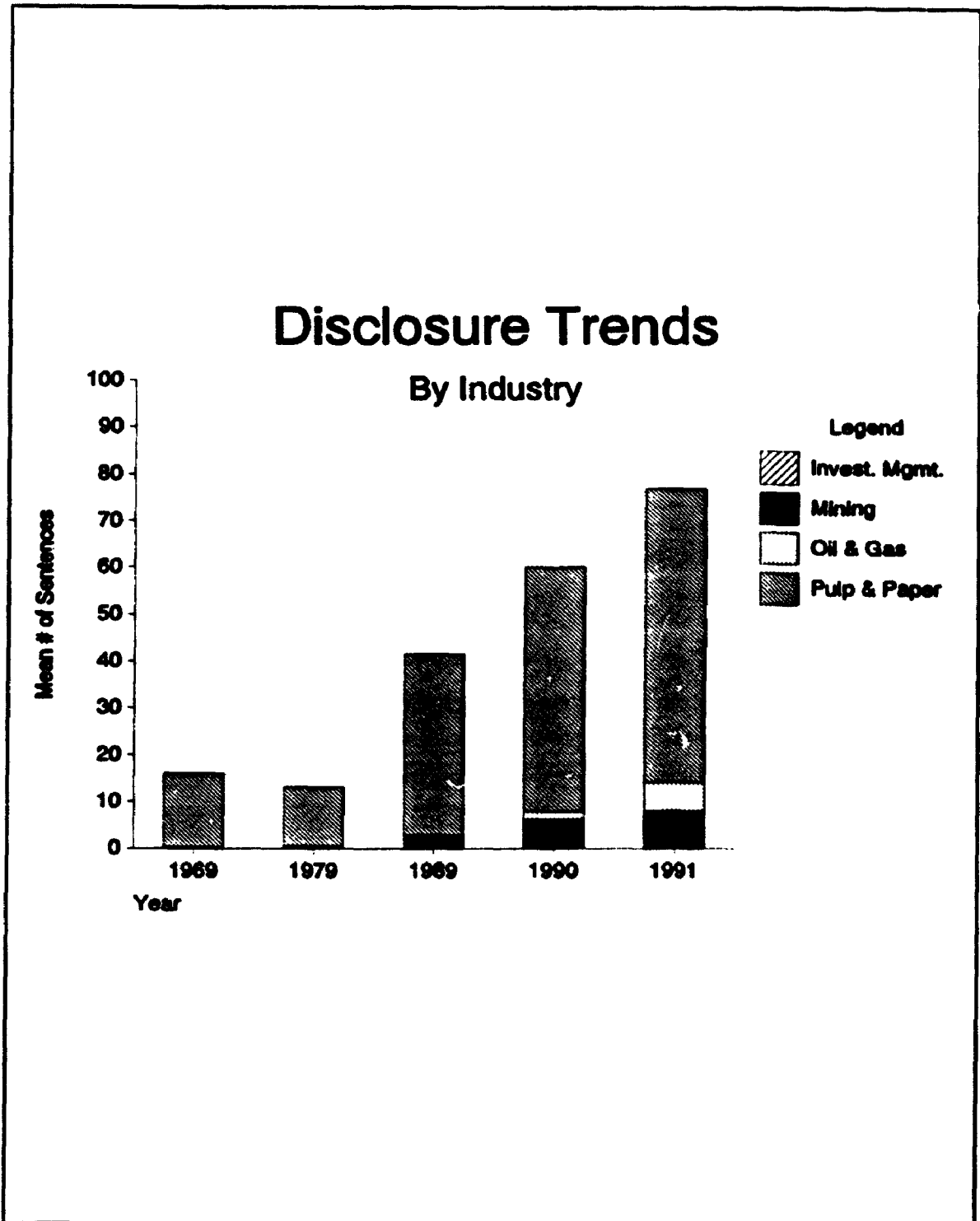


Figure 1

Disclosure Trends over Time by Industry

Table 13 - Sentence Count Over Time by Size
of Companies with the Indicated # of Sentences per Annual Report
S = Small (< = \$10 m.); M = Medium (> \$10 m. and < \$100 m.); L = Large (> = \$100 m.)

# of sent.	19 69			19 79			19 89			19 90			19 91			T O t.				
	S	M	L	T O t.	S	M	L	T O t.	S	M	L	T O t.	S	M	L					
0	15	7	2	24	14	7	4	25	11	5	6	22	9	7	5	21	9	6	3	18
1-5	0	2	0	2	0	2	1	3	1	4	3	8	2	3	2	7	2	1	2	5
6-10	0	0	0	0	0	1	1	2	0	0	1	1	0	1	1	2	1	2	2	5
11-15	0	1	1	2	0	0	1	1	0	0	1	1	0	0	0	0	0	0	1	1
16-20	0	0	1	1	0	0	1	1	0	0	3	3	0	0	1	1	0	0	1	1
21-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	1	1	2
31-40	0	0	0	0	0	0	0	0	0	0	1	1	0	0	3	3	0	0	1	1
41-50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51-60	0	1	0	1	0	0	1	1	0	0	1	1	0	0	2	2	0	0	2	2
61-70	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3	3
71-80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
81-90	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0
91-100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
> 100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1
Total	15	11	4	30	14	10	9	33	12	9	19	40	11	11	18	40	12	10	18	40

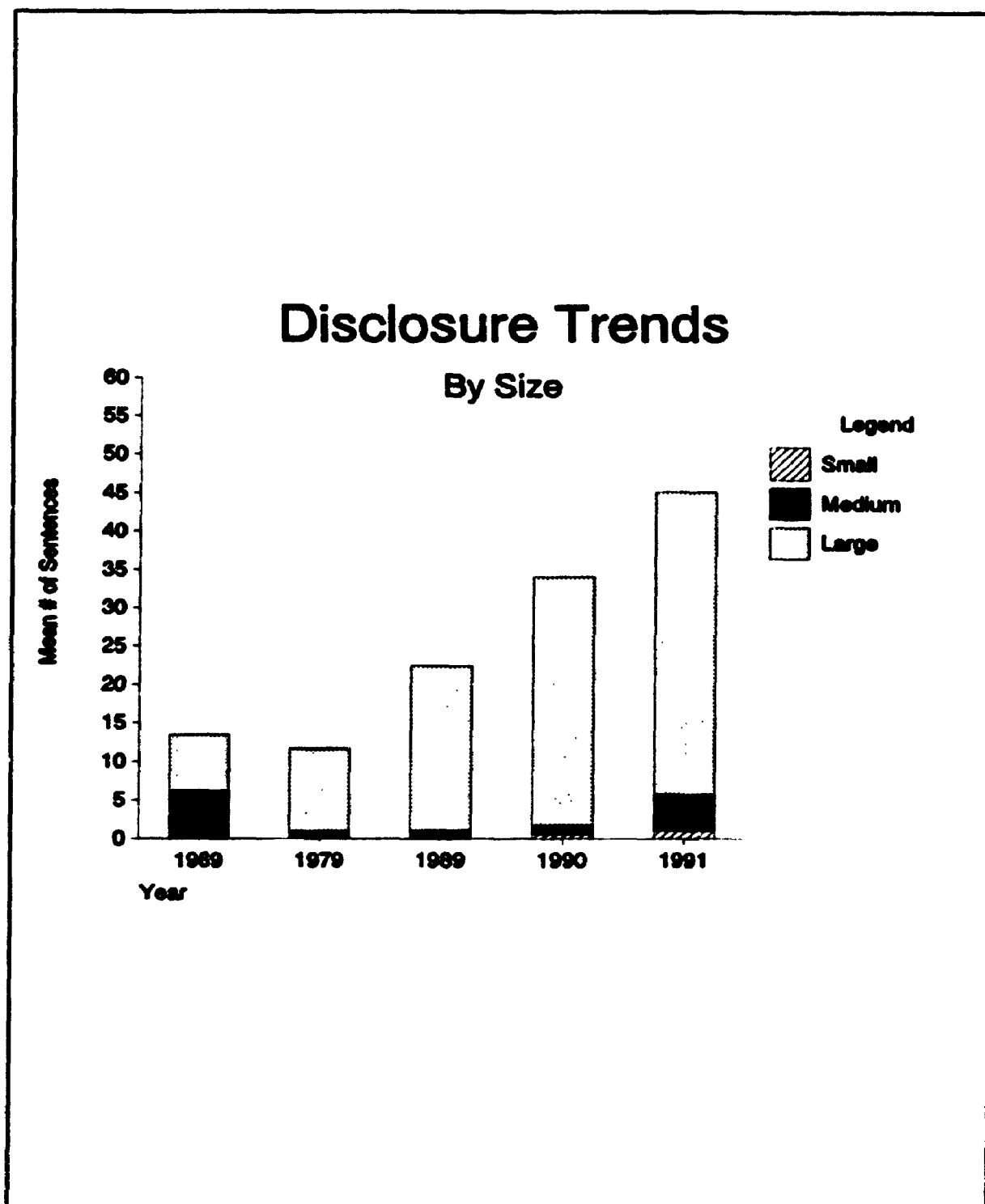


Figure 2

Disclosure Trends over Time by Size

Table 14 - Sentence Count Over Time by Profitability
of Companies with the Indicated # of Sentences per Annual Report
L = Low (ROA < Industry Mean); H = High (ROA > = Industry Mean)

# of sent.	19 69		19 79		19 89		19 90		19 91		T O t.				
	L	H	L	H	L	H	L	H	L	H					
0	8	16	12	13	25	12	10	22	6	15	21	4	14	18	
1-5	1	1	0	3	3	6	2	8	2	5	7	0	5	5	
6-10	0	0	2	0	2	0	1	1	1	1	2	1	4	5	
11-15	0	2	2	0	1	1	0	1	0	0	0	0	1	1	
16-20	1	0	1	0	1	1	2	3	0	1	1	1	0	1	
21-30	0	0	0	0	0	0	0	0	0	2	2	1	1	2	
31-40	0	0	0	0	0	0	1	1	0	3	3	0	1	1	
41-50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
51-60	0	1	1	0	1	0	1	1	0	2	2	1	1	2	
61-70	0	0	0	0	0	0	1	1	0	0	0	1	2	3	
71-80	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
81-90	0	0	0	0	0	1	1	2	0	0	0	0	0	0	
91-100	0	0	0	0	0	0	0	0	0	1	1	0	0	0	
> 100	0	0	0	0	0	0	0	0	0	1	1	1	0	1	
Total	10	20	30	15	18	33	21	19	40	9	31	40	11	29	40

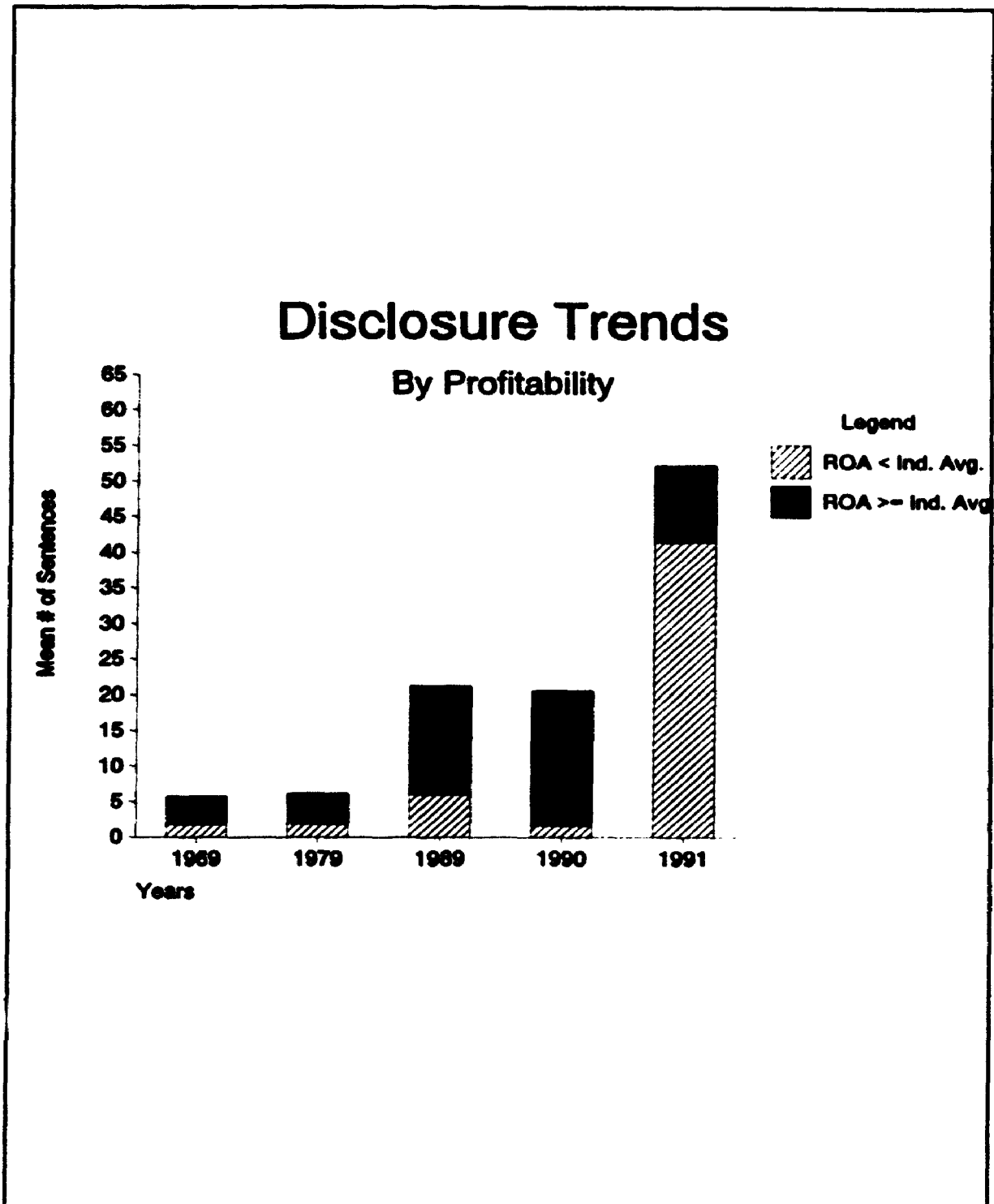


Figure 3

Disclosure Trends over Time by Profitability

Many of the cells in Tables 12, 13 and 14 have a value of zero, indicating that no disclosure of the specified type was found. This can be informative in and of itself for it indicates categories where a change has taken place from no disclosure to disclosure. However, this does not lend itself to statistical analysis. Such cells have means of zero and standard deviation of zero. Including zero cells in the statistical analysis renders the mean square error term and interpretation of the results ambiguous at best.

Therefore, for the independent variables Industry, Size and Profitability, data have been aggregated across time (as suggested by Paunonen and Gardner, 1991). Even after aggregation, several of the categories of the dependent variables have zero-value cells at certain levels. These zero-value cells are identified, as appropriate, under each combination of independent and dependent variable and the categories to which they pertain are eliminated from the statistical analysis. In order to consider the information provided by the zero-value cells, Section 4.10 provides a comprehensive analysis which includes all zero-value cells.

The independent variable Time is evaluated on a repeated measures basis.

Analysis with Industry, Size and Profitability

Quantity of information is analyzed under the variables Industry, Size and Profitability using analysis of variance (ANOVA). When using ANOVA, which produces an F test, certain assumptions are made about the nature of the data. These assumptions are: (1) samples are selected randomly and independently from the respective populations; (2) all population probability distributions are normal; and (3) population variances are equal.

The first assumption of random selection has been met and through aggregation, independence is achieved.

Based on the results of the Kolmogorov-Smirnov goodness of fit test, the second assumption of normality is not met. However, Kirk (1982, p. 75) indicates that "the F test is quite robust with respect to violation of the normality assumption."

The third assumption, was tested with the Cochran's C test for homogeneity of variance and it was found that this assumption of equality of population variances is not met. Kirk (1982, p. 78) indicates that when sample n's are equal "there is little reason to test the homogeneity of variance assumptions prior to performing an analysis of variance."

While the sample n's under study are not equal, the differences should not be substantial enough to influence the interpretation of significance level. Tabachnick and Fidell (1989, p. 324) would appear to support this. They indicate that to ensure robustness, the ratio of the largest to smallest sample size should not be greater than four to one. As the ratio of largest to smallest in the samples under study is only 29 to 11 (for profitability), it would seem that the robustness of the F test can be relied upon.

Where ANOVA results are found to be significant at a level of $p \leq .05$ a posthoc analysis of means is used to determine which means differ. This is conducted using a Dunn's t multiple comparison test, again with a significance level of $p \leq .05$.

Nature of information is analyzed under the variables Industry, Size and Profitability using multiple analysis of variance (MANOVA). When using multivariate analysis of variance (MANOVA) certain assumptions are made about the nature of the data. These assumptions include: (1) samples are selected randomly and independently from the respective populations; (2) all population probability distributions are normal; and (3) population variances are equal.

The first assumption of random selection has been met and through aggregation independence is achieved.

Although the assumption of normality is not met, Tabachnick and Fidell (1989, p. 378) indicate that if there are at least 20 degrees of freedom in the error term in the univariate case that MANOVA is robust. After aggregation and elimination of zero cells, the degrees of freedom in the various univariate analyses are sufficient to ensure that MANOVA is robust enough to withstand the violation of the normality assumption.

The third assumption of homogeneity of variance is also violated. However, the key to robustness lies in both the number of dependent variables used and the extent to which sample sizes are unequal. The greatest discrepancy in sample size occurs in the independent variable Size which has a ratio of 29 to 11. While this is less than ideal, it should still render the Manova sufficiently robust. Because of this violation, Pillai's criterion is used instead of Wilk's Lambda to evaluate multivariate significance. Tabachnick and Fidell indicate that Pillai's criterion is more robust.

Where MANOVA results are found to be significant at a level of $p \leq .05$, a univariate analysis is undertaken (using the

same level of significance ($p \leq .05$) per Hummel and Sligo, 1971). Where the univariate results are significant, a posthoc analysis of means is used to determine which means differ. This is conducted using a Dunn's t multiple comparison test, again with a significance level of $p \leq .05$.

Analysis with Time

Both quantity and nature of information under the variable Time are analyzed using a repeated measures MANOVA. The discussion above, concerning MANOVA statistical assumptions and analysis of results applies to the variable Time as well. However, there is one additional assumption that is required for the within subjects analysis that is used in a repeated measures design. That is the assumption of sphericity. In cases where the assumption of sphericity is violated, an adjustment is made to the degrees of freedom using the Huynh-Feldt Epsilon (Norusis, 1990, p. B-119) and the F ratio is re-evaluated accordingly.

Table 15 presents the mean number of sentences found by independent variable prior to adjustment for missing annual reports and zero-value cells. This is followed by Table 16 which lays out a guide to 16 further tables which present the mean number of sentences for each level of the dependent

variables: Subject Matter, Information Type, Location and Tense. These 16 tables are interspersed with the results of the analysis.

Table 15

Mean Number of Sentences by Independent Variable

TIME	<u>1969</u>	<u>1979</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
	3.233	3.212	10.400	15.025	19.225
	n = 30	n = 33	n = 40	n = 40	n = 40
INDUSTRY	<u>Investment Management</u>	<u>Mining</u>	<u>Oil & Gas</u>	<u>Pulp & Paper</u>	
	0.096	3.553	1.700	39.388	
	n = 42	n = 47	n = 50	n = 44	
SIZE	<u>Small</u>	<u>Medium</u>	<u>Large</u>		
	0.297	2.881	26.808		
	n = 64	n = 51	n = 68		
PROFITABILITY	<u>Low</u>	<u>High</u>			
	9.788	11.478			
	n = 66	n = 117			

Table 16
Upcoming Tables Which Present Results
for Each Level of the Dependent Variables

VARIABLE COMBINATION	Quantity	Subject Matter	Information Type	Location	Tense	Signif. Results
Time	Table 17	Table 18	Table 19	Table 20	Table 21	Table 22
Industry	Table 23	Table 24	Table 25	Table 26	Table 27	Table 28
Size	Table 29	Table 30	Table 31	Table 32	Table 33	Table 34
Profitability	Table 35	Table 36	Table 37	Table 38	Table 39	No Sig. Results

Section 4.6 RESULTS - INDEPENDENT VARIABLE - TIME

4.6.1 Quantity of disclosure over time

A repeated measures design requires that each year include annual reports from the same companies as the other years. Therefore, because 1969 represents the year with the fewest annual reports, 30, it is the companies which provided these reports that are retained for the remaining years after 1969. Thus, this repeated measures analysis produces a 5 cell design with 30 annual reports per cell. The means and standard deviations are presented in Table 17.

Table 17
Quantity over Time
 Mean number of sentences
 (Standard deviation)

	1969	1979	1989	1990	1991
Sentence Count	3.233 (10.166)	3.333 (11.211)	9.933 (22.155)	11.667 (22.553)	15.933 (25.194)

The repeated measures analysis indicates that the following contrasts are statistically significant. In other words, the quantity of disclosure differs between the following years:

- 1991 quantity is > 1979;
- 1991 quantity is > 1969;
- 1990 quantity is > 1979; and
- 1990 quantity is > 1969.

Therefore, I have to reject the null form of RQ_j . I conclude that, over time, there has been a statistically significant ($p \leq .05$) difference in the quantity of environmental disclosure presented in annual reports. This difference takes the form of an increase in the quantity of disclosure. However, it should be noted that this increase appears to be incremental as the difference between adjacent years or adjacent decades is not statistically significant.

4.6.2 Subject matter over time

The means and standard deviations for the various levels of subject matter over time are outlined in Table 18. Because subject matter categories 2--By-products, 5--Site Restoration and 7--Policy have zero-value cells they were eliminated from the analysis. (Note that the analysis includes the 30 companies reporting in 1969.)

A repeated measures MANOVA was performed and the results indicate that subject matter does differ over time. Therefore, I have to reject the null form of RQ_2 . I conclude that, over time, there has been a statistically significant ($p \leq .05$) difference in the type of subject matter presented in environmental disclosure in annual reports. Subject matter has changed over time for the following categories and between the following years:

- 1--Product:

1991 use is > 1969;
1991 use is > 1979; and
1989 use is > 1969.

- 6--External Demands:

1991 use is > 1969; and
1991 use is > 1979.

- 8--Management Systems:

1991 use is > 1979.

Table 18
Subject Matter over Time
Mean number of sentences
(Standard deviation)

	1969	1979	1989	1990	1991
(1) Product	.433 (1.478)	.600 (2.737)	3.700 (9.033)	3.167 (6.237)	3.933 (8.473)
(2) By-product	.000 (.000)	.067 (.365)	.133 (.346)	.367 (1.650)	.733 (2.490)
(3) Pollution Control	1.300 (4.829)	.400 (1.163)	1.000 (2.792)	1.000 (2.519)	1.200 (3.199)
(4) Conserva- tion	.300 (1.149)	1.100 (3.294)	1.200 (2.809)	1.633 (4.986)	1.467 (3.060)
(5) Site Rest- oration	.000 (.000)	.000 (.000)	.167 (.531)	.567 (2.079)	2.067 (4.177)
(6) External Demands	.500 (1.570)	.967 (4.038)	1.633 (3.899)	2.267 (4.777)	3.300 (6.331)
(7) Policy	.000 (.000)	.000 (.000)	1.100 (3.220)	.867 (3.159)	.900 (2.833)
(8) Management Systems	.700 (2.020)	.200 (.761)	1.000 (2.304)	1.800 (3.718)	2.333 (4.978)
Total Mean # of Sentences	3.233	3.333	9.933	11.667	15.933

4.6.3 Information type over time

The means and standard deviations for the various levels of information type over time are outlined in Table 19.

Because information type categories 4--Risk Management-Quantitative and 10--Non-specific have zero-value cells they were eliminated from the analysis. (Note that the analysis includes the 30 companies reporting in 1969.)

Table 19
Information Type over Time
 Mean number of sentences
 (Standard deviation)

	1969	1979	1989	1990	1991
(1) Dollars	.167 (.592)	.167 (.531)	.700 (1.579)	1.300 (3.030)	2.300 (4.829)
(2) Financial Impact	.200 (.664)	.133 (.434)	.967 (2.297)	.900 (2.171)	2.067 (2.970)
(3) Risk Mgmt. -General	.100 (.548)	.400 (2.010)	.233 (.817)	.367 (.890)	1.000 (2.289)
(4) Risk Mgmt. -Quant.	.000 (.000)	.233 (1.278)	.100 (.403)	.067 (.365)	.133 (.571)
(5) Risk Mgmt. -Comp.	.067 (.254)	.133 (.571)	.033 (.183)	.167 (.461)	.467 (1.074)
(6) Acts- Quant.	.300 (1.149)	.267 (1.015)	.367 (1.159)	.567 (1.612)	.700 (1.705)
(7) Acts- General	1.667 (5.529)	1.400 (4.680)	4.067 (8.792)	4.767 (9.358)	5.600 (10.417)
(8) Laws and Regn.	.367 (1.159)	.267 (.785)	.467 (1.224)	1.167 (2.394)	1.833 (3.249)
(9) General	.367 (1.033)	.100 (.403)	2.500 (7.943)	1.600 (3.962)	1.333 (3.809)
(10) Non- Specific	.000 (.000)	.233 (.898)	.500 (1.592)	.767 (2.596)	.500 (1.333)
Total Mean # of Sentences	3.233	3.333	9.933	11.667	15.933

A repeated measures MANOVA was performed and the results indicated that information type does differ over time. Therefore, I have to reject the null form of H_0 . I conclude that, over time, there has been a statistically significant ($p \leq .05$) difference in the type of information presented in environmental disclosure in annual reports. It was found that information type has changed over time for the following categories and between the following years:

- 1--Dollars:

1991 use is > 1969;
1991 use is > 1979; and
1991 use is > 1989.

- 2--Financial Impact:

1991 use is > 1969;
1991 use is > 1979;
1991 use is > 1989; and
1991 use is > 1990.

- 7--Acts/Processes-General:

1991 use is > 1969;
1991 use is > 1979; and
1990 use is > 1979.

- 8--Laws and Regulation:

1991 use is > 1969;
1991 use is > 1979; and
1991 use is > 1989.

4.6.4 Location of information over time

The means and standard deviations for the various levels of location of information over time are outlined in Table 20. Because location of information category 2-Management Discussion and Analysis has zero-value cells it was eliminated from the analysis. (Note that the analysis includes the 30 companies reporting in 1969.)

A repeated measures MANOVA was performed and the results indicate that location of information does change over time. Therefore, I have to reject the null form of RQ_4 . I conclude that, over time, there has been a statistically significant ($p \leq .05$) difference in the location of environmental disclosure presented in annual reports. It was found that location of information has changed over time for the following categories and between the following years:

- 1--Financial Statements:

1991 use is > 1969;

1991 use is > 1979; and

1991 use is > 1989.

- 4--Corporate Overview:

1991 use is > 1969; and

1991 use is > 1979.

Table 20
Location of Information over Time
 Mean number of sentences
 (Standard deviation)

	1969	1979	1989	1990	1991
(1) Financial Statements	.033 (.183)	.467 (2.374)	.233 (.626)	.800 (1.495)	1.667 (2.644)
(2) Mgmt. Disc. and Analysis	.000 (.000)	.000 (.000)	.767 (2.269)	1.467 (4.175)	2.433 (4.599)
(3) Letter to Shareholders	1.233 (3.901)	.200 (.551)	1.767 (4.207)	3.267 (6.868)	2.567 (4.454)
(4) Corporate Overview	1.967 (9.514)	2.667 (8.891)	7.167 (18.248)	6.133 (15.339)	9.267 (17.861)
Total Mean # of Sentences	3.233	3.333	9.933	11.667	15.933

4.6.5 Tense of information over time

The means and standard deviations for the various levels of tense of information over time are outlined in Table 21. As there were no zero-value cells, no categories needed deletion. (Note that the analysis includes the 30 companies reporting in 1969.)

A repeated measures MANOVA was performed and the results indicate that tense of information does differ over time.

Therefore, I have to reject the null form of RQ_3 . I conclude that, over time, there has been a statistically significant ($p \leq .05$) difference in the tense of information presented in environmental disclosure in annual reports. It was found that tense of information has changed over time for the following categories and between the following years:

- 1--Past Tense:

1991 use is > 1969; and

1991 use is > 1979.

- 2--Present Tense:

1991 use is > 1969;

1991 use is > 1979; and

1989 use is > 1969.

- 3--Future Tense:

1991 use is > 1969; and

1991 use is > 1979.

Table 21
Tense of Information by Time
 Mean number of sentences
 (Standard deviation)

	1969	1979	1989	1990	1991
(1) Past	1.567 (4.754)	1.100 (3.478)	3.567 (8.419)	4.233 (8.144)	6.233 (9.895)
(2) Present	1.367 (4.359)	1.600 (5.347)	4.967 (11.171)	5.867 (12.233)	7.367 (12.475)
(3) Future	.300 (1.149)	.633 (2.512)	1.400 (3.125)	1.567 (3.191)	2.333 (4.551)
Total Mean # of Sentences	3.233	3.333	9.933	11.667	15.933

4.6.6 Effect of time on disclosure

The various analyses undertaken indicate that environmental disclosure has increased incrementally over time with no statistically significant increase between decades or years. This finding is consistent with recent surveys outlined in Chapter One (Blunn, 1992; and Harris 1992).

In addition to examining whether or not there has been an increase in disclosure, this thesis examines the categories in which the increase in disclosure is evident. Under the

categories of subject matter, information type, location of information and tense of information I established that this increase in disclosure appears in only some of the categories. Table 22 summarizes which categories reflect an increase in environmental disclosure.

Table 22
Significant Differences due to Time
 (* = significant at $p \leq .05$)

	1991 > 1969	1991 > 1979	1991 > 1989	1991 > 1990	1990 > 1979	1989 > 1969
SUBJECT MATTER Product	*	*				*
External Demands	*	*				
Management Systems		*				
INFO. TYPE Dollars	*	*	*			
Financial Impact	*	*	*	*		
Acts- General	*	*			*	
Non- Specific	*	*	*			
LOCATION Fin. Stmt.	*	*	*			
Corporate Overview	*	*				
TENSE Past	*	*				
Present	*	*				*
Future	*	*				

Section 4.7 RESULTS - INDEPENDENT VARIABLE - INDUSTRY

4.7.1 Quantity of disclosure by industry

The variable Industry was analyzed by aggregating the information over the five years on an industry basis. This produces a 4 cell design with 10 aggregate measures in each cell. The means and standard deviations are presented in Table 23.

Table 23

Quantity by Industry

Mean aggregate number of sentences

(Standard deviation)

	Investment Management	Mining	Oil and Gas	Pulp and Paper
Sentence Count	.467 (1.033)	17.033 (43.836)	8.500 (9.132)	214.008 (219.597)

An ANOVA was performed and the results indicate that the following contrasts are statistically significant. In other words, the quantity of disclosure differs between the following industries:

- Pulp and Paper quantity is > Investment Management;
- Pulp and Paper quantity is > Mining; and
- Pulp and Paper quantity is > Oil and Gas.

Therefore, I have to reject the null form of RQ_6 . I conclude that, on an industry basis, there is a statistically significant ($p \leq .05$) difference in the quantity of environmental disclosure presented in annual reports.

4.7.2 Subject matter by industry

The means and standard deviations for the various levels of subject matter by industry are outlined in Table 24. The investment management industry has a large number of zero-value cells and therefore has been deleted from the analysis. As well, because subject matter categories 4--Conservation and 7--Policy have zero-value cells they were eliminated from the analysis.

Table 24
Subject Matter by Industry
 Mean aggregate number of sentences
 (Standard deviation)

	Investment Management	Mining	Oil and Gas	Pulp and Paper
(1) Product	.267 (.584)	1.400 (4.427)	.700 (1.337)	67.383 (69.572)
(2) By-product	.000 (.000)	2.300 (6.929)	.400 (1.265)	4.367 (8.623)
(3) Pollution Control	.000 (.000)	1.300 (3.466)	.300 (.675)	21.308 (21.274)
(4) Conserva- tion	.000 (.000)	1.100 (3.479)	.000 (.000)	37.500 (44.767)
(5) Site Restoration	.000 (.000)	3.800 (9.199)	4.100 (4.677)	1.000 (1.764)
(6) External Demands	.200 (.632)	2.833 (6.496)	2.600 (4.142)	43.367 (48.831)
(7) Policy	.000 (.000)	1.167 (2.520)	.000 (.000)	10.850 (11.809)
(8) Management Systems	.000 (.000)	3.133 (7.767)	.400 (.699)	28.233 (25.625)
Total Mean # of Sentences	.467	17.033	8.502	214.008

A MANOVA was performed and the results indicate that subject matter differs by industry. Thus, I have to reject the null form of RQ_7 . I conclude that, on an industry basis, there

statistically significant ($p \leq .05$) difference in the type of subject matter presented in environmental disclosure in annual reports. Subject matter differs between the following industries for the following categories:

- 1--Product:

Pulp and Paper use is > Mining; and
Pulp and Paper use is > Oil and Gas.

- 3--Pollution Control:

Pulp and Paper use is > Mining; and
Pulp and Paper use is > Oil and Gas.

- 6--External Demands:

Pulp and Paper use is > Mining; and
Pulp and Paper use is > Oil and Gas.

- 8--Management Systems:

Pulp and Paper use is > Mining; and
Pulp and Paper use is > Oil and Gas.

4.7.3 Information type by industry

The means and standard deviations for the various levels of information type by industry are outlined in Table 25. The investment management industry has a large number of zero-value cells and therefore has been deleted from the analysis. As well, because information type categories 5--Site Restoration and 6--Acts/Processes-Quantitative have zero-value cells they were eliminated from the analysis.

Table 25
Information Type by Industry
 Mean aggregate number of sentences
 (Standard deviation)

	Investment Management	Mining	Oil and Gas	Pulp and Paper
(1) Dollars	.000 (.000)	3.500 (10.058)	1.400 (1.838)	18.375 (17.814)
(2) Financial Impact	.100 (.316)	2.300 (6.001)	2.400 (2.836)	13.750 (12.459)
(3) Risk Mgmt. - General	.167 (.527)	1.267 (3.460)	.200 (.422)	7.833 (7.663)
(4) Risk Mgmt. - Quant.	.000 (.000)	.300 (.949)	.100 (.316)	1.200 (3.458)
(5) Risk Mgmt. - Comp.	.000 (.000)	.867 (1.642)	.000 (.000)	4.692 (5.145)
(6) Acts- Quantified	.000 (.000)	.300 (.949)	.000 (.000)	11.925 (14.558)
(7) Acts- General	.100 (.316)	4.967 (12.410)	1.500 (2.068)	100.267 (109.230)
(8) Laws and Regn.	.100 (.316)	1.867 (3.985)	2.300 (3.622)	12.783 (12.687)
(9) General	.000 (.000)	1.567 (4.400)	.300 (.675)	26.917 (24.781)
(10) Non- Specific	.000 (.000)	.100 (.316)	.300 (.675)	16.267 (32.516)
Total Mean # of Sentences	.467	17.033	8.500	214.008

A MANOVA was performed and the results indicate that information type does differ by industry. Therefore, I have to reject the null form of H_0 . I conclude that, on an industry basis, there is a statistically significant ($p \leq .05$) difference in the type of information presented in environmental disclosure in annual reports. It was found that information type differs between the following industries for the following categories:

- 1--Dollars:

Pulp and Paper use is > Mining; and

Pulp and Paper use is > Oil and Gas.

- 2--Financial Impact:

Pulp and Paper use is > Mining; and

Pulp and Paper use is > Oil and Gas.

- 3--Risk Management-General:

Pulp and Paper use is > Mining; and

Pulp and Paper use is > Oil and Gas.

- 7--Acts/Processes-General

Pulp and Paper use is > Mining; and

Pulp and Paper use is > Oil and Gas.

- 8--Laws and Regulations:

Pulp and Paper use is > Mining; and

Pulp and Paper use is > Oil and Gas.

- 9--General:

Pulp and Paper use is > Mining; and

Pulp and Paper use is > Oil and Gas.

4.7.4 Location of information by industry

The means and standard deviations for the various levels of location of information by industry are outlined in Table 26. The investment management industry has a zero-value cell and therefore has been deleted from the analysis.

A MANOVA was performed and the results indicate that location of information does differ by industry. Therefore, I have to reject the null form of H_0 . I conclude that, on an industry basis, there is a statistically significant ($p \leq .05$) difference in the location of environmental disclosure presented in annual reports. It was found that location of information differs between industries for the following categories:

- 1--Financial Statements:

Pulp and Paper use is > Mining.

- 2--Management Discussion and Analysis:

Pulp and Paper use is > Oil and Gas.

- 3--Letter to Shareholders:

Pulp and Paper use is > Mining; and

Pulp and Paper use is > Oil and Gas.

- 4--Corporate Overview:

Pulp and Paper use is > Mining; and

Pulp and Paper use is > Oil and Gas.

Table 26
Location of Information by Industry
 Mean aggregate number of sentences
 (Standard deviation)

	Investment Management	Mining	Oil and Gas	Pulp and Paper
(1) Financial Statements	.000 (.000)	1.600 (3.406)	3.400 (3.718)	11.267 (12.580)
(2) Mgmt. Disc. and Analysis	.200 (.632)	4.367 (13.233)	1.400 (2.366)	16.825 (16.372)
(3) Letter to Shareholders	.100 (.316)	5.333 (12.731)	2.400 (3.748)	32.642 (16.681)
(4) Corporate Overview	.167 (.527)	5.733 (15.255)	1.300 (2.983)	153.275 (203.074)
Total Mean # of Sentences	.467	17.033	8.500	214.008

4.7.5 Tense of information by industry

The means and standard deviations for the various levels of tense of information by industry are outlined in Table 27. The investment management industry has a zero-value cell and therefore has been deleted from the analysis.

A MANOVA was performed and the results indicate that tense of information does differ by industry. Therefore, I have

to reject the null form of RQ_{10} . I conclude that, on an industry basis, there is a statistically significant ($p \leq .05$) difference in the tense of information presented in environmental disclosure in annual reports. It was found that tense of information differs between industries for the following categories:

- 1--Past:

Pulp and Paper use is > Mining; and
Pulp and Paper use is > Oil and Gas.

- 2--Present:

Pulp and Paper use is > Mining; and
Pulp and Paper use is > Oil and Gas.

- 3--Future:

Pulp and Paper use is > Mining; and
Pulp and Paper use is > Oil and Gas.

Table 27
Tense of Information by Industry
 Mean aggregate number of sentences
 (Standard deviation)

	Investment Management	Mining	Oil and Gas	Pulp and Paper
(1) Past	.100 (.316)	7.200 (17.358)	3.800 (3.994)	79.542 (72.460)
(2) Present	.000 (.000)	7.833 (20.211)	4.100 (4.771)	108.483 (127.300)
(3) Future	.367 (.777)	2.000 (6.325)	.600 (1.075)	25.983 (24.367)
Total Mean # of Sentences	.467	17.033	8.500	214.008

4.7.6 Effect of industry on disclosure

The various analyses undertaken indicate that the extent of environmental disclosure differs by industry. This finding is consistent with recent the work done by Thompson, Olsen and Dietrich (1987); and United Nations Economic and Social Council (1992).

In addition to examining whether or not there are differences in disclosure, this thesis examines the categories in which the increase in disclosure is evident.

Under the categories of subject matter, information type, location of information and tense of information I established that this difference in disclosure appears in only some of the categories. Table 28 summarizes which categories reflect differences in environmental disclosure.

Table 28
Significant Differences due to Industry

(* = significant at $p \leq .05$)

	Pulp & Paper > Mining	Pulp & Paper > Oil & Gas
SUBJECT MATTER Product	*	*
Pollution Control	*	*
External Demands	*	*
Management Systems	*	*
INFO. TYPE Dollars	*	*
Financial Impact	*	*
Risk Mgmt. - General	*	*
Acts- General	*	*
Laws and Regulations	*	*
General	*	*

Table 28 (Cont.)

Significant Differences due to Industry

(* = significant at $p \leq .05$)

	Pulp & Paper > Mining	Pulp & Paper > Oil & Gas
LOCATION Fin. Stmt.	*	
Mgmt. Disc. & Analysis		*
Letter to Shrholder.	*	*
Corporate Overview	*	*
TENSE Past	*	*
Present	*	*
Future	*	*

Section 4.8 RESULTS - INDEPENDENT VARIABLE - SIZE4.8.1 Quantity of disclosure by size

The variable Size was based on total assets. Small companies are those which have total assets less than or equal to \$10 million. Medium companies are those which have total assets greater than \$10 million but less than \$100 million. Large companies are those that have total assets greater than or equal to \$100 million. The Size variable

was analyzed by aggregating the information over the five years on an size basis. (Note that if a company changed size over the five years, it was classified based on the most frequently occurring level of size.) This produces a 3 cell design with 13 companies in the small size; 9 in the medium size and 18 in the large size. The means and standard deviations are presented in Table 29.

Table 29
Quantity by Size of Company
 Mean aggregate number of sentences
 (Standard deviation)

	Small	Medium	Large
Sentence Count	1.846 (3.236)	9.731 (16.725)	127.139 (190.890)

An ANOVA was performed and the results indicate that the following contrasts are statistically significant. In other words, the quantity of disclosure differs between the following size companies:

Quantity for Large Companies is > Small Companies.

Therefore, I have to reject the null form of RQ_{11} . I conclude that, on a size basis, there is a statistically

significant ($p \leq .05$) difference in the quantity of environmental disclosure presented in annual reports.

4.8.2 Subject matter by size of company

The means and standard deviations for the various levels of subject matter by size of company are outlined in Table 30. Because subject matter categories 2--By-products, 4--Conservation, and 7--Policy have zero-value cells, they were eliminated from the analysis.

A MANOVA was performed and the results indicate that subject matter does not differ by size of company. Therefore, I can not reject the null form of RQ_{12} . I conclude that, based on the size of a company, there is no difference in subject matter presented in environmental disclosure in annual reports.

Table 30
Subject Matter by Size of Company
 Mean aggregate number of sentences
 (Standard deviation)

	Small Companies <= \$10 mill.	Medium Companies > \$10 mill. and < \$100 mill.	Large Companies >= \$100 mill.
(1) Product	.385 (1.121)	3.472 (10.417)	36.736 (61.311)
(2) By-product	.000 (.000)	.556 (1.333)	3.648 (8.060)
(3) Pollution Control	.154 (.555)	.222 (.667)	12.505 (18.663)
(4) Conservation	.000 (.000)	.278 (.833)	21.306 (37.608)
(5) Site Restoration	.462 (1.391)	1.657 (3.317)	3.778 (7.329)
(6) External Demands	.538 (1.450)	2.481 (4.857)	25.593 (41.224)
(7) Policy	.000 (.000)	.407 (.813)	6.472 (10.123)
(8) Management Systems	.308 (.630)	.648 (1.303)	17.102 (23.314)
Total Mean # of Sentences	1.846	9.731	127.139

4.8.3 Information type by size of company

The means and standard deviations for the various levels of information type by size of company are outlined in Table 31. Because information type categories 3--Risk Management-General, 4--Risk Management-Quantified, 5--Risk Management-Compliance, 6--Acts/Processes-Quantified, 9--General and 10--Non-specific have zero-value cells, they were eliminated from the analysis.

A MANOVA was performed and the results indicate that information type does not differ by size of company. Therefore, I can not reject the null form of H_0 . I conclude that, based on the size of a company, there is no difference in information type presented in environmental disclosure in annual reports.

Table 31

Information Type by Size of Company

Mean aggregate number of sentences/(Standard deviation)

	Small Companies <= \$10 mill.	Medium Companies > \$10 mill. & < \$100 mill.	Large Companies > = \$100 mill.
(1) Dollars	.077 (.277)	.889 (1.833)	12.431 (16.268)
(2) Financial Impact	.308 (1.109)	.806 (1.402)	9.681 (11.038)
(3) Risk Mgmt. - General	.000 (.000)	.185 (.556)	5.167 (6.806)
(4) Risk Mgmt. - Quant.	.000 (.000)	.000 (.000)	.889 (2.632)
(5) Risk Mgmt. - Comp.	.000 (.000)	.546 (.841)	2.815 (4.467)
(6) Acts- Quantified	.000 (.000)	.000 (.000)	6.792 (12.147)
(7) Acts- General	.846 (1.725)	6.324 (15.095)	55.579 (94.490)
(8) Laws and Regn.	.615 (1.446)	.407 (.641)	8.824 (10.836)
(9) General	.000 (.000)	.463 (.942)	15.759 (22.356)
(10) Non- Specific	.000 (.000)	.111 (.333)	9.204 (25.020)
Total Mean # of Sentences	1.846	9.731	127.139

4.8.4 Location of information by size of company

The means and standard deviations for the various levels of location of information by size of company are outlined in Table 32. Because location category 2--Management Discussion and Analysis has zero-value cells it has been eliminated from the analysis.

A MANOVA was performed and the results indicate that location of information does differ by size of company. Therefore, I have to reject the null form of RQ_{14} . I conclude that, based on the size of a company, there has been a statistically significant ($p \leq .05$) difference in the location of environmental disclosure presented in annual reports. It was found that location of information differs for the following category and size of company:

- 3--Letter to Shareholders:

Large company use is > Small company; and

Large company use is > Medium company.

Table 32
Location of Information by Size of Company
 Mean aggregate number of sentences
 (Standard deviation)

	Small Companies <= \$10 mill.	Medium Companies > \$10 mill. and < \$100 mill	Large Companies >= \$100 mill.
(1) Financial Statements	1.231 (3.244)	1.333 (2.693)	7.481 (10.393)
(2) Mgmt. Disc. and Analysis	.000 (.000)	4.352 (12.443)	10.486 (14.745)
(3) Letter to Shareholders	.308 (.630)	2.565 (3.418)	20.981 (20.299)
(4) Corporate Overview	.308 (.855)	1.481 (2.042)	88.190 (166.017)
Total Mean # of Sentences	1.846	9.731	127.139

4.8.5 Tense of information by size of company

The means and standard deviations for the various levels of tense of information by size of company are outlined in Table 33. Because tense of information category 3--Future has a zero-value cell it has been eliminated from the analysis.

A MANOVA was performed and the results indicate that tense of information differs by size of company. Thus, I have to reject the null form of RQ_{15} . I conclude that, based on size of company, there has been a statistically significant ($p \leq .05$) difference in the tense of information presented in environmental disclosure in annual reports. Tense of information for the following category and size of company:

- 1--Past Tense:

Large company use is > Small company.

Table 33

Tense of Information by Size of Company

Mean aggregate number of sentences

(Standard deviation)

	Small Companies \leq \$10 mill.	Medium Companies > \$10 mill. and < \$100 mill.	Large Companies \geq \$100 mill.
(1) Past	.846 (1.676)	3.583 (4.528)	47.954 (65.227)
(2) Present	1.000 (1.683)	5.620 (11.757)	63.366 (106.960)
(3) Future	.000 (.000)	.528 (1.253)	15.819 (21.688)
Total Mean # of Sentences	1.846	9.731	127.139

4.8.6 Effect of size of company on disclosure

The various analyses undertaken indicate that the extent of environmental disclosure differs by size of company. This finding is consistent with research done by Buzby, (1975); Cowen, Ferreri and Parker, (1987); Lev and Penman, (1990); Singhvi and Desai, (1971); Thompson, Olsen and Dietrich, (1987); and Trotman and Bradley, (1981).

In addition to examining whether or not there are differences in disclosure, this thesis examines the categories in which the increase in disclosure is evident. Under the categories of subject matter, information type, location of information and tense of information I established that this difference in disclosure appears in only some of the categories. Table 34 summarizes which categories reflect differences in environmental disclosure.

Table 34
Significant Differences due to Size of Company

(* = significant at $p \leq .05$)

	Large > Medium	Large > Small
LOCATION Letter to S/H	*	*
TENSE Past		*

Section 4.9 RESULTS - INDEPENDENT VARIABLE -
PROFITABILITY

4.9.1 Quantity of disclosure by profitability

The variable Profitability was based on return on total assets (ROA), (i.e., net income or loss divided by total assets), on a basis relative to the other selected companies in the same industry. Low profitability companies were those that had an ROA less than the industry mean. High profitability companies were those that had an ROA greater than or equal to the industry mean. This classification scheme resulted in a 2 cell design with 11 companies being classified as low profitability companies and 29 companies being classified as high profitability companies. (Note that if a company changed profitability categories over the five years, it was classified based on the most frequently occurring profitability level.) The means and standard deviations are presented in Table 35.

Table 35
Quantity by Profitability
 Mean aggregate number of sentences
 (Standard deviation)

	ROA < Industry Mean	ROA >= Industry Mean
Sentence Count	43.455 (79.715)	66.279 (158.336)

An ANOVA was performed and the results indicate that the differences are not statistically significant. In other words, the quantity of disclosure does not differ between the two levels of profitability. Therefore, I can not reject the null form of H_0 . I conclude that, based on the profitability of a company, there is no difference in the quantity of environmental disclosure presented in annual reports.

4.9.2 Subject matter by profitability

The means and standard deviations for the various levels of subject matter by profitability of company are outlined in Table 36. No zero-value cells were identified and therefore, no variables were deleted from the analysis.

Table 36
Subject Matter by Profitability
 Mean aggregate number of sentences
 (Standard deviation)

	ROA < Industry Mean	ROA >= Industry Mean
(1) Product	12.727 (23.298)	19.224 (50.448)
(2) By-product	.273 (.647)	2.333 (6.541)
(3) Pollution Control	5.182 (11.712)	5.934 (14.706)
(4) Conservation	4.545 (10.004)	11.586 (31.110)
(5) Site Restoration	.818 (1.662)	2.759 (6.133)
(6) External Demands	8.545 (19.039)	13.655 (33.337)
(7) Policy	5.273 (10.364)	2.144 (5.945)
(8) Management Systems	6.091 (11.691)	8.644 (19.444)
Total Mean # of Sentences	43.455	66.279

A MANOVA was performed and the results indicate that subject matter does not differ by profitability of a company. Therefore, I can not reject the null form of RQ_{17} . I conclude that, based on the profitability of a company, there has been no difference in the type of subject matter presented in environmental disclosure in annual reports.

4.9.3 Information type by profitability

The means and standard deviations for the various levels of information type by profitability of company are outlined in Table 37. Because information type category 4--Risk Management-Quantified has a zero-value cell, it has been eliminated from the analysis.

A MANOVA was performed and the results indicate that information type does not differ by profitability. Therefore, I can not reject the null form of RQ_{18} . I conclude that, based on the profitability of a company, there has been no difference in the type of information presented in environmental disclosure in annual reports.

Table 37

Information Type by Profitability

Mean aggregate number of sentences/(Standard deviation)

	ROA < Industry Mean	ROA >= Industry Mean
(1) Dollars	3.636 (9.146)	6.647 (13.433)
(2) Financial Impact	2.727 (5.515)	5.362 (9.591)
(3) Risk Mgmt. - General	1.636 (3.668)	2.644 (5.682)
(4) Risk Mgmt. - Quant.	.000 (.000)	.552 (2.097)
(5) Risk Mgmt. - Comp.	.455 (.820)	1.744 (3.746)
(6) Acts- Quantified	1.455 (3.616)	3.664 (9.992)
(7) Acts- General	17.545 (32.642)	30.184 (77.724)
(8) Laws and Regn.	3.273 (6.857)	4.638 (8.906)
(9) General	10.818 (20.410)	5.822 (15.283)
(10) Non- Specific	1.909 (4.527)	5.023 (19.992)
Total Mean # of Sentence	43.455	66.279

4.9.4 Location of information by profitability

The means and standard deviations for the various levels of location of information by profitability of company are outlined in Table 38. No zero-value cells were identified and therefore, no variables were deleted from the analysis.

A MANOVA was performed and the results indicate that location of information does not differ by profitability. Therefore, I can not reject the null form of RQ_{19} . I conclude that, based on the profitability of a company, there has been no difference in the location of environmental disclosure presented in annual reports.

Table 38
Location of Information by Profitability
 Mean aggregate number of sentences
 (Standard deviation)

	ROA < Industry Mean	ROA >= Industry Mean
(1) Financial Statements	1.818 (4.622)	4.920 (8.685)
(2) Mgmt. Disc. and Analysis	2.818 (6.911)	6.790 (13.604)
(3) Letter to Shareholders	9.273 (16.626)	10.440 (17.130)
(4) Corporate Overview	29.545 (61.169)	44.129 (134.312)
Total Mean # of Sentences	43.455	66.279

4.9.5 Tense of information by profitability

The means and standard deviations for the various levels of tense of information by profitability of company are outlined in Table 39. No zero-value cells were identified and therefore, no variables were deleted from the analysis.

A MANOVA was performed and the results indicate that information type does not differ by profitability.

Therefore, I can not reject the null form of RQ_{20} . I conclude that, based on the profitability of a company, there has been no difference in the tense of information presented in environmental disclosure in annual reports.

Table 39
Information Tense by Profitability
 Mean aggregate number of sentences
 (Standard deviation)

	ROA < Industry Mean	ROA >= Industry Mean
(1) Past	14.273 (27.291)	25.842 (55.093)
(2) Present	20.818 (40.836)	33.626 (87.416)
(3) Future	8.364 (14.773)	6.810 (17.133)
Total Mean # of Sentences	43.455	66.279

4.9.6 Effect of profitability on disclosure

The various analyses undertaken indicate that environmental disclosure does not differ by profitability of company. The literature has had very mixed interpretation of this variable. There are different definitions of the variable and in some cases the variable has been treated as independent while in other cases it has been treated as dependent.

The findings of this research are consistent with the work done by Cowen, Ferreri and Parker (1987); Freedman and Jaggi (1986); and Ingram (1978). This research therefore strengthens one side of the debate about the effect of profitability and provides evidence to support those that conclude that profitability has no effect on disclosure.

Section 4.10 EVALUATION OF DISCLOSURE

The environmental disclosure examined in this thesis has been analyzed in detail to evaluate how time, industry, size of company and profitability of company influence the subject matter, information type, location of information and tense of information of environmental disclosure. However, it is important to evaluate the disclosure on a broader basis.

Thus, the disclosure is evaluated using the three dichotomies derived from Lev (1992):

- accounting versus non-accounting information;
- regulatory versus voluntary information; and
- retrospective versus prospective information.

Accounting versus non-accounting information

Type of information identifies accounting or non-accounting information. As outlined in Chapter Three, I believe that the first five categories under type of information identify accounting information while the last five categories identify non-accounting information. These categories are reviewed as follows:

(1) Accounting information:

- Dollars;
- Financial Impact;
- Risk Management-General;
- Risk Management-Quantified; and
- Risk Management-Compliance;

(2) Non-Accounting information:

- Acts/Processes-Quantified;
- Acts/Processes-General;
- Laws and Regulations;
- General; and
- Non-specific.

Regulatory versus voluntary information

This dichotomy has arbitrarily identified certain sections of the annual report (i.e., location of information) voluntary and certain sections regulatory as follows:

(1) Regulatory:

- Financial Statements; and
- Management Discussion and Analysis.

(2) Voluntary:

- Letter to Shareholders; and
- Corporate Overview.

There is no question that regulatory sections of the annual report include choices within GAAP or information that is above and beyond the bare minimum required. Thus using such a broad brush stroke as section of the annual report to differentiate regulatory versus voluntary information is crude at best.

However, there are some important considerations regarding the credibility of information that combine with this arbitrary categorization to provide a more sophisticated analysis of the nature of the information. In descending order, the Financial Statements are the most credible section of the annual report because they are audited by an external, independent accountant. Next, the Management

Discussion and Analysis section of the report is reviewed, on a test basis, by the OSC to ensure that required information is present. Presumably, the OSC could take punitive action if it was felt that the Management Discussion and Analysis section did not meet minimum requirements. Next, the Letter to Shareholders retains some degree of credibility because it has the signature of the CEO and/or president of the company. Therefore, the CEO or president must be willing to accept the message contained therein. Finally, the Corporate Overview, or remainder of the annual report, retains a small amount of credibility because it is reviewed by the external auditor.

Thus, regulatory information represents more credible information than voluntary information.

Retrospective or prospective information

No value judgments are passed on retrospective and prospective information which comprise tense of information as follows:

- (1) Retrospective:
 - Past tense; and
 - Present tense;
- (2) Prospective:
 - Future tense.

These two types provide different information for different purposes. Retrospective information is used for ex post, stewardship reporting. Prospective information is used for ex ante, decision making purposes. The value of the information lies with the needs of the user.

Tables 40, 41, 42 and 43 summarize these three information dichotomies according to time, industry, size of company and profitability, respectively.

Table 40

Sentence Count by Information Dichotomies over Time

Number of Sentences

(Percentage of total)

	1969	1979	1989	1990	1991	Total
ACCOUNTING	16 (16.5)	32 (30.2)	94 (22.6)	135 (22.5)	225 (29.3)	502 (25.2)
NON-ACCOUNTING	81 (83.5)	74 (69.8)	322 (77.4)	466 (77.5)	544 (70.7)	1487 (74.8)
Total	97	106	416	601	769	1989
REGULATORY	1 (1.0)	14 (13.2)	44 (10.6)	95 (15.8)	184 (23.9)	338 (17.0)
VOLUNTARY	96 (99.0)	92 (86.8)	372 (89.4)	506 (84.2)	585 (76.1)	1651 (83.0)
Total	97	106	416	601	769	1989
RETRO-SPECTIVE	88 (90.7)	87 (82.1)	355 (85.3)	530 (88.2)	679 (88.3)	1739 (87.4)
PRO-SPECTIVE	9 (9.3)	19 (17.9)	61 (14.7)	71 (11.8)	90 (11.7)	250 (12.6)
Total	97	106	416	601	769	1989

This study found 1989 sentences containing environmental information amongst 183 annual reports. The total column in Table 40 and each of the other three tables indicates that one quarter of all the sentences analyzed contained accounting information, leaving three-quarters containing non-accounting information. These tables also indicate that seventeen percent of the sentences analyzed were located in the regulatory sections of the annual report. Therefore, it becomes evident that more accounting information was produced than regulatory information (25.2 % versus 17.0 %). Even if all the regulatory information is accounting information (which it is not, per review of the data coding sheets) it is safe to conclude that a substantial part of the accounting information provided on environmental disclosure is voluntary in nature.

The tables also indicate that far more retrospective information is provided than prospective information (87.4% versus 12.6%). Hence environmental disclosure is provided more for stewardship evaluation than prospective decision making purposes. Given the extent of voluntary disclosure (83.0%), it would appear that even in the non-regulated components of disclosure firms are taking a conservative approach to revealing future plans with regard to environmental management.

Table 40 illustrates the trend over time for these three information dichotomies. Fluctuations within these dichotomies over the years is minimal. Thus, it would seem that disclosure practices are relatively consistent over time. There is a possibility that over time, there is a greater emphasis on regulatory information. However, the trend is not consistent and the increases are not substantial.

Table 41
Sentence Count by Information Dichotomies by Industry
 Number of Sentences
 (Percentage of total)

	Invest. Mgmt.	Mining	Oil and Gas	Pulp and Paper	Total
ACCOUNTING	2 (50.0)	81 (48.5)	41 (48.2)	378 (21.8)	502 (25.2)
NON- ACCOUNTING	2 (50.0)	86 (51.5)	44 (51.8)	1355 (78.2)	1487 (74.8)
Total	4	167	85	1733	1989
REGULATORY	2 (50.0)	59 (35.3)	48 (56.5)	229 (13.2)	338 (17.0)
VOLUNTARY	2 (50.0)	108 (64.7)	37 (43.5)	1504 (86.8)	1651 (83.0)
Total	4	167	85	1733	1989
RETRO- SPECTIVE	1 (25.0)	147 (88.0)	79 (92.9)	1512 (87.2)	1739 (87.4)
PRO- SPECTIVE	3 (75.0)	20 (12.0)	6 (7.1)	221 (12.8)	250 (12.6)
Total	4	167	85	1733	1989

Table 41 illustrates disclosure by industry for these three information dichotomies. It is interesting to note that the pulp and paper industry discloses significantly less accounting information, as a percentage of its total disclosure, than each of the other three industries (21.8% versus half). It could be that this is due to the fact that they provide significantly more environmental disclosure than the other industries. Presumably the pulp and paper industry provides the level of environmental disclosure it does because it feels a need to communicate with various stakeholders. It could be argued then that if the industry wanted to improve its communication then it should provide a relatively greater extent of accounting information (i.e., information useful for decision making purposes).

Of the four industries, the pulp and paper industry also produces the least amount of regulatory information as a percentage of total information provided. Again, because regulatory information is more credible, it could be argued that if the industry wanted to improve its communication, then it should provide a relatively greater extent of information in the regulatory components of the annual report in order to enhance credibility.

The use of retrospective versus prospective information is consistent amongst the resource based industries.

Table 42

Sentence Count by Information Dichotomies by Size of Company

Number of Sentences

(Percentage of total)

	Small <= \$10 mill.	Medium > \$10 mill. < \$100 mill.	Large >= \$100 mill.	Total
ACCOUNTING	5 (26.3)	34 (23.1)	463 (25.4)	502 (25.2)
NON-ACCOUNTING	14 (73.7)	113 (76.9)	1360 (74.6)	1487 (74.8)
Total	19	147	1823	1989
REGULATORY	16 (84.2)	39 (26.5)	283 (15.5)	338 (17.0)
VOLUNTARY	3 (15.8)	108 (73.5)	1540 (84.5)	1651 (83.0)
Total	19	147	1823	1989
RETRO-SPECTIVE	19 (100.0)	137 (93.2)	1583 (86.8)	1739 (87.4)
PRO-SPECTIVE	0 (0.0)	10 (6.8)	240 (13.2)	250 (12.6)
Total	19	147	1823	1989

Table 42 illustrates that the percentage of accounting information versus non-accounting information is similar across size of company. However, there are a few differences in disclosure practices with regard to the percentage of regulatory disclosure and retrospective disclosure. As a percentage of total disclosure, medium companies produce more regulatory disclosure than large companies (26.5 % versus 15.5 %) and small companies produce

more regulatory disclosure than medium companies (84.2 % versus 26.5%). This might be explained by the fact that disclosure costs are proportionately higher for smaller companies and therefore, they are reluctant to disclose more information than that which is required. Also, smaller companies are less visible in the Watts and Zimmerman (1978) sense and therefore do not feel as compelled to produce voluntary information.

It appears that the extent of retrospective information increases as the size of the company decreases. However, the change in percentages involved is not nearly as dramatic as in the case of regulatory versus voluntary disclosure.

Table 43

Sentence Count by Information Dichotomies by Profitability

Number of Sentences

(Percentage of total)

	ROA < Industry Mean	ROA >= Industry Mean	Total
ACCOUNTING	131 (20.3)	371 (27.6)	502 (25.2)
NON- ACCOUNTING	515 (79.7)	972 (72.4)	1487 (74.8)
Total	646	1343	1989
REGULATORY	85 (13.2)	253 (18.8)	338 (17.0)
VOLUNTARY	561 (86.8)	1090 (81.2)	1651 (83.0)
Total	646	1343	1989
RETRO- SPECTIVE	563 (87.2)	1176 (87.6)	1739 (87.4)
PRO- SPECTIVE	83 (12.8)	167 (12.4)	250 (12.6)
Total	646	1343	1989

Table 43 illustrates that there is little difference in disclosure practices according to the profitability of a company. This is consistent with the findings from the more detailed statistical analysis presented earlier.

Section 4.11 SUMMARY

This chapter focused on the environmental disclosure found in the selected sample of annual reports. The research questions under study were reviewed and the data collection and content analysis coding were discussed. After a brief overview of the annual reports in the context of the four industries, the results of the statistical analyses were presented according to the independent variables: Time, Industry, Size of company and Profitability. Finally, the disclosure was examined using three information dichotomies: accounting versus non-accounting information; regulatory versus voluntary information; and retrospective versus prospective information.

The sample was randomly selected and therefore, the results should be generalizable to the population in question. However, it should be noted that the population is defined as companies that were incorporated prior to 1969 and were publicly traded from 1969 onwards. Once companies are considered outside this time frame (i.e., outside the five years in question, 1969, 1979, 1989, 1990 and 1991), or outside the industries selected, generalizability may break down. As well, the inability to obtain a complete sample for the years 1969 and 1979 may have affected the results.

Nevertheless given these caveats and with regard to the specific sample under study, it would appear that the following general conclusions can be made about the effect of the independent variables:

- (1) Time has a significant effect on both the quantity of environmental disclosure provided and on the nature of environmental disclosure provided. It was found that the quantity of disclosure differed between the following years: 1991 was greater than 1969; 1991 was greater than 1979; 1990 was greater than 1969; and 1990 was greater than 1979. The nature of disclosure also changed over time for certain pairs of years in certain categories under all four dependent variables: Subject Matter, Information Type, Location of information and Tense of information. (Time was defined as the years 1969, 1979, 1989, 1990 and 1991.)

- (2) Industry has a significant effect on both the quantity of environmental disclosure provided and on the nature of environmental disclosure provided. It was found that the quantity of disclosure provided by the pulp and paper industry was greater than each of the other three industries. The nature of disclosure also differed by industry in certain categories under all four dependent variables: Subject Matter, Information

Type, Location of information and Tense of information.
(Industry was defined as three resource based industries - mining, oil and gas, and pulp and paper - and one non-resource based company - investment management.)

It should be noted that Industry was the independent variable that explained the most differences in disclosure practices.

- (3) Size of company has a significant effect on both the quantity of environmental disclosure provided and on the nature of environmental disclosure provided. It was found that the quantity of disclosure provided by large companies was greater than small companies. The nature of disclosure also differed by size of company in certain categories under the dependent variables: Location of information and Tense of information.
(Size of company was defined as follows: small being \leq \$10 million in total assets; medium being $>$ \$10 million and $<$ \$100 million in assets; and large being \geq \$100 million in assets.)
- (4) Profitability has no significant effect on the quantity of environmental disclosure provided or on the nature of environmental disclosure provided. (Profitability

was defined as being more or less profitable than the mean return on total assets of the companies selected in that industry.)

By examining the environmental disclosure using three information dichotomies it was possible to derive the following conclusions:

- (1) Use of these dichotomies is relatively consistent over time.
- (2) As a percentage of its total disclosure, the pulp and paper industry produces a significantly lower percentage of both accounting and regulatory disclosure.
- (3) As company size decreases the proportion of regulatory disclosure increases.
- (4) Company profitability has no effect on disclosure practices for any of the three information dichotomies.

CHAPTER FIVE

RESULTS OF EXAMINING ENVIRONMENTAL REPORTS

Section 5.1 INTRODUCTION

This chapter describes the stage of this research which was designed to examine environmental reports. Section 5.2 outlines the research questions that were posed. Section 5.3 describes the collection of data. Section 5.4 describes the single environmental report that was found. A brief summary is offered in Section 5.5.

Section 5.2 RESEARCH QUESTIONS

This stage of the research was designed to examine the growing trend (per Deloitte Touche Tohmatsu International, 1993, for example) of stand-alone environmental reports.

The following questions were to be addressed:

- (6) What is the nature of the environmental reports which have become a communication vehicle in recent years?
- (7) How does the disclosure in environmental reports compare with the disclosure in annual reports?

RQ₂₁: There is no difference between annual reports and environmental reports with regard to the quantity of environmental disclosure.

- RQ₂₂: There is no difference between annual reports and environmental reports with regard to the type of subject matter presented in environmental disclosure.
- RQ₂₃: There is no difference between annual reports and environmental reports with regard to the type of information presented in environmental disclosure.
- RQ₂₄: There is no difference between annual reports and environmental reports with regard to the tense of information presented in environmental disclosure.

Section 5.3 DATA COLLECTION

The sample of environmental reports was to consist of all environmental reports produced by the 40 companies in the main sample for the five years under study. Environmental reports were sought from the various libraries as the data collection for annual reports was taking place.

As a result of the library search, no environmental reports were found. Therefore, all 40 companies were approached by phone to confirm whether or not a stand-alone environmental report had been produced for the years in question. Contact was made with a representative from all 40 companies.

Depending on the nature of the company, this representative ranged from an individual in the public relations/corporate communications department to the Manager, Investor Relations or the Vice-President, Environment. In a few cases, the

parent company or the parent of a parent company had produced environmental reports for the period under study (for example, the parent company of Brunswick Mining and Smelting and the parent company of Fletcher Challenge Canada). In one case, for Quebecor, a subsidiary had produced an environmental report. In another case, the company had not yet produced an environmental report but was in the midst of developing one. However, there was only one company in the main sample that had produced an environmental report. This report was produced for the first time in 1991.

Section 5.4 DESCRIPTION OF DATA

The single environmental report was produced by Canadian Pacific Forest Products Limited for 1991. (Because this company was included in the interview stage of this research, it is possible to provide expanded comments on this document.)

This report is not readily identifiable as an environmental report. Rather, it takes the form of a 4 page bulletin which is part of a bulletin serial, "Environmentally Speaking". This bulletin serial is produced by the company and distributed to the general public five or six times a

year. This was the first environmental report for the company.

The newsletter vehicle was chosen because there was some resistance by some of the corporate management groups to such a publication. Concerns were expressed as to how such a report would be received in the marketplace. It was felt that if such information was provided that the public would just want more. Also, there was some concern that the information in the report would not reveal a perfect record.

Nevertheless, the Vice-President, Environment and the Vice-President, Communications and Governmental Affairs felt that the report was necessary and were able to produce it because they had the support of the President.

The company received positive feedback on the first environmental report which meant that there was support to produce a full-scale 1992 report.

While the type of analysis that can be performed with one environmental report is limited, the content analysis coding of the report is set out below in comparison to the content analysis coding for the Canadian Pacific Forest Products annual report for the same year. The number of environmental disclosure sentences coded in the annual report is 69

for a 54 page document. The number of sentences coded in the environmental report is 56 for a four page document. Thus, the annual report has 23% more environmental disclosure sentences than the environmental report.

5.4.1 Subject matter

As presented in Table 44, the most significant differences in disclosure between the annual report and the environmental report appear to lie in the discussion of product and by-products. The annual report is more focused on the product whereas the environmental report is more focused on by-products.

Table 44
Subject Matter in
Annual Report versus Environmental Report For
Canadian Pacific Forest Products Limited - 1991
Number of sentences

	Annual Report	Environmental Report
(1) Product	33	15
(2) By-product	4	20
(3) Pollution Control	6	6
(4) Conservation	9	3
(5) Site Restoration	0	0
(6) External Demands	9	2
(7) Policy	3	4
(8) Management Systems	5	6
Total # of Sentences	69	56

5.4.2 Information type

As presented in Table 45, the type of information presented in the annual report differs from the information presented in the environmental report. The annual report places more

emphasis on dollars, financial impact and description of general acts. The environmental report places more emphasis on all three categories of risk management.

Table 45
Information Type in
Annual Report versus Environmental Report For
Canadian Pacific Forest Products Limited - 1991
Number of sentences

	Annual Report	Environmental Report
(1) Dollars	10	2
(2) Financial Impact	8	0
(3) Risk Mgmt. - General	6	10
(4) Risk Mgmt. - Quant.	0	5
(5) Risk Mgmt. - Comp.	2	12
(6) Acts-Quantified	5	2
(7) Acts-General	33	9
(8) Laws and Regn.	1	7
(9) General	3	9
(10) Non-Specific	1	0
Total # of Sentences	69	56

5.4.3 Tense of information

As presented in Table 46, there appears to be little difference in the tense used between the two documents.

Table 46
Information Tense in
Annual Report versus Environmental Report For
Canadian Pacific Forest Products Limited - 1991
Number of sentences

	Annual Report	Environmental Report
(1) Past	25	21
(2) Present	34	27
(3) Future	10	8
Total # of Sentences	69	56

Section 5.5 SUMMARY

This chapter discussed the results of examining the environmental reports produced by the companies in the main sample for the years under study. As it turned out, there

was only one environmental report that met the sample criteria. A brief description of the genesis of this report was offered and the content of this report was compared with the annual report for the same year.

As noted, there were some concerns at Canadian Pacific Forest Products as to how the marketplace would react to such a document. It took the support of the president to ensure that the environmental report was produced. Once the first report was successful there was support to produce a full-scale 1992 report.

CHAPTER SIX

RESULTS OF EXAMINING ADDITIONAL DISCLOSURE

Section 6.1 INTRODUCTION

This chapter examines the additional environmental disclosure provided by a sub-sample of eight companies for the year 1991. Section 6.2 reviews the research questions to be addressed by this stage of the research. Section 6.3 describes the data collection process. Section 6.4 provides a description of the data collected. Section 6.5 contains the statistical analysis of the quantity and nature of the disclosure. Section 6.6 concludes the chapter with a summary.

Section 6.2 RESEARCH QUESTIONS

This chapter addresses the following research questions (stated in the null form).

- (8) In 1991, (for the sub-sample), what was the nature of the sum total of additional environmental disclosure issued by the corporation?
- (9) For the 1991 sub-sample, how does environmental disclosure outside the annual report compare with the disclosure in the annual report?

- RQ₂₅: There is no difference between annual reports and other additional disclosure with regard to the quantity of environmental disclosure.
- RQ₂₆: There is no difference between annual reports and other additional disclosure with regard to the type of subject matter presented in environmental disclosure.
- RQ₂₇: There is no difference between annual reports and other additional disclosure with regard to the type of information presented in environmental disclosure.
- RQ₂₈: There is no difference between annual reports and other additional disclosure with regard to the tense of information presented in environmental disclosure.

Section 6.3 DATA COLLECTION

A sub-sample of eight companies was developed by selecting two companies from each of the four industries under study. The sample was chosen on a purposive rather than random basis. Because statistical techniques and generalizability are limited with such a small sample, companies were chosen on the basis of their size and the extent of the environmental disclosure that was found during the first two stages of the research (annual reports and environmental reports).

Companies were chosen on their willingness to participate in the interview process as outlined in Chapter Seven. Thus, the sub-sample is consistent for both the additional disclosure and interview stages of the research. Table 55

in Chapter Seven provides more information about the companies selected for the sub-sample. Chapter Seven also explains that four of the companies in the sub-sample granted permission to be identified.

Data was obtained through three sources: (1) filings from the Ontario Securities Commission (OSC) (available from Micromedia's CanCorp Canadian Corporate Documents Service); (2) the Canadian Business and Current Affairs (CBCA) CD-Rom which indexes a wide range of periodicals and newspapers (over 500) including The Globe and Mail and The Financial Post; and (3) other disclosure material provided directly by the company.

Table 47 outlines the extent of environmental disclosure collected and coded from the OSC filings.

Table 47

Environmental Disclosure Collected from the OSC Filings

Company I=Invest. Mgmt. M=Mining O=Oil & Gas P=Pulp & Paper	# of Fiche Listed	# of Fiche with Environ- mental Disclosure	Total # of Sentences Coded
I - Company A	25	1	1
I - Company B	13	0	0
M - Company A	16	4	7
M - Bruns. M & S	14	2	54
O - Prairie Oil	22	4	18
O - Scurry-R.	21	7	33
P - Cdn. Pacific	30	15	154
P - Company A	30	11	113

Table 48 outlines the extent of disclosure collected and coded from the CBCA CD-Rom source. Based on the number of sentences coded, it becomes apparent that companies are providing environmental disclosure in regulatory disclosure documents outside the annual report.

Table 48

Environmental Disclosure Collected from the CBCA CD-Rom

Company I=Invest. Mgmt. M=Mining O=Oil & Gas P=Pulp & Paper	# of Items Listed in CBCA	# of Items from Company	# of Items with Env. Disclo- sure	Total # of Sen- tences Coded
I - Company E	1	0	0	0
I - Company G	22	6	0	0
M - Company F	3	3	0	0
M - Bruns. M & S	26	16	0	0
O - Prairie Oil	1	1	0	0
O - Scurry-R.	2	1	0	0
P - Cdn. Pacific	101	41	11	74
P - Company B	117	64	18	71

Only the two pulp and paper companies in the sample, provided voluntary disclosure with environmental content (indexed by the CBCA database).

Canadian Pacific Forest Products Limited was the only company to provide additional disclosure. This disclosure took the form of five issues of the company's bulletin "Environmentally Speaking" which were published during 1991 as voluntary disclosure available to the general public. A total of 190 sentences were coded over the five issues.

The other types of additional disclosure were so limited (and usually unavailable from the company) that they were not analyzed by means of content analysis.

Section 6.4 DESCRIPTION OF DATA

The following tables outline the results of content analysis coding in order to provide an indication of the quantity and nature of environmental disclosure provided by Canadian Pacific Forest Products Limited, the only company to provide disclosure in all five media. Six of the other seven companies had environmental disclosure in their annual report and OSC filings only. The seventh company, Pulp and Paper Company A in the pulp and paper industry had environmental disclosure in their annual report, OSC filings and in periodicals and newspapers indexed by the CBCA CD-Rom.

Table 49 provides a comparison of the subject matter found in the five different media.

Table 49
Subject Matter in
Environmental Disclosure Produced by
Canadian Pacific Forest Products Limited - 1991
Number of sentences
(as a percentage of total)

	Annual Report	Environmental Report	OSC Filings	CBCA Items	Bulletin Provided
(1) Product	33 (47.8)	15 (26.8)	71 (46.1)	41 (55.4)	21 (11.1)
(2) By-product	4 (5.8)	20 (35.7)	11 (7.1)	0 (0)	0 (0)
(3) Pollution Control	6 (8.7)	6 (10.7)	22 (14.3)	10 (13.5)	0 (0)
(4) Conservation	9 (13.0)	3 (5.4)	19 (12.3)	8 (10.8)	130 (68.4)
(5) Site Restoration	0 (0)	0 (0)	1 (.6)	0 (0)	0 (0)
(6) External Demands	9 (13.0)	2 (3.6)	19 (12.3)	7 (9.5)	30 (15.8)
(7) Policy	3 (4.3)	4 (7.1)	3 (1.9)	1 (1.4)	4 (2.1)
(8) Management Systems	5 (7.2)	6 (10.7)	8 (5.2)	7 (9.5)	5 (2.6)
Total # of Sentences	69	56	154	74	190

A review of the number of sentences provided as a percentage of total sentences in Table 49, reveals that there is strong consistency between the subject matter disclosed in the annual report, OSC filings and CBA items. The environmental report and the "Environmentally Speaking" bulletin appear to differ from these three media. The environmental report focuses less on the product and more on by-products (i.e., effluent and emissions). The "Environmentally Speaking" bulletins focus less on the products and by-products and far more on conservation.

Table 50 outlines the type of information found in the five media used by Canadian Pacific Forest Products Limited. The type of information provided differs somewhat from medium to medium. The "Environmentally Speaking" bulletins focus on general information and actions undertaken by the company. The environmental report seems to focus on risk management (all three types) and laws and regulations. The other three media are quite similar in the type of information they contain.

**Table 50 - Information Type in Environmental Disclosure
Produced by Canadian Pacific Forest Products Limited - 1991**

Number of sentences/(as percentage of total)

	Annual Report	Environmental Report	OSC Filings	CBCA Items	Bulletin Provided
(1) Dollars	10 (14.5)	2 (3.6)	12 (7.8)	12 (16.2)	1 (.5)
(2) Financial Impact	8 (11.6)	0 (0)	16 (10.4)	1 (1.4)	0 (0)
(3) Risk Mgmt. - General	6 (8.7)	10 (17.9)	6 (3.9)	1 (1.4)	0 (0)
(4) Risk Mgmt. - Quant.	0 (0)	5 (8.9)	9 (5.8)	0 (0)	0 (0)
(5) Risk Mgmt. - Comp.	2 (2.9)	12 (21.4)	5 (3.2)	1 (1.4)	0 (0)
(6) Acts- Quantified	5 (7.2)	2 (3.6)	11 (7.1)	8 (10.8)	25 (13.2)
(7) Acts- General	33 (47.8)	9 (16.1)	48 (31.2)	18 (24.3)	65 (34.2)
(8) Laws and Regn.	1 (1.4)	7 (12.5)	10 (6.5)	1 (1.4)	6 (3.2)
(9) General	3 (4.3)	9 (16.1)	34 (22.1)	22 (29.7)	78 (41.1)
(10) Non- Specific	1 (1.4)	0 (0)	3 (1.9)	10 (13.5)	15 (7.9)
Total # of Sentences	69	56	154	74	190

Table 51 demonstrates the tense of information used by Canadian Pacific Forest Products. It would appear that for the most part there is little difference between the documents in the tense or time-orientation of the disclosure. The only exception to this is the "Environmentally Speaking" bulletins which seem to contain very little future oriented information.

Table 51
Information Tense in
Environmental Disclosure Produced by
Canadian Pacific Forest Products Limited - 1991
Number of sentences
(as percentage of total)

	Annual Report	Environmental Report	OSC Filings	CBCA Items	Bulletin Provided
(1) Past	25 (36.2)	21 (37.5)	58 (37.7)	22 (29.7)	58 (30.5)
(2) Present	34 (49.3)	27 (48.2)	68 (44.2)	37 (50.0)	129 (67.9)
(3) Future	10 (14.5)	8 (14.3)	28 (18.2)	15 (20.3)	3 (1.6)
Total # of Sentences	69	56	154	74	190

The following Tables 52 to 54 provided the mean number of sentences for the eight companies in questions in their annual report and in their OSC filings. It is interesting to note that the two investment management companies had exactly the same levels of environmental disclosure in their annual report and their OSC Filings. One company had no sentences in either. The other company had one sentence in both, coded the same way in both.

According to Table 52, there does not appear to be a substantial difference in the type of subject matter presented in the two media. Except that, the OSC filings seem to focus on the product (and production methods) to a greater extent than the annual report.

According to Table 53, there does not appear to be a substantial difference in the type of information presented in the two media. Except that the OSC filings seem to focus more on general information.

According to Table 54, there does not appear to be a substantial difference in the tense of information presented in the two media.

Table 52
Subject Matter
Comparison of the Annual Report and OSC Filings
For Eight Companies in the Sub-Sample For 1991
Mean number of sentences
(as a percentage of average total)

	Annual Report	OSC Filings
(1) Product	6.13 (20.10)	16.13 (33.96)
(2) By-Product	2.25 (7.38)	3.50 (7.37)
(3) Pollution Control	1.50 (4.92)	3.75 (7.89)
(4) Conservation	2.75 (9.02)	5.63 (11.85)
(5) Site Restoration	5.00 (16.39)	4.75 (10.00)
(6) External Demands	6.75 (22.13)	8.00 (16.84)
(7) Policy	1.13 (3.70)	1.25 (2.63)
(8) Management Systems	5.00 (16.39)	4.50 (9.47)
Average Total # of Sentences	30.50	47.50

Table 53 - Information Type

Comparison of the Annual Report and OSC Filings

For Eight Companies in the Sub-Sample For 1991

Mean number of sentences/(as a percentage of average total)

	Annual Report	OSC Filings
(1) Dollars	4.75 (15.57)	5.75 (12.11)
(2) Financial Impact	4.25 (13.93)	6.88 (14.48)
(3) Risk Mgmt. - General	2.63 (8.62)	1.63 (3.43)
(4) Risk Mgmt. - Quant.	.38 (1.25)	1.38 (2.91)
(5) Risk Mgmt. - Comp.	1.25 (4.10)	1.13 (2.38)
(6) Acts- Quantified	1.00 (3.28)	2.88 (6.06)
(7) Acts- General	11.00 (36.07)	12.88 (27.12)
(8) Laws and Regn.	2.75 (9.02)	3.13 (6.59)
(9) General	1.88 (6.16)	9.63 (20.27)
(10) Non- Specific	.63 (2.07)	2.25 (4.74)
Average Total # of Sentences	30.50	47.50

Table 54
Information Tense
Comparison of the Annual Report and OSC Filings
For Eight Companies in the Sub-Sample For 1991
Mean number of sentences
(as a percentage of average total)

	Annual Report	OSC Filings
(1) Past	10.63 (34.85)	17.00 (35.79)
(2) Present	15.88 (52.07)	23.63 (49.75)
(3) Future	4.00 (13.11)	6.88 (14.48)
Average Total # of Sentences	30.50	47.50

Section 6.5 STATISTICAL ANALYSIS

Because of the size of the sub-sample, it is necessary to use non-parametric statistics (Siegel and Castellan, Jr., 1988) for any statistical analysis.

The first question that was addressed was RQ₂₅, which looks at the difference in quantity between the annual report and any additional disclosure. The nature of the data collected

reduces this question to a comparison between the disclosure in the annual report and the disclosure in the OSC filings. A Wilcoxon signed ranks test was performed and was found to be not significant.

Therefore, for the sub-sample under study, I conclude there was no difference in the quantity of environmental disclosure between the annual reports and the OSC filings.

A Friedman two-way analysis of variance by ranks test was used to address RQ₂₆, RQ₂₇ and RQ₂₈. This set of three questions examined the differences in subject matter, information type and tense between the annual report and OSC filings. Unfortunately, it was not possible to find a non-parametric test that would incorporate all levels of the dependent variable for both the annual report and the OSC filings in the same analysis. Therefore, the Friedman test was applied separately to each medium. This type of analysis may be justified because there was no statistical difference in the quantity of information contained in these two media and because a qualitative analysis of this data in the previous section revealed limited differences between the two sets of data.

Using all eight companies in the sub-sample, the Friedman test for differences in subject matter was found to be not

significant for both the annual report and the OSC filings. Therefore, I conclude that there is no difference in subject matter within each of these media.

Using all eight companies in the sub-sample, the Friedman test for differences in information type was found to be significant for the annual report at $p \leq .001$ and the OSC filings at $p \leq .001$. Multiple comparisons were performed between the dependent variables to identify which levels of Information Type differed.

For both the annual report and the OSC filings, it was not possible to identify any comparisons that were statistically significant. It is suspected that the Friedman test is not robust enough to handle the 10 levels of the dependent variable, Information Type.

Using all eight companies in the sub-sample, the Friedman test for differences in tense was found to be significant at the $p \leq .10$ level for annual reports and at the $p \leq .05$ level for OSC filings. Multiple comparisons were performed and for both media it was found that the amount of information provided in the present tense was significantly different from the information provided in the future tense.

Therefore, I conclude that the companies in the sub-sample are providing a greater amount of present-oriented information than future-oriented information in both the annual reports and the OSC filings.

Section 6.6 SUMMARY

This chapter examined the additional environmental disclosure provided by a sub-sample of eight companies for the year 1991. The section on data collection indicated that outside of the annual report, additional environmental disclosure is found primarily in the OSC filings mandated by securities regulations. Only two companies of the eight provided any additional environmental disclosure in periodicals or newspapers. And, only one company of the eight provided additional environmental disclosure through voluntary corporate documents.

The quantity and nature of environmental disclosure found in the OSC filings as compared to the annual report were analyzed qualitatively and statistically. It should be kept in mind that the sub-sample was not selected on a random basis. Therefore, it is not possible to make generalizations about the results.

It was found that there was no difference in the quantity of disclosure provided through the two media. And, there were few differences found between the nature of the disclosure provided through the two media.

As far as differences within each medium. It would appear that in both media the information is more present oriented than future oriented. The results of the statistical tests on possible differences in information type were not conclusive. No differences were found with regard to the use of subject matter.

CHAPTER SEVEN

RESULTS OF INTERVIEWS

Section 7.1 INTRODUCTION

This chapter examines the results of the interviews conducted with the eight companies in the sub-sample. Section 7.2 reviews the research questions under study. Section 7.3 describes the data collection process. Section 7.4 addresses research questions nine and ten by presenting an overview of the results of the interviews. Section 7.5 casts the results of the interviews in the Gibbins, Richardson and Waterhouse (1990) framework. A summary to the chapter is provided in Section 7.6.

Section 7.2 RESEARCH QUESTIONS

This chapter addresses the following research questions.

- (10) For the 1991 sub-sample, what is the management process in issuing environmental disclosure? Questions of who determines the disclosure and why disclosure choices were made will be explored here.

- (11) What role did the accounting function play in the management and release of environmental disclosure?

Section 7.3 DATA COLLECTION

As described in Chapter Six, the research was designed to ensure that the companies that comprised the interviewing sub-sample were the same companies that were used to examine additional disclosure provided beyond the annual report and environmental report. A sub-sample of eight companies was developed by selecting two companies from each of the four industries under study. The sample was chosen in a purposive manner based on the size of the company and the extent of the environmental disclosure that was found during the first two stages of the research (annual reports and environmental reports).

As described in Chapter Five, contact was made with each of the 40 companies in the main sample to determine whether or not the company had produced an environmental report for any of the years under study. Many of the individuals contacted during this stage held senior positions. In several cases these individuals expressed interest in the research and those that met the size and disclosure criteria for the sub-sample were tentatively requested to assist in the interview stage. In one case a company expressed interest in the research but was not asked to participate because it was apparent that English was not the working language of the company.

Other companies were identified to complete the sample of eight. Then, contact was made with the appropriate individual at all eight companies. The appropriate individuals varied from company to company and included: Controller, Corporate Secretary-Treasurer, Vice-President or Director of Environment, Vice-President or Manager of Community Affairs and Manager of Investor Relations. In the case of one large company, I was only able to speak with the Controller's secretary. I discussed the nature of my research with these contact individuals and indicated that I would like to interview the individuals responsible for environmental disclosure. (In the case of the non-resource based companies which had essentially no environmental disclosure, I indicated that I wanted to discuss disclosure practices in general.) I indicated that the interviews would require an hour to an hour and a half of each individual's time. More detailed information and a covering letter was sent to each contact. In all cases, the individuals agreed, on behalf of themselves and other involved individuals, to assist me.

Thus, the sub-sample consists of two companies chosen from each of the four industries. In all four industries, the companies chosen were the larger companies from the main sample.

Both of the oil and gas companies are managed by their parent company. Scurry-Rainbow has Home Oil Limited as a parent with 88.1% interest as of March 1992 and Prairie Oil Royalties has Norcen Energy Resources Limited as a parent with 74.4% interest as of March 1992. In fact, neither of the oil and gas companies have any employees. Therefore, the interviews essentially represent the practices and views of the parent companies.

The number of individuals interviewed ranged from one to three per company. The interviews lasted from 45 minutes in the case of one interview to over four hours in the case of two interviews. Over the eight companies a total of 17 individuals were interviewed. For the most part these individuals held the positions of the contact individuals listed above and were involved with investor relations, community affairs or held an environment position. The President was also interviewed at one of the companies.

In the case of one company, when I arrived to conduct the interview, I was directed to speak with the Assistant Controller rather than the Controller with whom I had made the appointment. The substitution posed no apparent problems given that the Assistant Controller was hired to manage the company's disclosure.

Interviews for seven of the eight companies were conducted in person. One company, located in Vancouver felt that I was foolish to travel "all the way to Vancouver" to interview two individuals. As a result, this interview was conducted by telephone with the two individuals using a single speaker phone.

Interviews were conducted using an open-ended questionnaire with 16 questions. Questions were asked in roughly the order shown. The order may have changed or slightly different phrasing may have been used depending on the flow of the interview.

The first four questions, listed below, may appear to be unrelated to the topic of disclosure. However, they served many purposes: (1) they served as background information on the environmental management systems of the company; (2) they were a good way to establish rapport with the informant; and most importantly, (3) they set the stage for determining what information the company may be collecting to be available for disclosure.

- (1) Do you have any environmental executives?
- (2) Do you have an environmental committee of the board of directors?
- (3) Do you have an environmental policy?
- (4) Do you use environmental audits?

Questions five through 11, listed below, dealt with the mechanics or management of the disclosure process in a variety of media. These questions used all 1991 disclosure as a basis for discussion. Discussion also considered disclosure practices in 1992 and 1993. Although environmental disclosure was the focus of the discussion, much was revealed during the interviews about disclosure practices in general.

- (5) What is the process for preparing and who is your audience for annual reports?
- (6) Do you have an environmental report? If so, what is the process for preparing it and who is your audience?
- (7) What is the process for preparing other Ontario Securities Commission filings?
- (8) What is the process for preparing information releases and who is your audience?
- (9) Have you contributed to trade journal articles? If so, what is the process for preparing such articles and who is your audience?
- (10) Do you have brochures, educational material or employee newsletters? If so, what is the process for preparing such documents and who is your audience?
- (11) Do you engage in advertising? If so, what is the process for preparing the advertising and who is your audience?

Questions 12 through 15, listed below, became more general and were directed at learning about the evolution and anticipated future of disclosure practices. Again, although environmental disclosure was the focus of the discussion,

much was revealed during the interviews about disclosure practices in general.

- (12) What changes have happened in these procedures?
- (13) What changes do you expect will happen in these procedures?
- (14) What do you expect will happen with environmental disclosure in your industry in the future?
- (15) Where do you stand on the disclosure of "bad" news?

Question 16, listed below, attempted to develop and understanding of the factors that influence the nature of a company's environmental disclosure.

- (16) What are the factors that have motivated your corporate environmental disclosure?

Interview notes were recorded during the interview and augmented immediately after the interview. To ensure the reliability of interview information, the interview comments were summarized on a company by company basis. The summaries, which ranged from four to eight pages, were then sent to the respective companies for verification. The contact individual at each company was asked to ensure that the summary was accurate and furthermore that any quotes noted in the summary were accurate.

Given that the topic under study is public disclosure and with a view to enhance the research credibility and useful-

ness, I asked each company if I could identify them when discussing and documenting my research. Four companies agreed to be identified: Canadian Pacific Forest Products, Prairie Oil Royalties, Scurry-Rainbow and Brunswick Mining and Smelting. Companies that preferred anonymity are to be referred to as Pulp and Paper Company A, Mining Company A, Investment Company A and Investment Company B, as the case may be.

All eight companies returned their summaries with only minor corrections. The summaries as approved, with requested corrections incorporated, can be seen in Appendix E.

Table 55 outlines the companies that were interviewed and their total assets to provide an indication of the size of the company. As well the extent of the largest shareholding in each company is shown.

Table 55
Selection of Sub-Sample

Industry	Company	Total Assets in 1991 (in millions)	Largest Block of Shares Held by Single Party (March 1992)
Investment Management	Company A	2,189.7	61.5%
Investment Management	Company B	284.7	34.9%
Mining	Company A	83.9	55.9%
Mining	Brunswick Mining and Smelting Corporation Limited	432.0	64.5%
Oil and Gas	Prairie Oil Royalties Company, Ltd.	134.2	74.4%
Oil and Gas	Scurry-Rainbow Oil Limited	388.9	88.1%
Pulp and Paper	Canadian Pacific Forest Products Limited	2,965.0	70.0%
Pulp and Paper	Company A	2,162.0	82.0%

Section 7.4 **INTERVIEW RESULTS**

Because this segment of the research does not lend itself to statistical analysis, a detailed breakdown of the interview

results on a question by question basis are offered. Prior to this detailed discussion, Table 56 offers an overview of where the questionnaire responses converge or diverge amongst the companies interviewed. (Note that questions one to four apply to resource based companies only.)

Table 56

Overview of Responses to Interview Questionnaire

QUESTION	RESPONSES CONVERGE	RESPONSES DIVERGE
(1) Environmental executives	*	
(2) Environmental committee		*
(3) Environmental policy	*	
(4) Environmental audits	*	
(5) Preparation of annual reports		*
(6) Preparation of environmental reports		*
(7) Preparation of other OSC filings		*
(8) Preparation of information releases		*
(9) Preparation of trade journal articles	*	
(10) Preparation of brochures, educational material, etc.		*
(11) Preparation of environmentally related advertising	*	
(12) What changes have happened	*	
(13) What changes will happen	*	
(14) Future of environmental disclosure in industry	*	
(15) Disclosure of bad news	*	
(16) Factors motivating environmental disclosure		*

Table 57 - Interview Question #1

DO YOU HAVE ANY ENVIRONMENTAL EXECUTIVES?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) At the Vice-President level	*	*						
b) At the Director level			*		*			
c) At the Manager level				*		*		
d) Not Applicable ¹							*	*

Although the individuals holding environment positions were found at various levels in the organization there were similarities in the intent of the position and the reporting relationships held by the position. The director at Brunswick Mining and Smelting reports directly to the President. The director at Prairie Oil Royalties reports to a non-operating Vice-President. The manager at Scurry-Rainbow reports to a non-operating Vice-President while the manager at Mining Company A reports to an operating Vice-President and the President. It would seem that the resource based companies that were interviewed have placed emphasis on establishing an environmental management

¹ The designation Not Applicable will be used to indicate questions that do not apply to the company in question. This will be the case for several questions for the investment management companies which have perceived minimal environmental impact. It will also be the case for companies that do not produce the disclosure in question.

position that is senior or relatively senior in the company and usually independent of operations.

Table 58 - Interview Question #2

DO YOU HAVE AN ENVIRONMENTAL COMMITTEE OF THE BOARD OF DIRECTORS?

	C P F P	P & P A	B M S	M I N A	P R A I	S C U R	I N V A	I N V A B
a) Yes	*					*		
b) No		*	*	*	*			
c) Not Applicable							*	*

In the case of Prairie Oil Royalties the Environmental Management Committee has access to the Board through the President. The three other resource based companies that do not have an environmental committee have opted to make the entire board responsible for environmental matters. Mining Company A has only eight board members and the Manager, Environmental Affairs reports to the entire board on a routine basis. In the case of Pulp and Paper Company A, the board made a conscious decision not to establish a separate environmental committee but rather make the entire board responsible for environmental matters. At Brunswick Mining and Smelting it was felt that a separate environmental committee of the board was not warranted. Given the extent

of the company's operations, the Director, Environment is able to provide a comprehensive quarterly report to the entire board. Thus, the entire board is advised of environmental matters and is responsible for environmental matters.

Table 59 - Interview Question #3

DO YOU HAVE AN ENVIRONMENTAL POLICY?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Company policy	*	*						
b) Parent company policy							*	
c) Company and parent company policy			*	*				
d) Industry assoc. policy only					*			
e) Not Applicable							*	*

It is general practice for the three resource based industry associations to ensure that all members adhere to an industry-wide environmental policy as a condition of membership in the industry association. In cases a), b) and c) each company is also adhering to an industry association environmental policy.

The three companies that developed their own policies felt that it was important for the company to develop its own

policy. For example, one of these companies, Brunswick Mining and Smelting, set out to establish its own policy in addition to the parent company policy in order to sensitize the outside directors to the environmental policy and ensure that they endorsed the policy.

Table 60 - Interview Question #4

DO YOU USE ENVIRONMENTAL AUDITS?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Yes	*	*	*	*	*	*		
b) Not Applicable							*	*

When did you begin performing environmental audits?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
1992	*							
1991		*				*		
1989				*	*			
mid 1980's			*					
Not Applicable							*	*

All six of the resource based companies interviewed used environmental auditing to one extent or another. Brunswick Mining and Smelting began environmental auditing in the mid-

1980's as a result of parent company (Noranda Minerals Inc.) environmental auditing activity. Mining Company A indicated that some environmental auditing had been done in the early 1980's but that the first formal environmental audit was performed in 1989.

In many cases, the engineering consulting firm A. D. Little was engaged to train employees for environmental auditing, to assist in the development of audit protocol and to act as audit team leaders, at least for the first round of environmental audits. Audits are typically conducted by company employees from sites independent of the site under audit. The frequency of environmental audits varies from company to company.

The information on environmental performance garnered during the environmental audit is one of the key sources (albeit summarized) for environmental disclosure.

Table 61 - Interview Question #5

WHAT IS THE PROCESS FOR PREPARING AND WHO IS YOUR AUDIENCE FOR ANNUAL REPORTS?

WHAT IS THE PROCESS?

(The Corporate Secretary classification covers a Controller-Secretary in one case and a Secretary-Treasurer in the other case. The classification for Community Affairs includes a Vice-President and a Director and a Manager.)

Who has responsibility for theme of annual report?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) President		*						
b) President and Community Affairs			*					
c) Community Affairs	*					*		
d) Manager, Investor Relations					*			
e) Assistant Controller							*	
f) Corporate Secretary				*				*

Who has responsibility for coordination of annual report?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Community Affairs	*		*			*		
b) Manager, Investor Relations		*			*			
c) Assistant Controller							*	
d) Corporate Secretary				*				*

Table 61 (Cont.)

Do you use external consultants?

	C P F P	P & P A	B M S	M I N A	P R A I	S C U R	I N V A	I N V B
a) For theme/design			*					
b) For writing							*	
c) For design and writing		*						
d) No	*			*	*	*		*

Who prepares Letter and Corporate Overview?

	C P F P	P & P A	B M S	M I N A	P R A I	S C U R	I N V A	I N V B
a) President and Division Managers			*					
b) President and Secretary-Treasurer								*
c) Community Affairs	*					*		
d) Manager, Investor Relations					*			
e) Assistant Controller							*	
f) Corporate Secretary				*				
g) External consultant		*						

Who prepares Financial Statements and Notes and MD&A?

	C P F P	P & P A	B M S	M I N A	P R A I	S C U R	I N V A	I N V B
a) President and Secretary-Treasurer								*
b) Controller			*					
c) Finance Dept.	*	*			*	*		
d) Asst. Controller and Finance Dept.								*
e) Corporate Secretary				*				

Table 61 (Cont.)

WHO IS YOUR AUDIENCE?

(This question had multiple responses for all but one company.)

	C P F P	P & P A	B M S	M I N A	P R A I	S C U R	I N V A	I N V B
a) Shareholders	*	*	*	*	*	*	*	*
b) Investors		*						
c) Financial community and analysts			*		*	*	*	
d) Employees	*	*					*	
e) Potential shareholders					*		*	
f) Potential investors		*		*				
g) Customers	*	*						
h) General public		*					*	
i) Regulators and government					*		*	
j) Academics					*		*	
k) Creditors, existing and potential							*	
l) Company's marketing dept.					*			
m) Potential investees							*	

The diversity in company practices is clearly evident in the above overview. While the Financial Statements and MD&A are prepared by those in an accounting function, the overall theme for the annual report and the Letter and the Review of Operations are prepared by a diverse group of individuals. Interestingly, at Brunswick Mining and Smelting, and at Pulp and Paper Company A the President had significant involvement in the annual report preparation process. It would appear that this is influenced by the President's personality and how the President views the nature of the annual report.

The President of Brunswick Mining and Smelting indicated that he spent a substantial amount of time working on the annual report because he feels that the annual report is an important document and an important exercise for internal discipline. He says that the exercise of preparing the annual report permits us to "take stock of what we are doing and where we are going."

There is also diversity in whom the companies perceive to be their audience. At one end of the spectrum, Investment Company B listed a single audience group - shareholders whereas Investment Company A listed nine audience groups.

There were some strong similarities between the disclosure practices of the companies. For all six resource based companies, environmental disclosure found in the annual report is the responsibility of the Vice-President or Director or Manager, Environment (as the case may be). (In only one of the six resource based companies, Scurry-Rainbow, was this individual a professional accountant.)

All eight companies engaged in several review cycles obtaining input through corporate executives. One informant from Investment Management Company A best expressed the common sentiment by saying that a good annual report is

produced as a result of significant review and involvement by several parties.

Table 62 - Interview Question #6

DO YOU HAVE AN ENVIRONMENTAL REPORT? IF SO, WHAT IS THE PROCESS FOR PREPARING IT?

	C P F P	P & P A	B M S	M I N A	P R A I	S C U R	I N V A	I N V A B
a) Yes	*							
b) No, but planning one		*						
c) No, parent company does one			*					
d) No				*	*	*		
e) Not Applicable							*	*

WHO IS YOUR AUDIENCE?

	C P F P	P & P A	B M S	M I N A	P R A I	S C U R	I N V A	I N V A B
a) Shareholders		*	*					
b) Employees	*	*	*					
c) Regulatory authorities	*	*						
d) Government/politicians	*	*						
e) Investment analysts		*						
f) Community associations/public	*	*						
g) Customers	*							
h) Competitors	*							
i) Not Applicable				*	*	*	*	*

As discussed in Chapter Five, Canadian Pacific Forest Products Limited, was the only company to have an environmental report in 1991. Pulp and Paper Company A is

planning one for 1993. Substantial information about Brunswick Mining and Smelting, is included in its parent company environmental report. In addition, Brunswick Mining and Smelting is contemplating doing a four or eight page environmental report which would be inserted in the parent company environmental report. Such a stand-alone insert would be included in all parent company environmental reports distributed by the company.

At the 1992 annual shareholders' meeting the President of Pulp and Paper Company A committed to producing an environmental report by Earth Day 1994. In early 1993 there had been management discussions about the need to produce an environmental report. At the same time the Taskforce on the Churches and Corporate Responsibility sent a letter to the company (as part of a mass mailing) encouraging the company to engage in environmental auditing and environmental reporting. The Vice-President, Environmental Affairs and others from the company met with Taskforce representatives and indicated that the company was planning to produce an environmental report but that the analysis was incomplete and the President had not yet made a decision in this regard.

Therefore representatives of the Taskforce, which holds shares in the company, indicated to the Vice-President,

Environmental Affairs that they would challenge the President on this issue at the Annual Meeting and that they hoped that it would not embarrass the President.

The President was apprised of the likely challenge. The Taskforce raised the question at the annual meeting and the President responded with his commitment.

Both oil and gas companies indicated that much of their communication with the general public is by way of door-to-door contact and community meetings in the areas surrounding their operational sites.

Thus, three of the companies interviewed have involvement to one degree or another with environmental reports. The process for each of these is discussed briefly.

Brunswick Mining and Smelting (BMS) has involvement with an environmental report through its parent company. The parent company, Noranda Minerals Inc. which has published an environmental report since 1990, will approach BMS for information for the environmental report or else use information obtained from BMS through the regular compliance reporting process. Once the parent company has prepared the environmental report, BMS has the opportunity to review the report and amend it if necessary.

Pulp and Paper Company A has designated the Manager, Community and Government Affairs as being responsible for the environmental report. (In this company it is the Manager, Investor Relations that has responsibility for coordinating the annual report.) In preparation for the first environmental report, the Manager Community and Government Affairs undertook a review of environmental reports produced by other companies in the pulp and paper industry. Also, there was a concern that the environmental report be consistent with the annual report. Therefore, the external consultant who assists with the preparation of the annual report will assist with the preparation of the environmental report.

Chapter Five provides some of the background behind the development of Canadian Pacific Forest Products Limited (CPFP) first environmental report in 1991. The second environmental report produced for 1992 results took the form of a full-scale report. The Vice-President, Communications and Governmental Affairs is responsible for both the annual report and the environmental report. However, the environmental report is developed with substantial input from the Vice-President, Environment.

The Vice-President, Environment wrote the first, (i.e., 1991) environmental report. An external consultant was

hired to write the 1992 environmental report. However, the report did not reflect the company's situation nor did it use appropriate terminology. Therefore, the Vice-President, Environment and his immediate subordinate wrote much of the second report. Again, review of other environmental reports in the industry was a factor in the planning process.

Table 63 - Interview Question #7

WHAT IS THE PROCESS FOR PREPARING OTHER ONTARIO SECURITIES COMMISSION FILINGS?

Who has responsibility for coordination of documents?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	P	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Finance and Community Affairs	*							
b) Manager, Investor Relations		*			*			
c) V-P, Law and Corporate Secretary						*		
d) Corporate Secretary				*				*
e) Controller			*					
f) Assistant Controller							*	

Even though these filings are statutory requirements, there is often voluntary information included such as management comments and overview of operations. Some companies, such as Brunswick Mining and Smelting will involve division managers in the preparation of OSC filings.

Any environmental information in the filings tends to be written by the individual holding the environment position. Environmental disclosure in the Annual Information Form (AIF) can be more expanded and technical than what is found in the annual report because of the statutory requirements of the AIF.

The audience for these documents is essentially limited to existing and prospective shareholders and the investment community. Over the eight companies it was found that while quarterly reports are sent to all shareholders as a matter of course, the AIF is usually available for shareholders only on request.

Table 64 - Interview Question #8

WHAT IS THE PROCESS FOR PREPARING INFORMATION RELEASES?

Who has responsibility for coordination of information releases?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Community Affairs	*		*			*		
b) Investor Relations					*			
c) Investor Rel. and Comm. Affairs		*						
d) Corporate Secretary				*				*
e) Internal Legal Counsel							*	

Information releases are usually issued to provide financial information (earnings announcements) and information on key operational activities. The OSC requires such material items to be disclosed to the public by way of information release. Every company interviewed except Brunswick Mining and Smelting indicated that they limited their information releases to those required by the OSC.

Brunswick Mining and Smelting specifically said that they provided voluntary information releases in addition to those material releases required by the OSC. As well, they sometimes develop two releases for a particular item. One may be aimed at the community (the province in which BMS operates) and the other may be aimed at the industry.

Table 65 - Interview Question #9

HAVE YOU CONTRIBUTED TO TRADE JOURNAL ARTICLES? IF SO, WHAT IS THE PROCESS FOR PREPARING SUCH ARTICLES?

Have you contributed to journals?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Company contributes to journal	*		*					
b) Limited or no involvement		*		*	*	*	*	*

Table 65 (Cont.)

Who has responsibility for preparing contributions?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Community Affairs	*							
b) Environment or Division Managers			*					
c) Not Applicable		*		*	*	*	*	*

Trade journals do not appear to be a key vehicle in corporate communication. The Vice-President, Communications and Governmental Affairs at Canadian Pacific Forest Products writes articles for submission to trade journals. Brunswick Mining and Smelting has been solicited by trade journals to provide articles. Because the solicitation is specific, whomever (Director, Environment or Division Managers) is closest to the issue will be responsible for preparing the article.

Table 66 - Interview Question #10

DO YOU HAVE BROCHURES, EDUCATIONAL MATERIAL OR EMPLOYEE NEWSLETTERS? IF SO, WHAT IS THE PROCESS FOR PREPARING SUCH DOCUMENTS?

Do you produce brochures (relating to environmental matters)?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Yes	*		*					
b) No		*		*	*	*	*	*

Do you produce educational material (relating to environmental matters)?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Yes			*					
b) No	*	*		*	*	*	*	*

Do you produce employee newsletters (discussing environmental matters)?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Yes	*	*	*					
b) No				*	*	*	*	*

The two companies that produced brochures were Canadian Pacific Forest Products (CPFP) and Brunswick Mining and Smelting (BMS). CPFP produces a bulletin titled "Environmentally Speaking" which is distributed to the general public four or five times a year. BMS produced a brochure to acquaint the community with the issues surrounding the re-opening of an operational site.

BMS is the only company that produces educational material, independently and with a degree of environmental content. These brochures are written at a grade six level and the environmental content varies from brochure to brochure.

Three companies produce employee newsletters. The CPFP newsletter is written by the corporation for employees and contains material from "Environmentally Speaking" bulletins. BMS used to have an employee newsletter for each of its three divisions, written by personnel in the respective divisions. In Fall 1993 the three newsletters were amalgamated into one newsletter. In Pulp and Paper Company A each business unit produces its own employee newsletter.

A few side issues were raised during the interviews. Brunswick Mining and Smelting indicated that written communication is not used for employee education purposes. Rather, this is accomplished through formal training

programs. Canadian Pacific Forest Products indicated that they would like to prepare more brochures and educational material. However, the money was not in the budget.

Table 67 - Interview Question #11

DO YOU ENGAGE IN ENVIRONMENTALLY-RELATED ADVERTISING? IF SO, WHAT IS THE PROCESS FOR PREPARING SUCH ADVERTISING?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Yes	*		*					
b) No		*		*	*	*	*	*

The two companies that advertise are BMS and CFPF. Advertising at BMS is limited to the local paper and would relate to such issues as the bird sanctuary created by the company, for example.

For CFPF environmentally-related advertising has been undertaken in the U.S. (the company's largest market) trade journals since the end of 1991. However, this advertising campaign has been managed by the marketing department. The Vice-President, Communications and Governmental Affairs was consulted beforehand. However, this is not standard process with all advertising campaigns.

Prairie Oil Royalties does not advertise. However, the industry association has advertised in an attempt to change public perception about the industry. The conclusion was that the advertising had no impact.

Table 68 - Interview Question #12

OVER THE LAST FEW YEARS, WHAT CHANGES HAVE HAPPENED IN YOUR DISCLOSURE PROCEDURES?

(This question had multiple responses.)

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Disclosure levels have increased			*			*		*
b) Site Restoration costs now req'd.			*		*	*		
c) More env. perform. info. in A/R			*			*		
d) Production of E/R	*		*					
e) Increase in regulatory req't.							*	*
f) Production of employee newsletter	*							
g) Production of env. news bulletin	*							
h) Change in corporate culture	*							
i) Changes depend on personalities		*						
j) Not much change				*				

A/R = Annual Report

E/R = Environmental Report

A few comments obtained during the interviews may help to expand on this summarization. An individual at CPFP indicated that there has been a change in the culture in the company and a realization of the need to "tell it like it is." The environmental performance of the company changed

in the 1980's but these changes were not being communicated outside the company.

Mining Company A indicated, "What we are doing in the annual report hasn't changed too much." Since 1986, the company has been disclosing site restoration costs in its Financial Statements. An individual at this company also offered the following comment: "People are more sensitive to it (disclosure) now because of OSC requirements which are forcing companies into disclosing more."

Table 69 - Interview Question #13

WHAT CHANGES DO YOU EXPECT WILL HAPPEN TO YOUR DISCLOSURE PROCEDURES?

(This question had multiple responses.)

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) No significant change likely	*		*	*		*	*	
b) 1st Env. Report to be produced		*						
c) Get middle mgrs. "buy in" to E/R	*							
d) More info. as EMS matures						*		
e) A few more press releases					*			
f) May be more disclosure							*	*

EMS = environmental management system

Although five of the companies indicated that there were no significant changes likely in the future, responses c) to f) indicate minor possible changes.

Scurry-Rainbow also indicated that if they went private (which they did) then their disclosure practices would change dramatically based on the lack of requirements to disclose.

Prairie Oil Royalties indicated that while the parent still held greater than 60% of the shares in the company, the ownership percentage had been reduced from earlier levels and thus more press releases may be a possible change.

One comment addresses what has been seen by some as the faddish aspect of the growing emphasis on environmental issues. The President of BMS feels that the company is in a business that impacts the environment and therefore the environment will always be an issue, but "the current emphasis on the environment is faddish. As time marches on the environment will lose its attraction." The environment is a key aspect of the business because the company can operate only with the consent of the public, but in future the environment will be on a level that is more consistent with other important aspects of operations. "We are not in the business of being environmental winners or environmental

purists but we can't afford not to do well in environmental matters." The potential business impact is simply too great.

The question of duplication between disclosure in the environmental report and the annual report was raised by Canadian Pacific Forest Products and Pulp and Paper Company A. Both indicated that their environmental report would be distributed with their annual report. Because of the extent of environmental performance information in the environmental report and the distribution method, they would include only minimal amounts of environmental performance information in the annual report.

Table 70 - Interview Question #14

WHAT DO YOU EXPECT WILL HAPPEN WITH ENVIRONMENTAL DISCLOSURE
IN YOUR INDUSTRY IN THE FUTURE?
(This question had multiple responses.)

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Possible need for extl. auditors			*					
b) Discl. should remain voluntary	*	*	*					
c) More co. should produce E/R	*							
d) E/Rs will become standard		*		*				
e) No comments						*	*	
f) Results of E/A to remain private						*	*	
g) More environmental disclosure				*				*
h) All types of discl. to expand								*

E/A = Environmental Audit

Brunswick Mining and Smelting made comments regarding obtaining an independent audit opinion on environmental reports: "if it doesn't add any value then don't bother." We are not in favour of external auditing of environmental reports because it wouldn't change the information being reported and therefore doesn't add any value at this time. However, if the credibility of environmental information becomes an issue in the future then an independent opinion could add value.

Several informants made comments regarding a desire to keep environmental performance reporting on a voluntary

disclosure basis. One informant at Brunswick Mining and Smelting said that environmental disclosure needs to remain on a voluntary basis. If the disclosure becomes regulated then it will become inflexible and users will likely become inundated with information. However, some voluntary standardization to allow comparability over time and between companies would be desirable.

This sentiment was repeated by another informant at Pulp and Paper Company A. The hope is that environmental reports remain voluntary. Industry associations may begin to set industry standards. The concern is that if companies are "too loose" with their information then environmental reporting may become regulated.

A third informant at Canadian Pacific Forest Products offered similar comments on the topic: the preference is for environmental reporting to remain voluntary. The industry will need to self-police in order to ensure environmental reporting remains voluntary.

One informant at Pulp and Paper Company A noted: there are no rules in environmental reporting but if the reporting is to be of value, it should follow quasi-financial reporting rules.

Table 71 - Interview Question #15

WHERE DO YOU STAND ON THE DISCLOSURE OF "BAD" NEWS?

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Must disclose it	*	*	*	*	*	*	*	*

This question achieved unanimity amongst all eight companies. Following is a sample of comments which typifies the responses received to this question.

All of our monitoring data is sent to the government. Therefore, any member of the public has access to this information. We would rather deal with the public directly and answer any questions than have them obtain the information from the government.

There is no choice but to provide full disclosure. The bad news has to be reported to the government. So, it is public knowledge anyway.

"There is nothing that we do that's unfavourable that has not been reported to the government." Therefore, all our bad news is already available to the public. "We are very committed to putting out the good, the bad and the ugly."

Because of government regulation, the government is already fully aware of all "bad" news.

Current OSC requirements dictate that any information that may have a material impact on the stock has to be disclosed, good or bad.

"We don't have anything to hide."

Table 72 - Interview Question #16

WHAT ARE THE FACTORS THAT HAVE MOTIVATED YOUR CORPORATE ENVIRONMENTAL DISCLOSURE?

(This question had multiple responses.)

	C	P	B	M	P	S	I	I
	P	&	M	I	R	C	N	N
	F	P	S	N	A	U	V	V
	P	A		A	I	R	A	B
a) Info relevant to S/H needs			*					
b) Interest groups	*		*					
c) E/R produced by competitor	*							
d) Customer demands	*							
e) Educating elected govt.	*	*						
f) We have a good story	*	*						
g) Educate employees		*						
h) Public expectations		*		*				
i) Investor expectations		*	*	*				
j) "Regulatory" (CICA/OSC) req't.							*	
k) Good business practices							*	
l) Good corporate citizenship							*	
m) Reassure S/H and public						*		
n) Not Applicable								* *

Clearly a wide range of responses was expressed. Both pulp and paper companies indicated that one of the reasons for producing environmental disclosure was to educate elected government politicians. They both made a clear distinction between elected politicians and bureaucrats. Both companies felt that the bureaucrats were sufficiently aware of the company's environmental performance through the company's detailed reports to government.

Both pulp and paper companies also indicated that they felt that there was a real difference in attitude between the people living in the cities in Southern Ontario and the people living and working in the pulp and paper communities. The industry is in the north but the voters are in the south. The people in the south get their information filtered by the news media that may have either a limited understanding and/or a certain agenda. Both companies feel that it is important to produce an environmental report to communicate the company's environmental performance to the public.

Summary

Sixteen basic questions were asked of each informant and the results proved very similar in some cases and very diverse in other cases. These questions also offered some interesting insights into the environmental disclosure process. I shall begin by presenting the disclosure practices common across the companies interviewed, to be followed by disclosure practices in which the interviewed companies diverge. This is then followed by an overview of the insights derived from the interview process.

Similarities

- (1) All of the six resource based companies have a designated individual responsible for environmental matters. This is an upper management position, or a position with direct accountability to the President and/or Board of Directors. (See Table 57 - Interview Question #1.)
- (2) All of the six resource based companies adhere to an environmental policy. This policy may be developed by the company, the company's parent or the industry association of which the company is a member. (See Table 59 - Interview Question #3.)
- (3) All of the six resource based companies use environmental auditing to one extent or another. (See Table 60 - Interview Question #4.)
- (4) Trade journal articles have very limited use for corporate communications. (See Table 65 - Interview Question #9.)
- (5) Environmentally-related advertising is minimal. (See Table 67 - Interview Question #11.)

- (6) Disclosure levels have increased over recent years on both a voluntary and regulatory basis. (See Table 68 - Interview Question #12.)
- (7) Most of the companies felt that the current level of disclosure output should remain fairly constant in the near future. (See Table 69 - Interview Question #13.)
- (8) It was felt that on an industry-wide basis, there would be an increase in environmental disclosure. (See Table 70 - Interview Question #14.) This is not consistent with the comments made by the individuals that felt that their own disclosure levels would remain fairly constant in the near future. Perhaps, the individuals interviewed see their companies as industry leaders in disclosure.
- (9) There was a unanimous response amongst all eight companies that "bad news" must be disclosed. (See Table 71 - Interview Question #15.)

Differences

- (1) The resource based companies were divided as to whether or not there should be an environmental committee of the Board of Directors. (See Table 58 - Interview

Question #2.) The majority seemed to have made a conscious decision not to establish such a committee in favour of making the entire Board responsible for environmental matters.

- (2) There is a great deal of diversity in the nature of the individuals responsible for the annual report. (See Table 61 - Interview Question #5.) Perceived audiences for the annual report differ from company to company. (See Table 61 - Interview Question #5.) However, the iterative review process and notion of the annual report as a consensus document was common to all eight companies. (See Table 61 - Interview Question #5.)
- (3) Environmental reports are being prepared or planned by the two largest companies which are pulp and paper companies. The other resource based companies do not appear to be planning to undertake such disclosure. (See Table 62 - Interview Question #6.)
- (4) OSC filings are prepared by different individuals from company to company. (See Table 63 - Interview Question #7.)
- (5) Information releases are prepared by different individuals from company to company. (See Table 64 -

Interview Question #8.) However, all but one of the companies indicated that the information releases that were issued were limited to material release items as required by the OSC.

- (6) Essentially only two companies provide brochures and educational material. (See Table 66 - Interview Question #10.)
- (7) The motivations for disclosure differed from company to company. (See Table 72 - Interview Question #16.) It appeared as though the two pulp and paper companies felt the strongest pressure from the general public/interest groups to provide environmental disclosure. This may be because of the industry the companies operate in or it may be as a result of the size of the companies.

Additional insights were derived from the interviews. These are:

- (1) Environmental issues have created a need to change management structures and functions. The resource based companies have responded uniformly by creating upper level environmental management positions and undertaking environmental auditing. However, the need for an environmental committee

of the board and the nature of the role played by directors differs from company to company.

Although further research into this area of management structure and corporate governance is advised it is outside the realm of mainstream accounting research.

- (2) The companies interviewed provided a list of a broad range of stakeholder groups that influenced disclosure management and were seen as audiences for the environmental disclosure. Further research to more clearly identify user groups and their needs would be beneficial to the disclosure management process.
- (3) External consultants such as public relations consultants are used in the disclosure management process. Their role is further evaluated in Section 7.5 which examines the interview results in the context of the Gibbins, Richardson, Waterhouse (1990) model of disclosure management.
- (4) Personalities in the corporation appear to have an influence on the disclosure management process. In two of the companies the President had a strong influence on the disclosure outputs. The role of

such personalities is further evaluated in Section 7.5 which examines the interview results in the context of the Gibbins, Richardson, Waterhouse (1990) model of disclosure management.

- (5) Based on the interviews it appears that environmental reports will become more common. Although there is a strong desire to maintain them as voluntary documents, there is also an understanding that some form of standardization is required in order to make the documents comparable. Future research could monitor this change with a view to aid in standard setting where required.
- (6) Although not as commonly discussed in the interviews, there appears to be a potential role in the future for external auditors to provide an opinion on environmental reports. However, before this role can be assumed it will be necessary to develop environmental auditing and reporting standards. At this time research is more appropriately focused on developing such standards. However, it may be interesting to survey attitudes towards obtaining independent verification of environmental reports.

**Section 7.5 INTERVIEW RESULTS CAST IN GIBBINS, RICHARDSON
AND WATERHOUSE MODEL**

Section 7.4 presented the results of the interviews in a summary matter and illustrated that while disclosure practices have some common characteristics across the companies interviewed there are also some characteristics of disclosure management that differ significantly from company to company.

This section of the chapter takes the interview results one step further. The interview results are cast in the Gibbins, Richardson and Waterhouse (1990) model of the management of financial disclosure in order to test the model and determine if the model provides any additional insights.

Gibbins, Richardson and Waterhouse

The Gibbins, Richardson and Waterhouse (GRW) model was outlined in Chapter Two. Based on twenty interviews, GRW developed a model to explain and predict corporate financial disclosure. Their model includes six categories of disclosure outputs, i.e., dependent variables and five categories of independent variables that influence the set of disclosure outputs.

For a number of reasons only the independent variables of the GRW model are tested:

- (1) My research addresses a much more focused set of outputs (i.e., environmental disclosure) than the GRW model;
- (2) The environmental disclosure has already been captured in significant detail through the content analysis and statistical analysis in Chapter Four; and,
- (3) In the GRW model, the independent variables are much better defined than the dependant variables.

The independent variables in the GRW model are defined as follows:

- (I) Firm's disclosure position
 - a relatively stable preference for the way disclosure is managed
 - There are two dimensions:
 - (1) Ritualism which is uncritical adherence toward prescribed norms; and
 - (2) Opportunism which is seeking out firm specific advantage in the disclosure of financial information.

(II) Antecedents

- There are two types of antecedents:

(1) internal and

(2) external.

- Internal antecedents include:

(a) corporate history,

(b) corporate strategy and

(c) internal politics.

- External antecedents include:

(a) institutional factors such as:

(i) legislation,

(ii) interorganizational norms and

(iii) industry norms and

(b) market factors such as:

(i) regulation of markets,

(ii) use of financial markets,

(iii) factor markets and

(iv) competitive position.

(III) Disclosure issues

- These are defined by externally imposed disclosure requirements and by factors internal to the firm. The firm's disclosure position is relative to its perception of norms and opportunities.

(IV) External consultants and advisors

- These individuals play the following roles:

- (1) they help identify norms and opportunities;
- (2) they identify formal and informal rules;
- (3) they provide technical advice and an opinion;
- (4) their involvement adds credibility; and
- (5) they are a strategic resource in bargaining.

(IV) Structure

- Issues provide the stimulus for disclosure while structures are the activating force.

(1) Internal structure provides for the assignment of disclosure management responsibility and policies and procedures.

(2) External structure provides information demands channelled through other organizations.

Results cast in Gibbins, Richardson and Waterhouse model

The interview results, as cast in the GRW model, are presented in summary form in Table 73. It can be seen that for the most part the interview results support the model.

Table 73

Interview Results Cast in GRW Model

(Companies are listed only when they provide support)

	Disc. Position		Antecedents		Disc. Iss.	Extnl. Conslt.	Structure	
	Ritualism	Oppor-tunism	Intnl.	Extnl.			Intnl.	Extnl.
Evidence From Interviews	P&P A	CPFP	CPFP	CPFP		CPFP	CPFP	CPFP
	Min. A	BMS	P&P A	P&P A		P&P A	P&P A	P&P A
	Prairie	Invst. A	BMS	BMS		BMS	BMS	BMS
	Scurry		Prairie	Min. A		Min. A	Min. A	Min. A
	Invst. B		Scurry	Prairie		Prairie	Prairie	Prairie
			Invst. A	Scurry		Scurry	Scurry	Scurry
			Invst. B	Invst. A		Invst. A	Invst. A	Invst. A
Does Evidence Support Model	Weak to Strong	Strong	Mixed to Strong	Mixed to Strong	No	Mixed to Strong	Strong	Strong

Disclosure Position

This variable characterizes the company as taking either a ritualistic disclosure position or an opportunistic disclosure position. Opportunistic companies were easy to identify. Specifically:

- Canadian Pacific Forest Products began producing the "Environmentally Speaking" bulletin in 1990 and produced its first environmental report in 1991.

- At Brunswick Mining and Smelting the disclosure process is not repetitive, nor does it involve passive roles for management. The President takes an active role and managers in operations are responsible for providing content.

- Investment Management Company A responded proactively to changes in GAAP by seeking advice how to both comply with GAAP and present the information that the company felt was the best disclosure.

However, labelling the other companies as ritualistic was more difficult. For example, even though Scurry-Rainbow was labelled as taking a ritualistic disclosure position, it is in fact more opportunistic than Prairie Oil Royalties. Scurry-Rainbow chose to disclose environmental information and site restoration costs in 1990 whereas Prairie Oil Royalties did not provide such information until 1991.

Pulp and Paper Company A was classified as ritualistic even though it is planning to release an environmental report on its 1993 operations. This behaviour was classified as ritualistic because the company is not an industry leader in this regard. Several other pulp and paper companies, which did not meet the criteria for selection in the sample have already produced environmental reports.

Thus, following this reasoning, a ritualistic disclosure position can only be identified relative to what other companies in the same industry are doing.

Antecedents - Internal

The GRW model identifies three types of internal antecedents: (1) Corporate history; (2) Corporate strategy; and (3) Internal politics.

There was little evidence to support corporate history as an antecedent. Canadian Pacific Forest Products referred to a change in the culture and the environmental performance of the company and accordingly a need to communicate this change.

Corporate strategy, as defined by GRW, is a variable that has little support from the interview results. The

definition states that as firms choose their markets and where their shares are listed they are faced with certain disclosure norms. However, all the companies interviewed were listed on the Toronto Stock Exchange. Therefore, there was no difference in disclosure norms based on where the shares are listed.

Internal politics was a clear factor in disclosure management in the case of three companies:

- At Canadian Pacific Forest Products it was the support of the President that enabled the first environmental report to be produced despite some concern by others that the report would not reveal a perfect record.

- At Brunswick Mining and Smelting the President sees the annual report as an important document that imposes internal discipline and he takes an active role in its preparation.

- At Pulp and Paper Company A, the President insisted that there be something on the environment in the 1992 annual report (and there was) even though some executives felt that it would be more appropriate to provide this information in the upcoming environmental report.

There is one key area which does not appear to be included in the GRW model that has a strong effect on disclosure for several of the companies interviewed. This is the share ownership of the company. All of the companies in the sample except for Investment Company B were the subsidiary of a parent company. However, only three of the companies, Brunswick Mining and Smelting, Scurry-Rainbow, and Prairie Oil Royalties made reference to the effect that this had on their disclosure. These companies indicated that their annual reports are not used to provide information to the major shareholder. These major shareholders, through the Board and other reporting functions, have substantially more access to information about the company than is afforded by the annual report. An informant at Prairie Oil Royalties made a comment that illustrates the effect that ownership can have on disclosure. The informant indicated that Prairie Oil Royalties may provide more press releases in the future because the ownership percentage held by the parent company has dropped. Therefore, I would suggest that this factor should be included in the GRW model as an additional type of internal antecedent. It would also be interesting to undertake further research to determine why only three of the seven companies having greater than 50% of their outstanding shares held by a single party felt that this influenced their disclosure.

In connection with this additional factor of share ownership held by the parent company is the share ownership the company holds in subsidiary companies. Investment Management Company A indicated that the Management Discussion and Analysis section in their annual report is coordinated with the Management Discussion and Analysis sections provided by their various subsidiaries.

Antecedents - External

The GRW model outlines two major groups of factors as external antecedents: (1) Institutional and (2) Market. Under the Institutional group there are three sub-factors: (i) legislation; (ii) interorganizational networks; and (iii) industry norms.

Legislation is clearly a factor in disclosure management apart from the changing securities regulations that affects all companies listed on securities exchanges. A key item that affected all the mining, and oil and gas industries is the CICA Handbook requirement to accrue site restoration costs.

Interorganizational networks, described by GRW to affect credit unions for example, did not appear to be a factor in

the disclosure practices of any of the companies interviewed.

Industry norms, however, was a factor that influenced several companies:

- At Canadian Pacific Forest Products one of the motivations to produce an environmental report was the fact that another company in the industry had already produced one. "If the other company was going to tell their story then our company should too."

- At Pulp and Paper Company A several environmental reports from other companies were considered as part of the planning process for their first environmental report.

- Both Investment Management Company A and Investment Management Company B indicated that as part of the planning process, they reviewed annual reports put out by other companies in their industry.

Under the market group of factors there are four sub-factors: (i) regulation of markets; (ii) use of financial markets; (iii) factor markets; and (iv) competitive position.

Regulated markets did not appear to be an explicit factor. It may be argued though that government regulations on

cutting and site restoration affect the resource based industries. However, there was no indication from the informants that this had an effect on their disclosure practices.

Use of financial markets was a minor factor in determining disclosure practices. Investment Management Company A indicated that their Management Discussion and Analysis section was prepared at a prospectus level in anticipation of using it in a future prospectus.

Prairie Oil Royalties indicated that the annual report was used by the marketing department as a marketing device. Otherwise, reporting to employees was the only indication that factor markets influenced the disclosure practices of the companies interviewed.

Competitive position did not appear to be a factor in disclosure practices beyond the influence produced by industry norms.

Disclosure Issues

According to GRW, "Disclosure processes are activated by specific issues, according to the norms and opportunities perceived in each (p. 132)." It appears to me that the

disclosure issues are in fact a latent variable which manifests itself in one of two ways:

- (1) issues that are considered during the disclosure management process and are rejected - and therefore very difficult to measure; or
- (2) issues that are considered during the management process and are accepted and developed into disclosure - and therefore relatively easy to measure.

Given that disclosure issues are best measured by measuring disclosure outputs it would seem that the variable should be deleted from the model as it is more appropriately treated as a dependent variable than an independent variable.

External Consultants and Advisors

Support for this variable was mixed. GRW envisioned five roles for external consultants and advisors:

- (1) they help identify norms and opportunities;
- (2) they identify formal and informal rules;
- (3) they provide technical advice and an opinion;
- (4) their involvement adds credibility; and
- (5) they are a strategic resource in bargaining.

There was no support for the first role. As far as the second role, only Investment Management Company A indicated that external parties aided in the identification of formal and informal rules. As all of the companies in the sample were listed companies that required an audit it can be expected that the external auditors fulfilled the third and fourth role to one degree or another. With regard to the fifth role, only Investment Management Company A made reference to the use of external advisors as a strategic resource.

There is a sixth role for external consultants which falls outside the realm of accounting and therefore, likely outside the GRW model and that is the role played by external writers and designers to improve the nature of the communication in the annual report. Pulp and Paper Company A employed an external consultant for design and writing purposes. Brunswick Mining and Smelting employed an external consultant for theme development and design purposes and Investment Company A employed an external consultant for writing purposes.

Structure - Internal

All of the companies interviewed, except Pulp and Paper Company A provided evidence of an internal structure, i.e.,

clear responsibility for disclosure management assigned and/or clearly understood policies and procedures. Pulp and Paper Company A was experiencing some down sizing and reorganizing. Thus, roles and responsibilities were somewhat unsettled.

While evaluating the internal structure for disclosure management for the various companies, two different management styles emerged: one was a top-down approach, the other was a bottom-up approach. Canadian Pacific Forest Products, Pulp and Paper Company A, Investment Management Company A, Investment Management Company B, and Mining Company A all exhibited a top-down approach whereby management appeared to be responsible for the entire disclosure process. (It should be noted that in some of the cases this may be due to the number of employees.)

Both Scurry-Rainbow and Prairie Oil Royalties made reference to the use of formal and informal networks to gather information. An informant at Prairie Oil Royalties described it as a bottom-up process. However, these two companies are not as far along the continuum as Brunswick Mining and Smelting. Brunswick Mining and Smelting was the only company of the eight that had a true bottom-up process whereby operational managers are involved in the actual writing of the annual report.

Structure - External

The GRW model describes this as "the extent to which external demands for information are channeled through organizations that claim to represent third-party interests (p. 133)." This is clearly a strong factor for the resource based industries which are influenced by government regulations to disclose certain information directly to government officials. Also, the resource based industries are influenced by environmental interest groups. Based on the companies interviewed it would seem that the pulp and paper industry is the most affected by such groups as both companies referred to two population segments Ontario - those that live in the cities and don't understand the issues and those that live in the country and make their living from the environment. The two mining companies appeared to be moderately influenced by interest groups. The oil and gas companies appeared to be the least influenced by interest groups but this may be due to the fact that the companies interviewed are upstream companies responsible for exploration and drilling.

Summary

Although some of the sub-factors were not supported, the interview results provide strong overall support for the GRW

model of disclosure management. Nevertheless, a broader sample may provide even stronger support. For example, under the variable, Antecedents - internal, stock exchange listing is posited to affect disclosure. However, this could not be tested by the current study because all companies selected were listed on the TSE.

Based on the discussion above, there are four areas where I would suggest amendments to the GRW model:

- (1) an expanded definition of ritualistic disclosure position to clarify that disclosure position is determined relative to other companies in the same industry;
- (2) the addition of share ownership (both of company and by company) as a factor in the Antecedents - internal variable;
- (3) the deletion of disclosure issues as a variable as this variable can be best examined by measuring disclosure outputs; and
- (4) the addition of another level to the Structure - internal variable to differentiate companies that prepare their disclosure on a top-down or a bottom-up basis.

Section 7.6 SUMMARY

This chapter examined the results of the fourth and final stage of this research which is the interviews conducted with the eight companies in the sub-sample.

A sub-sample was chosen in a purposive manner and thus the larger companies from each of the four industries were selected. Therefore, the results are not generalizable to a larger population. However, it is felt that the depth of these interviews provides some interesting insights into the disclosure management process.

Sections 7.4 and 7.5 each offer their own summaries which provide conclusions and suggestions for future research. These two summaries are only briefly reviewed here.

Similarities in disclosure practices

- (1) Designated individual responsible for environmental matters.
- (2) Adherence to an environmental policy.
- (3) Environmental auditing performed.
- (4) Trade journal articles have limited use.
- (5) Environmentally-related advertising is minimal.
- (6) Disclosure levels have increased over recent years.

- (7) Interviewed companies' current level of disclosure output should remain fairly constant in the near future.
- (8) On an industry-wide basis, there will be an increase in environmental disclosure.
- (9) "Bad news" must be disclosed.

Differences in disclosure practices

- (1) Resource based companies divided on use of an environmental committee of the Board of Directors.
- (2) Great deal of diversity in individuals responsible for the annual report and in perceived audiences for the annual report. However iterative review process common.
- (3) Environmental reports not common.
- (4) OSC filings are prepared by different individuals from company to company.
- (5) Information releases are prepared by different individuals from company to company and at all but one of the companies are limited to material release items as required by the OSC.
- (6) Limited used of brochures and educational material.
- (7) The motivations for disclosure differed from company to company.

Additional insights

- (1) Environmental issues have created a need to change management structures and functions.
- (2) The companies interviewed described a broad range of stakeholder groups.
- (3) External consultants such as public relations consultants are used in the disclosure management process.
- (4) Personalities in the corporation appear to have an influence on the disclosure management process.

- (5) Environmental reports will become more common.
- (6) There may be a potential role in the future for external auditors to provide an opinion on environmental reports. However, before this role can be assumed it will be necessary to develop environmental auditing and reporting standards.

Interview results cast in the Gibbins, Richardson and Waterhouse model

Although some of the sub-factors were not supported, the interview results provide strong overall support for the GRW model of disclosure management.

Four amendments to the model were suggested:

- (1) An expanded definition of ritualistic disclosure position.
- (2) The addition of share ownership (both of company and by company) as a factor in the Antecedents - internal variable.
- (3) The deletion of disclosure issues as a variable.
- (4) The addition of another level to the Structure - internal variable to differentiate companies that prepare their disclosure on a top-down or a bottom-up basis.

CHAPTER EIGHT

SUMMARY AND CONCLUSIONS

Section 8.1 INTRODUCTION

This chapter concludes the thesis. Section 8.2 provides the objectives of this thesis. Section 8.3 outlines the results of Stage I, the study of annual reports. Section 8.4 outlines the results of Stage II, the study of environmental reports. Section 8.5 outlines the results of Stage III, the study of additional disclosure. Section 8.6 outlines the results of Stage IV, interviews of disclosure preparers. Areas for future research are discussed in Section 8.7. Section 8.8 concludes the thesis with a brief summary of the key contributions of this thesis.

Section 8.2 OBJECTIVES OF THE THESIS

This thesis set out, in four stages, to accomplish the following objectives:

- (1) Determine the quantity of environmental disclosure and describe the nature of environmental disclosure.
- (2) Determine if there has been a change in the quantity and nature of environmental disclosure over time.
- (3) Determine the characteristics of firms providing environmental disclosure.

- (4) Explore the extent of accounting information found in the environmental disclosure and the role of accountants in producing environmental disclosure.
- (5) Explore the management process behind the production of environmental disclosure.

These four stages included:

- (1) The development of a unique content analysis protocol and its application to 183 annual reports from a random sample of TSE companies (Stage I);
- (2) An exploration into the existence of environmental reports produced by the main sample (Stage II);
- (3) A study of other disclosure (primarily OSC filings) produced by a sub-sample of eight purposively selected companies (Stage III); and
- (4) Interviews of disclosure preparers in the sub-sample of the same eight companies (Stage IV).

Any conclusions regarding the results found in these four stages must be put into the context of the sample selected before generalizations are made. For Stage I and Stage II, the sample consisted of companies randomly chosen from four industries. These companies were incorporated prior to 1969 and publicly traded on the TSE from 1969 onwards. These companies continued to operate through 1979, 1989, 1990 and 1991. To the extent that this criteria is kept in mind, the findings should be generalizable to other companies meeting the same criteria in the same industries.

For Stage III and Stage IV, the sub-sample of eight industries was constructed in a purposive manner by selected the two largest companies in each of the four industries under study (investment management, mining, oil and gas and pulp and paper). Therefore, the conclusions derived from Stage III and Stage IV are not generalizable to a larger population. However, the results from Stage IV were extensive enough to be used to test the Gibbins, Richardson and Waterhouse (1990) model of disclosure management.

Section 8.3 SUMMARY OF STAGE I RESULTS

The study of annual reports in Stage I (Chapter Four) included four independent variables that were matched singly with each of four dependent variables. The independent variables were drawn largely from the literature on social responsibility/environmental disclosure and narrative disclosure. They are:

- (1) Time (1969, 1979, 1989, 1990, 1991);
- (2) Industry (investment management, mining, oil and gas, and pulp and paper);
- (3) Size of company (small - less than or equal to \$10 million in total assets; medium - greater than \$10 million but less than \$100 million in total assets; and large - greater than or equal to \$100 million in total assets); and

- (4) Profitability (low - ROA less than industry mean for companies in sample; and high - ROA greater than or equal to industry mean for companies in sample).

The four dependent variables measured the nature of the disclosure. Likewise these were drawn from the literature. Although, the dependent variables were more influenced by practitioner literature than academic literature. The four dependent variables are:

- (1) Subject Matter (includes eight categories);
- (2) Information Type (includes ten categories);
- (3) Location of information (includes four categories); and
- (4) Tense of information (includes three categories).

Quantity of information was also treated as a dependent variable. It was measured as the count of sentences per annual report containing environmental information.

The results are presented by independent variable with reference to the relevant literature as outlined in Table 2 in Chapter Two.

Time (General Research Question #1)

Time has a significant effect on both the quantity of environmental disclosure provided and on the nature of environmental disclosure provided. It was found that the quantity of disclosure differed between the following years: 1991 and 1969; 1991 and 1979; 1990 and 1969; and 1990 and 1979.

The nature of disclosure also changed over time for certain pairs of years in certain categories under all four dependent variables: Subject Matter, Information Type, Location of information and Tense of information.

The results support both the Guthrie and Parker (1989) conclusion that corporate social reporting is a long-established practice and the Blunn (1992) conclusion that annual reports are providing more discussion of environmental issues. This thesis demonstrates that disclosure has increased, in agreement with Blunn. But, the thesis has also demonstrated that as early as 1969 some companies were providing environmental disclosure. Therefore, environmental disclosure is an older phenomenon (i.e., not new within the last five years) and a phenomenon that is increasing.

Industry (General Research Question #2)

Industry has a significant effect on both the quantity of environmental disclosure provided and on the nature of environmental disclosure provided. It was found that the quantity of disclosure differed between pulp and paper and each of the other three industries.

The nature of disclosure also differed by industry in certain categories under all four dependent variables: Subject Matter, Information Type, Location of information and Tense of information. It should be noted that Industry was the independent variable that explained the most differences in disclosure practices.

The results support the conclusions of the United Nations Economic and Social Council (1992) which also found the forestry industry to be the highest producer of environmental disclosure. As well, the results are consistent with the general conclusions reached by Ingram (1978) and Thompson, Olsen and Dietrich (1987). The results differ from Cowen, Ferreri and Parker (1987) who did not find industry to be a strong influence in the type (i.e., subject matter) of disclosure produced. This may be due to the use of different definitions of subject matter/disclosure type.

Size (General Research Question #3)

Size of company has a significant effect on both the quantity of environmental disclosure provided and on the nature of environmental disclosure provided. It was found that the quantity of disclosure differed between large companies and small companies.

The nature of disclosure also differed by size of company in certain categories under the dependent variables: Location of information and Tense of information.

This positive effect of size on disclosure supports the findings of Cowen, Ferreri and Parker (1987); Trotman and Bradley (1981); Ingram (1978); Buzby (1975); Singhvi and Dessi (1971); and Thompson, Olsen and Dietrich (1987).

Profitability (General Research Question #4)

Profitability has no significant effect on the quantity of environmental disclosure provided or on the nature of environmental disclosure provided.

This lack of association between profitability and disclosure is consistent with the findings of Cowen, Ferreri and Parker (1987); Freedman and Jaggi (1986); Bowman and

Haire (1975); and Guthrie and Parker (1989). Anderson and Frankle (1980); Ingram (1978); and Singhvi and Desai (1971) came to different conclusions. I suspect this is due to the way profitability of economic performance was measured.

The Domain of Accounting (Research Question #5)

The environmental disclosure in annual reports was then examined using three information dichotomies. These dichotomies were derived from Lev (1992) with some adaptation. This was undertaken to both confirm the results generated by statistical analysis and to determine what portion of this environmental disclosure is accounting information.

It can be seen by the following four conclusions that the information dichotomies support the conclusions derived by statistical analysis as discussed above.

- (1) Use of these dichotomies is relatively consistent over time. (Relates to General Research Question #1.)

- (2) As a percentage of its total disclosure, the pulp and paper industry produces a significantly lower percentage of both accounting and regulatory

disclosure. (Relates to General Research Question #2.)

(3) As company size decreases the proportion of regulatory disclosure increases. (Relates to General Research Question #3.)

(4) Company profitability has no effect on disclosure practices for any of the three information dichotomies. (Relates to General Research Question #4.)

Tables 40 through 43 found in Chapter Four indicate the portion of accounting information for the variables Time, Industry, Size of company and Profitability. Accounting information is defined as the first five categories under the dependent variable, Information Type. Non-accounting information is the last five categories under the dependent variable, Information Type.

Accounting information:

- Dollars;
- Financial Impact;
- Risk Management-General;
- Risk Management-Quantified; and
- Risk Management-Compliance;

Non-Accounting information:

- Acts/Processes-Quantified;
- Acts/Processes-General;
- Laws and Regulations;
- General; and
- Non-specific.

Table 40 in Chapter Four indicates that the portion of environmental disclosure that can be considered to be accounting information has ranged from a low of 16.5% in 1969 to a high of 30.2 % in 1979. Thus, the percentage has remained relatively constant over time at an overall percentage of 25.2%.

Table 41 in Chapter Four indicates that the portion of information that can be considered to be accounting information ranges from 21.8% in the pulp and paper industry to 50.0% in the investment management industry. The mining industry and the oil and gas industry are very close at 48.5% and 48.2% respectively. Because the bulk of environmental disclosure is provided by the pulp and paper industry, the percentage of accounting information is 25.2% over the five industries.

Table 42 in Chapter Four indicates that the portion of environmental disclosure that can be considered accounting

information ranges from 23.1 % for medium companies to 26.3% for small companies. Amongst the three sizes of companies the average is 25.2%.

Table 43 in Chapter Four indicates that the portion of environmental disclosure that can be considered accounting information ranges from 20.3% for low profitability companies to 27.6% for high profitability companies. Again, the average is 25.2%

In short, only about one-quarter of the environmental disclosure in the annual report can be considered accounting information.

Future research is required in order to determine, from a user point of view, what information is required and how much accounting information is enough.

Section 8.4 SUMMARY OF STAGE II RESULTS

General Research Questions #6 and #7

Only one environmental report (Canadian Pacific Forest Products Limited) was found for the companies in the main sample for the years under study. While the type of

analysis that can be performed with one environmental report is limited the results are reviewed briefly.

- (1) The annual report with 69 sentences coded contained more environmental disclosure than the environmental report with 56 sentences coded. (See Table 44.) This is likely due to the fact that the environmental report was only four pages in length.
- (2) With regard to subject matter, the annual report is more focused on the product whereas the environmental report is more focused on by-products. (See Table 44.)
- (3) With regard to type of information, the annual report places more emphasis on dollars, financial impact and description of general acts whereas the environmental report places more emphasis on all three categories of risk management. (See Table 45.)
- (4) There appears to be little difference in the tense used between the two documents. (See Table 46.)

Although it is not possible to make any generalizations on a sample size of one, it would appear that the results are consistent with Zeghal and Ahmed (1990) and Lebar (1982) who

indicate that different reporting vehicles send different messages.

Future research designed to investigate more companies with environmental reports is needed before conclusions can be made regarding the comparison of annual reports and environmental reports

Section 8.5 SUMMARY OF STAGE III RESULTS

General Research Questions #8 and #9

Outside of the annual report, additional environmental disclosure was found primarily in the OSC filings mandated by securities regulations. Only two companies of the eight (Canadian Pacific Forest Products and Pulp and Paper Company A) provided any additional environmental disclosure in periodicals or newspapers. And, only one company of the eight (Canadian Pacific Forest Products) provided additional environmental disclosure through voluntary corporate documents.

The quantity and nature of environmental disclosure found in the OSC filings as compared to the annual report were analyzed qualitatively and statistically. It was found that there was no difference in the quantity of disclosure

provided through the two media. And, there were few differences found between the nature of the disclosure provided through the two media.

As far as differences within each medium. It would appear that in both media the information is more present oriented than future oriented. The results of the statistical tests on possible differences in information type were not conclusive. No differences were found with regard to the use of subject matter.

These results contradict the conclusions of Zeghal and Ahmed (1990) and Lebar (1982). These two articles suggest that different reporting vehicles send different messages. This was not found to be the case in Stage III although it was found to be the case in Stage II. This contradiction may arise because of the small sub-sample used in the thesis (eight companies) or perhaps the examination of different vehicles (as in the case of Zeghal and Ahmed) or perhaps finer screen on classifying information (as in the case with Lebar).

Further research needs to be performed in this area to determine if companies are sending out different messages in different reporting vehicles.

Section 8.6 SUMMARY OF STAGE IV RESULTS**General Research Questions #10**

Sixteen basic questions were asked of each informant and the results proved very similar in some cases and very diverse in other cases. Table 56 in Chapter Seven lists the questions and where responses were similar or different.

Similarities

- (1) All of the six resource based companies have a designated individual in an upper management position responsible for environmental matters. (See Table 57 - Interview Question #1.)
- (2) All of the six resource based companies adhere to an environmental policy. (See Table 59 - Interview Question #3.)
- (3) All of the six resource based companies use environmental auditing to one extent or another. (See Table 60 - Interview Question #4.)

- (4) Trade journal articles have very limited use for corporate communications. (See Table 65 - Interview Question #9.)
- (5) Environmentally-related advertising is minimal. (See Table 67 - Interview Question #11.)
- (6) Disclosure levels have increased over recent years on both a voluntary and regulatory basis. (See Table 68 - Interview Question #12.)
- (7) Most of the companies felt that the current level of disclosure output should remain fairly constant in the near future. (See Table 69 - Interview Question #13.)
- (8) It was felt that on an industry-wide basis, there would be an increase in environmental disclosure. (See Table 70 - Interview Question #14.) This is not consistent with the comments made by the individuals that felt that their own disclosure levels would remain fairly constant in the near future. Perhaps, the individuals interviewed see their companies as industry leaders in disclosure.

- (9) There was a unanimous response amongst all eight companies that "bad news" must be disclosed. (See Table 71 - Interview Question #15.)

Differences

- (1) The resource based companies were divided as to whether or not there should be an environmental committee of the Board of Directors. (See Table 58 - Interview Question #2.)
- (2) There is a great deal of diversity in the nature of the individuals responsible for the annual report. (See Table 61 - Interview Question #5.) Perceived audiences for the annual report differ from company to company. (See Table 61 - Interview Question #5.) However, the iterative review process and notion of the annual report as a consensus document was common to all eight companies. (See Table 61 - Interview Question #5.)
- (3) Environmental reports are being prepared or planned by the two largest companies in the sub-sample which are pulp and paper companies. The other resource based companies in the sub-sample do not appear to be planning to undertake such disclosure. (See Table 62 - Interview Question #6.)

- (4) OSC filings are prepared by different individuals from company to company. (See Table 63 - Interview Question #7.)
- (5) Information releases are prepared by different individuals from company to company. (See Table 64 - Interview Question #8.)
- (6) Essentially only two companies provide brochures and educational material. (See Table 66 - Interview Question #10.)
- (7) The motivations for disclosure differed from company to company. (See Table 72 - Interview Question #16.) It appeared as though the two pulp and paper companies felt the strongest pressure from the general public/interest groups to provide environmental disclosure. This may be because of the industry the companies operate in or it may be as a result of the size of the companies.

Additional insights were derived from the interviews. These are:

- (1) Environmental issues have created a need to change management structures and functions. The resource based companies have responded uniformly by

creating upper level environmental management positions and undertaking environmental auditing. However, the need for an environmental committee of the board and the nature of the role played by directors differs from company to company. Although further research into this area of management structure and corporate governance is advised it is outside the realm of mainstream accounting research.

- (2) The companies interviewed provided a list of a broad range of stakeholder groups that influenced disclosure management and were regarded as audiences for the environmental disclosure. Further research to more clearly identify user groups and their needs would be beneficial to the disclosure management process.
- (3) External consultants such as public relations consultants are used in the disclosure management process.
- (4) Personalities in the corporation appear to have an influence on the disclosure management process. In two of the companies the President had a strong influence on the disclosure outputs.

- (5) Based on the interviews it appears that environmental reports will become more common. Although there is a strong desire to maintain them as voluntary documents, there is also an understanding that some form of standardization is required in order to make the documents comparable. Future research could monitor this change with a view to aid in standard setting where required.
- (6) Although not as commonly discussed in the interviews, there appears to be a potential role in the future for external auditors to provide an opinion on environmental reports. However, before this role can be assumed it will be necessary to develop environmental auditing and reporting standards. At this time research is more appropriately focused on developing such standards. However, it may be interesting to survey attitudes towards obtaining independent verification of environmental reports.

Interview results cast in the Gibbins, Richardson and Waterhouse model of disclosure management

Although some of the sub-factors in the model were not supported, the interview results provide strong overall support for the GRW model of disclosure management. Nevertheless, a broader sample may provide even stronger support. For example, under the variable, Antecedents - internal, stock exchange listing is posited to affect disclosure. However, this could not be tested by the current study because all companies selected were listed on the TSE.

Based on the discussion above, there are four areas where I would suggest amendments to the GRW model:

- (1) an expanded definition of ritualistic disclosure position to clarify that disclosure position is determined relative to other companies in the same industry;
- (2) the addition of share ownership (both of company and by company) as a factor in the Antecedents - internal variable;

- (3) the deletion of disclosure issues as a variable as this variable can be best examined by measuring disclosure outputs; and
- (4) the addition of another level to the Structure - internal variable to differentiate companies that prepare their disclosure on a top-down or a bottom-up basis.

General Research Question #11

What role did the accounting function play?

In the six resource based companies, each with their own environmental management position, there was only one individual with a professional accounting designation that was responsible for environmental matters and hence, environmental disclosure. This individual, at Scurry-Rainbow, obtained this position by way of experience in the internal audit department of the company. Other individuals holding the environmental management position were for the most part engineers.

Thus the small sample did not reveal an existing strong primary role for the accounting profession. Therefore, this

discussion moves from a report of findings to a discussion about what role accounting should play.

What role should the accounting function play?

Birnberg (1980) discusses the concept of different accounting for different purposes. He says that the current problems that we have with disclosure are "the result of contemporary economic relationships requiring more than a single accounting to properly portray their effects to the users of Financial Statements (p. 79)." Perhaps we can not and should not try to squeeze environmental reporting into our current model. But, the developing of new models is an important topic for future research.

There are a number of areas within our current financial reporting model that accountants need to concern themselves with. These areas are:

- site restoration costs;
- capital expenditures;
- compliance with environmental laws; and
- need for environmental information.

Site restoration costs

As a minimum, accountants need to understand how such estimates as site restoration costs are being calculated. Accounting has evolved to the point where other professionals play a role in developing financial information and where accountants rely on these professionals. Actuaries develop estimates for pension accounting purposes and insurance reserves. Such estimates are reviewed by accountants for reasonableness. Lawyers opine on the status of litigation and advise accountants as to their estimation of outcome. Such opinions are reviewed by accountants and where necessary are accrued and/or disclosed as contingencies.

Likewise, if accountants are going to exercise due diligence they need to take the site restoration estimates provided to them by engineers and satisfy themselves as to the reasonableness of the estimates.

Capital expenditures

Site restoration costs are but one small component of environmental disclosure. Capital expenditures on pollution control and production equipment for environmentally-friendly products such as recycled newsprint also form part

of the accounting system. Accountants need to acquaint themselves with such costs for both planning and record keeping purposes. An article in The Globe and Mail (Gibbon, 1994) cites one company, Domtar, which will have to spend \$320 million over the next three years to bring its nine pulp and paper mills into compliance with new provincial and federal environmental standards. Of the \$250 million set aside for the company's capital expenditures in 1994, \$100 million is for environmental improvements.

Note that recording environmental costs is not a trivial matter. For example, one decision to be made is whether to capitalize or expense the cost. A CICA research report, Environmental Costs and Liabilities: Accounting and Financial Reporting Issues, (1993a) revealed that the study group for the research report was unable to come to a consensus on issues of capitalizing versus expensing environmental costs.

There should be little dispute that these are the kinds of environmental items that accountants must concern themselves with now, admittedly with the assistance of the appropriate engineering, scientific and technical personnel.

Compliance with environmental laws

Accountants must also ensure that the company is in compliance with current environmental laws and, for planning purposes, accountants should also understand what is likely to happen to these laws in the future. This conclusion is supported by Rittenberg, Haine and Weygandt (1992, p. 13), "It is our view that internal auditors will be increasingly called on to evaluate both (1) the entity's compliance with applicable environmental laws and regulations and (2) the entity's potential exposure to existing environmental cleanup provisions."

Need for environmental information

External accountants must be aware of environmental issues not only to ensure that estimates and contingencies are appropriately reported but also to have an overall view of how environmental matters can affect the health of an organization. The SEC Commissioner was reported to have said in a speech: "Environmental costs are one of the critical issues facing businesses today. (Deloitte & Touche Review, 1993, p. 1)."

If the demand for more environmental information increases, as The Economist (1993) and Mahood (1993) suggest, then, as

a minimum, accountants will have to consider how environmental issues will be reflected in the Financial Statements and the MD&A.

Section 8.7 FURTHER AREAS OF RESEARCH

The work done in this thesis points out other areas which have been studied, or are currently under study and need to be studied both from an academic frame of reference and from a practical and professional frame of reference.

Some of these areas include the following:

User needs

Further research to more clearly identify user groups and their needs would be beneficial to the disclosure management process. The accounting profession needs to identify and respond to these needs.

Environmental reporting standards

There is a need to develop environmental reporting standards. As accountants have experience in setting financial reporting standards they have expertise to contribute to the environmental standard setting process. Standardization is

critical to ensure that environmental disclosure is comparable between companies and over time.

Environmental indicators

There is a need to develop measures or indicators of environmental performance. Given accountants training in measurement, they have expertise to offer in this area.

Increased business knowledge

As environmental issues can have a significant impact on business, accountants will need to learn more about how these issues impact business as part of their knowledge of the business (for external accountants) or for managing the business (for internal accountants).

Working with other professionals

Environmental management is a multi-disciplinary area and accountants will need to rely on the work of engineers, scientists and technologists just as they now rely on actuaries and lawyers.

Independent opinion on environmental reports

If the credibility of environmental reports are called into question, the accounting profession will have expertise to offer in the rendering of opinions on reported information.

Hence, there is still much work left to do in this area of environmental performance reporting.

Section 8.8 KEY CONTRIBUTIONS

This thesis has taken an exploratory, descriptive approach with the following objectives in mind:

- (1) Describe the environmental issues that are currently being disclosed in annual reports and other media and the nature of the information used to present these issues.
- (2) Determine if there has been a change in the quantity and nature of environmental disclosure over time.
- (3) Determine the characteristics of firms providing environmental disclosure.
- (4) Explore the extent of accounting information found in the environmental disclosure and the role of accountants in producing environmental disclosure.
- (5) Explore the management process behind the production of environmental disclosure.

The four stages of the research set out to answer these objectives with a combination of methods and sources of

data. And, I believe that this thesis makes a contribution to the field of accounting for the following reasons.

First, a specifically designed content analysis classification scheme was developed and can be used to analyze further items of disclosure such as environmental reports. The classification scheme outlines the subject matter being discussed, the type of information used, where the information is located and the tense of the information. This classification scheme can also be used to prompt discussion as to which of the categories of the classification scheme relate to accounting and which do not.

Second, even though environmental performance reporting is an increasing trend, this thesis provided data to indicate that yes, the trend is increasing but that environmental performance reporting has also been with us for several decades.

Third, firm characteristics such as industry and size of company were found, consistent with the extant literature, to have an effect on environmental disclosure. Profitability, was found to have no effect on environmental disclosure (also consistent with the extant literature.)

Fourth, only about 25% of the environmental disclosure being provided contains accounting information, as defined in this thesis and the interviews demonstrated that accounting currently plays a very limited role in the preparation of environmental disclosure.

Fifth, interviews with 17 individuals over eight companies served to illustrate some of the similarities and some of the differences in current environmental performance reporting practices. The results of these interviews were also used to provide additional support for the Gibbins, Richardson and Waterhouse model of disclosure management.

Hopefully, these contributions will further the development of accounting and accounting practices to meet the challenges of a rapidly-changing world which needs properly communicated environmental information.

APPENDIX A

LIST OF KEY TERMS USED TO EXTRACT TEXT

(Derived from Annual Reports and Environmental
Reports Outside of Selected Sample)

accidental process emissions
accidental release
acid deposition
acid gas emissions
acid mine drainage
acid mine drainage water and metals
acid rain
acidification
acute toxicity
adsorbable organic halides (AOX)
air emission control system
air emissions
air emissions inventory program
air emissions reduction project
air permit
air quality
air quality and meteorological monitoring
ambient air quality
ambient air quality requirements
ambient ground levels
animals
AOX
aquatic life
atmosphere
atmospheric emission requirements
atmospheric emissions
avian life
avoidance handcut
avoidance handcutting
backlog areas
benzene
biochemical oxygen demand (BOD)
biodegradability
biological treatment facility
bioremediation
bioremediation facility
bleach pulp
bleaches hardwood
bleaching mills
bleaching process
blue box
BOD

buffer zones
Business Council for Sustainable Development
by-product recovery
Canadian Eco Logo
carbon dioxide
carbon dioxide emissions
CFCs
chemical oxygen demand (COD)
chlorine
chlorine bleaching
chlorofluorocarbons
clarifier
clean air
Clean Air Act
cleaned
cleaner materials
cleaner technologies
cleaner world
cleanup
cleanup operations
cleanup work
clearcut harvesting
clearcutting
CO₂
CO₂ emissions
COD
composting
conservation
conservation of resources
conserve
conserving energy
containment
contaminant infiltration
contaminants
contaminated
contaminated soils
contaminating a site
contamination levels
control equipment
control final water quality
corrosion protection
corrosion-related failures
cutting less vegetation
decommission
decommissioned
decommissioning
decontaminate
de-inked
de-inking facilities
de-inking facility
de-inking process

delivery spills
dioxin
dioxins
discharge
discharge levels
discharge of contaminants
discharge of product
discharged
discharges
disposal
disposal options
disposal sites
dust deposition rates
Eco Logo
ecological
ecological balance
Ecologo
ecology
ecosystem
ecosystems
effluent
effluent control processes
effluent monitoring
effluent quality
effluent treatment
effluents
electricity
electrolyte discharged
elevated concentrations of lead in soil
eliminating discharges
emission
emission assessments
emission control processes
emission control rates
emission controls
emission factors and data
emission levels
emission targets
emissions
emissions inventories
endangered species
endangered wetlands
energy bill
energy conservation
energy consumption
energy cost
energy efficiency
energy efficient
energy intensity
energy management
energy management plans
energy management programs

energy management workshops
energy reduction
energy reduction targets
energy savings
energy sources
energy study
energy use
energy-savings suggestions
energy-savings targets
environment
Environment Canada
environment code
environment committee
environment ministry
environmental
environmental advances
environmental affairs staff
environmental analysis
environmental area
environmental assessment
environmental assessment study
environmental assessments
environmental auditing
environmental auditing program
environmental audits
environmental award
environmental awareness
environmental awareness and concerns
environmental benefits
environmental business issues
environmental codes of practice
environmental commitment
environmental committee
environmental concerns
environmental consideration
environmental considerations
environmental consulting
environmental control facilities
environmental control systems
environmental control technology
environmental co-ordinators
environmental damage
environmental data
environmental decision-making
environmental degradation
environmental destruction
environmental disruption
environmental education
environmental education and training
environmental communication programs
environmental engineering
environmental engineers

environmental enhancement
environmental equipment
environmental expenditures
environmental fund
environmental goal
environmental goals
environmental groups
environmental guidelines
environmental impact
environmental impact assessment
environmental impact assessment studies
environmental impact assessments
environmental impacts
environmental information
environmental initiatives
environmental investments
environmental issue
environmental issues
environmental leadership
environmental necessity
environmental management
environmental management and accountability
environmental management operating systems
environmental management system
environmental management tool
environmental matters
environmental monitoring program
environmental networks
environmental objective
environmental objectives
environmental perfection
environmental performance
environmental planning consultant
environmental policy
environmental policy statements
environmental practices
environmental problems
environmental processes
environmental program
environmental program management
environmental progress report
environmental projects
environmental protection
Environmental Protection Agency
environmental protection and water resources acts
environmental protection guidelines
environmental protection facilities
environmental protection, preservation and renewal
environmental quality
environmental science
environmental specialists
environmental standards

environmental regulations
environmental report
environmental requirements
environmental research
environmental research and development
environmental resources
environmental responsibilities
environmental responsibility
environmental review
environmental reviews
environmental services staffs
environmental solutions
environmental standards
environmental standards and regulations
environmental story
environmental stresses
environmental studies
environmental training and spill prevention
environmentalists
environmentally acceptable level
environmentally attractive
environmentally friendly
environmentally friendly operations
environmentally heedless economic growth
environmentally responsible manner
environmentally responsible way
environmentally safe manner
environmentally sensitive products
environmentally sound
environmentally sustainable
environments
eroding wilderness lands
excess smoke
excessive smoke
exhaust emissions
extinct
extinct species
final closures
fish
fish and game associations
fish and wildlife officers
fisheries
forest land management
forest management
forest management practices
forest renewal
fossil fuel impacts
fuel consumption
fuel with a lower sulphur content
furans
future removal
gas and dust emissions

gaseous emissions
gasoline vapor recovery
gasoline vapors
global climate change
global warming
gold exploration project closed
Green Plan (from the Government of Canada)
greenbelting
greenhouse effect
greenhouse gas
greenhouse gas emissions
greenhouse gases
ground level concentrations
ground-level ozone
groundwater contamination
groundwater protection
H₂S
habitat
Habitat Evaluation Procedures
halons
hazardous chemicals
hazardous waste
hazardous waste management procedures
hazardous waste sites
herbicides
hydrocarbon
hydrocarbon vapor recovery
hydrogen sulphide
impurities
incinerated
lambing
land
land disturbed
land impact
land restoration
landfill
landfill sites
landfilling
leaching
lead antimony slag
lead concentrations
leak
leak detection
leak prevention
less waste
life cycle
life cycle impacts
life cycle management
life cycle stewardship
livestock
low sulphur diesel

mammalian life
mandatory cleanup
metal discharges
minimize emissions
minimize packaging
minimizing impacts
mining activities disturb land
Ministry of Environment
Ministry of Forestry, Lands and Wildlife
National Round Table on Environment and Economy
natural capacity
natural environment
natural regeneration
natural resources
natural surroundings
natural wetland property
nitrogen oxides
nitrogen oxides emissions
non-hazardous waste
non-ozone-depleting
non-renewable
non-toxic
not satisfactorily restocked
NO_x
NO_x emissions
nurseries
oily sludge
oily soils
old growth forest
organically contaminated waste water
ozone depletion
parks
pesticides
physical audits
plant seedlings
planted
pollutants
pollution
pollution abatement
pollution control equipment
polystyrene
post-consumer fibre
post-consumer polystyrene
pre-commercial thinning
preservation
preserve
preventing spills
prevention
process water
product stewardship
protect waterways

protective booming
raw materials packaging requirements
receiving waters
reclaim
reclaimed
reclaiming
reclamation
reclamation activities
reclamation efforts
reclamation plans
reclamation work
reconditioned
recover
recovered
recyclable
recycle
recycled
recycled fibre
recycled fine papers
recycled material
recycled papers
recycled pulp
recycling
recycling collection systems
recycling efforts
recycling service
recycling system
reduce
reducing
reducing waste
reductions
reforestation
reforestation practices
reforestation programs
reforesting
regenerating the harvested sites
rehabilitation
remediation
replanted
replanting
reprocess
re-seed disturbed land
reseed naturally
re-shape the former open pit area
resource management
resource management practices
restock naturally
restocking
restoration
restoring sites
restoring surrounding terrain
retreatment

returnable
returnable containers
reusable containers
reuse
reuse and recycling program
reused
revegetation
river cleanup
Round Table on Environment and Economy
saving energy
seal off mine openings
sealing up the mine shaft
second growth forests
seedlings
seepage collection systems
seismic impact
seismic operations
selective cutting
silviculture
site assessment
site decommissioning
site effluent
site reclamation
site remediation
site restoration
skimming operations
smog
SO₂
SO₂ emissions
SO₂ plume
soil
soil contamination
soil erosion
soil quality
soil removal and replacement
solid waste
solid waste management
spawning
species
spill containment facilities
spill detection
spill of tailings
spill prevention
spill prevention project
spillage
spills
stack sampling
stewardship
sulphur
sulphur dioxide
sulphur dioxide emissions

sulphur dioxide levels
sulphur dust
sulphur recovery
sulphur recovery unit
sulphur-contaminated soil
sulphur-free
sulphuric acid released
sulphuric acid spill
suspended particulate
suspended solids
sustainability
sustainable development
sustainable development audits
sustainable development plan
sustainable development plans
sustainable development policy
sustainable development principles
sustainable development projects
Sustainable Development Task Force
sustainable economic development
sustainable production
sustained yield
switched from packaged to bulk
3Rs
toluene
total reduced sulphur (TRS)
total suspended particulate matter
total suspended particulates
total suspended solid materials (TSS)
total suspended solids
toxic
toxicity
trace levels
trace metals
treating water
treatment systems
treatment units
tree nurseries
tree nursery operations
trees
TRS
TSP
TSS
untreated discharges
used oil collection program
used oil recycling program
vegetation
vegetation management plan
VOC
volatile organic compounds (VOC)
waste
waste disposal

waste disposal techniques
waste investigations
waste management
Waste Management Act
waste minimization
waste reduction
waste reduction targets
waste reduction task force
waste stream
waste treatment
waste treatment systems
waste water
waste water filtration plant
waste water treatment plant
waste-disposal requirements
wastes
wastewater treatment system
water
water and gaseous emissions
water conservation programs
water consumption
water contamination
water discharge permit
water discharges
water permit
water quality
water runoff
water treatment facilities
water treatment plant
water treatment systems
water use management
waterfowl
waterways
wetlands
wilderness
wilderness lands
wildlife
wildlife consultant
wildlife habitat
wildlife habitats
wildlife management programs
xylene
zero discharge

Also: any reference to aquatic, avian and mammalian life
(e.g., bighorn sheep, caribou, cougar, deer, elk,
ferrets, moose, osprey, red fox, red-tailed hawks,
trout, white-tail deer)

APPENDIX B
DATA CODING SHEET

Company	Page #	# of Pages	Subject matter	Information Type	Location	Tense	Notes
Industry	1	2	1. Bus. Reg. 2. Bus. Reg. 3. Bus. Reg. 4. Bus. Reg. 5. Bus. Reg. 6. Bus. Reg. 7. Bus. Reg. 8. Bus. Reg. 9. Bus. Reg. 10. Bus. Reg.	1. Bus. Reg. 2. Bus. Reg. 3. Bus. Reg. 4. Bus. Reg. 5. Bus. Reg. 6. Bus. Reg. 7. Bus. Reg. 8. Bus. Reg. 9. Bus. Reg. 10. Bus. Reg.	1. Bus. Reg. 2. Bus. Reg. 3. Bus. Reg. 4. Bus. Reg. 5. Bus. Reg. 6. Bus. Reg. 7. Bus. Reg. 8. Bus. Reg. 9. Bus. Reg. 10. Bus. Reg.	1. Bus. Reg. 2. Bus. Reg. 3. Bus. Reg. 4. Bus. Reg. 5. Bus. Reg. 6. Bus. Reg. 7. Bus. Reg. 8. Bus. Reg. 9. Bus. Reg. 10. Bus. Reg.	
Year							
Document Type							
# of Pages							
Total Assets (for ARs)							
Net Income (for ARs)							
Return on Assets (for ARs)							
Sub-Total							
Total							

APPENDIX C

**A TRAINING GUIDE FOR ALL POSSIBLE COMBINATIONS
OF SUBJECT MATTER AND INFORMATION TYPE**

(Sentences developed for training purposes only)

Subject Matter	Information Type	
1	1	Sales of our recycled fine papers product line have reached \$12 million.
1	2	Sales of our recycled fine papers product line have been double anticipated levels.
1	3	We perform quality audits on a regular basis to ensure that our recycled fine papers product line meets our high standards.
1	4	We perform quality audits on a regular basis to ensure that our recycled fine papers product line contains at least 50% recycled fibre.
1	5	As a result of our quality audits, we know that our newsprint has continually maintained sufficient recycled fibre content to comply with U.S. laws.
1	6	We have 32 different products in our recycled fine papers product line.
1	7	We are expanding our recycled fine papers product line.
1	8	U.S. federal legislation requires that we ensure that all newsprint sold to U.S. markets contains 50% recycled paper.
1	9	We feel that it is important to promote the use of recycled paper products.
1	10	Producing recycled paper products is an important way to help preserve our natural resources.

Subject Matter	Information Type	
2	1	We have spent \$16 million dollars in the last three years on elaborate systems to test the dioxin levels in the effluent from our St. James paper mill.
2	2	We have spent considerable sums in the last three years on systems to test the dioxin levels in the effluent from our St. James paper mill.
2	3	Effluent testing is done at our St. James paper mill in order to ensure that government regulations on dioxin are not violated.
2	4	Effluent testing is done on a twice daily basis at our St. James paper mill in order to ensure that government regulations on dioxin are not violated.
2	5	As a result of effluent testing done at our St. James paper mill we have documentation that indicates that we were in compliance with government regulations on dioxin.
2	6	Dioxins are found in the St. James paper mill effluent at levels of 20 ppm.
2	7	Several of our pulp mills use chlorine bleaching in their processes which is seen as an environmentally unfriendly process.
2	8	New provincial regulations require that the level of dioxin in the effluent from our St. James paper mill not exceed 25 ppm.
2	9	We believe it is important to reduce the use of chlorine bleaching in our operations.
2	10	It has not been proven that the chlorine bleaching process has adverse environmental consequences.

Subject Matter	Information Type	
3	1	We plan to invest \$33 million in pollution control expenditures over the next three years.
3	2	We plan to make a significant investment in pollution control equipment in the upcoming year.
3	3	We soon expect to receive a report from our consultants which will outline alternative technologies for pollution control.
3	4	By the end of the year we had trained 65% of our operations people on the new pollution control equipment.
3	5	By curtailing production during the year we were able to reduce emissions so that we could maintain compliance with legislation.
3	6	We have spent the last 10 years designing appropriate pollution control technology for our St. James mill.
3	7	We have been working for some time on designing new pollution control technology for our St. James Mill.
3	8	We expect that there will be tougher environmental laws in the future regarding pollution control.
3	9	We are concerned that pollution control equipment is not always available in the marketplace.
3	10	Pollution control equipment is not always available on the marketplace and therefore appropriate technology has to be developed.

Subject Matter	Information Type	
4	1	We have spent \$23 million on our reforestation program in the current year.
4	2	We have made a considerable financial commitment to our reforestation program.
4	3	To ensure that our reforestation programs are effective, we monitor our replanted areas.
4	4	To ensure that our reforestation programs are effective, we monitor one quarter of our replanted acreage on a rotating basis every year.
4	5	By monitoring our replanting programs we have ensured that we have maintained compliance with our provincial permit.
4	6	During the current year we have planted 230,000 seedlings as part of our reforestation program.
4	7	We increased our reforestation levels this past year.
4	8	Our license with the provincial government requires us to prepare a detailed reforestation program which is available for public review.
4	9	We endorse the recycling programs initiated by our employees.
4	10	Recycling can offer many benefits.

Subject Matter	Information Type	
5	1	In accordance with the recommendations of the Canadian Institute of Chartered Accountants, we have accrued \$13.6 million in the current year for site restoration.
5	2	The accrual for depreciation and depletion includes an amount for site restoration.
5	3	To ensure that there are no adverse environmental impacts from sites that have already been closed we routinely perform inspections of all closed mine sites.
5	4	We have 16 decommissioned mine sites that we monitor on a regular basis in order to ensure that there are no adverse environmental impacts.
5	5	We have just completed the decommissioning of our St. James mine and have been awarded a certificate of approval by the provincial government.
5	6	There are 13 mine sites which must be considered when we estimate our accrual for site restoration costs.
5	7	We have chosen to incorporate community concerns into our site restoration plans wherever feasible.
5	8	The Canadian Institute of Chartered Accountants now recommends that we accrue for site restoration costs.
5	9	We heartily endorse the recent recommendations from the Canadian Institute of Chartered Accountants for accounting for site restoration costs.
5	10	Site restoration costs have a negative impact on the bottom line.

Subject Matter	Information Type	
6	1	We have donated \$70,000 to various recycling programs in the communities in which we operate.
6	2	Satisfying stakeholder demands for environmental responsibility will prove costly in the short-run but will serve to secure our long term survival.
6	3	We have appointed a community liaison officer in each of our plants to respond to public concerns about environmental issues.
6	4	Last year we responded directly to 23 complaints from the public regarding air emissions from our St. James mill.
6	5	During the course of the year we were in compliance with all environmental legislation.
6	6	We have received 1600 requests from the general public for our brochure "Recycling in Your Home".
6	7	We have held several discussion forums on environmental issues which have included members of the public as participants.
6	8	Because of public demands, environmental laws are getting more and more stringent.
6	9	We feel that it is important to keep in touch with the communities in which we operate. This helps us to become a more environmentally responsible company.
6	10	Stakeholder analysis is an important tool in developing a sound environmental management system.

Subject Matter	Information Type	
7	1	We calculate that the development of our new corporate environmental policy cost us \$20,000 in employee time.
7	2	We have instituted a new policy of spending one half of one percent of our gross revenue on donations to community recycling projects.
7	3	Our policy is to perform an environmental audit on all operational sites on a routine basis.
7	4	Our stated policy is to reduce SO ₂ emissions to 75,000 kilotonnes per year.
7	5	In keeping with our environmental policy, we have been in compliance with all environmental laws throughout the year.
7	6	Our environmental policy has been distributed by mail to all 15,000 employees throughout Canada.
7	7	We have held numerous information sessions throughout Canada to explain our environmental policy to our employees.
7	8	Environmental policies are not required by law but are rather something that we choose voluntarily to develop.
7	9	We feel that it is important to have a corporate environmental policy.
7	10	The Canadian Mining Association has developed an environmental policy.

Subject Matter	Information Type	
8	1	We have spent \$56,000 in training programs to acquaint our employees with the environmental laws that are applicable to their job description.
8	2	We have spent considerable sums in developing training programs to acquaint our employees with the environmental laws that are applicable to their job description.
8	3	We have appointed a new Vice-President of Environmental Affairs who will be responsible for monitoring environmental issues.
8	4	During the year we conducted environmental audits on six of our pulp and paper mills.
8	5	The environmental audits we completed during the year indicate several instances in which we were not in compliance with the law.
8	6	We have developed six different training programs which are designed to address environmental awareness through the corporation.
8	7	We have designed training programs to provide our employees with the necessary level of environmental awareness.
8	8	There are numerous environmental laws that were considered when we developed our new environmental management system.
8	9	We endorse the concept of environmental auditing.
8	10	Environmental auditing is a new concept that is now being employed throughout the industry.

APPENDIX D
CONTENT ANALYSIS PROTOCOL

(A) DEFINING ENVIRONMENTAL INFORMATION

Although a list of key words used to identify environmental information has been provided in Appendix C, such words will not always signal environmental information in all contexts. Therefore, care must be exercised in labelling a key word as environmental information.

For example, "natural resources" is a key term. But, if a company describes itself as a natural resource company the sentence would not be coded as it provides no information as to how the company impacts the natural environment.

Because three of the four industries chosen for the study are natural resource industries, information referring to their main activities of extracting/harvesting natural resources will not be coded. In general, use of the environment in the ordinary course of business will not be coded. Rather, only information about the environmental impact will be coded, i.e., only description of the degradation and conservation/preservation of the environment will be coded.

There are uses of the word environment which are not relevant for the purposes of this study. Specifically, environment can mean "surroundings" and when such meaning is intended, the word environment will not be coded. For example, "The company operates in the harsh environment of the arctic circle." would not be coded.

For the purpose of this study, health and safety will not be considered environmental information and will not be coded. (The only exception to this will be when environment is used in the same sentence as health and safety.) Although this distinction may be argued, the determining factor for excluding health and safety rests with the fact that there is a body of legislation dealing with health and safety that is quite separate from legislation dealing with environmental matters.

The environment inside the firm will not be coded as this generally refers to health and safety matters.

References to recreation will not be coded. For example, "Our logging roads are used by others for recreational purposes." would not be coded.

(B) DETERMINING THE CONTEXT FOR CODING

The context of coding environmental information will be defined by three decision rules.

- (1) Everything in the environmental report can be considered environmental information except for the following: health and safety information, non-environmental community interaction; and information about the company.
- (2) Often there are special sections in an annual reports or documents that are clearly devoted to environmental information. Everything in these sections will be considered environmental information except for the following: health and safety information, non-environmental community interaction; and information about the company.
- (3) Where decision rules (1) and (2) are not relevant, the unit of context will be the paragraph. Coding shall begin with the identification of the first key word in the paragraph and subsequent sentences referring to this key word shall be coded.

(C) INFORMATION TO BE CODED

All coding is to be done on the main idea of the sentence.

All text in the annual report that expresses a complete thought will be coded. This includes all text throughout the annual report, captions for photographs and graphs, and graphics that use text. Headings will not be coded unless they represent a complete thought. The only exception to the "complete thought" stipulation will be line items in Financial Statements which are by tradition presented in caption form. All line items in Financial Statements that use key words will be coded.

(D) INFORMATION THAT WILL NOT BE CODED

There is information in the annual and environmental reports that is presented in such a fashion that it generally does not represent a complete thought. Information of this type will, without exception, be excluded from coding. This includes:

- Table of contents;
- Glossaries; and
- Corporate directories. (This usually consists of a listing of directors, corporate officers, operating managers and public relations officers.)

There is also often information in the annual and environmental reports regarding the production of the report, e.g., "This report was printed on recycled paper." Information of this type will not be coded.

APPENDIX E**SUMMARY OF INTERVIEWS****CANADIAN PACIFIC FOREST PRODUCTS LIMITED
INTERVIEWS CONDUCTED ON SEPTEMBER 21, 1993**

{Interviews conducted with (1) Vice President, Environment and (2) Vice President, Communications and Governmental Affairs}

(1) Do you have any environmental executives?

The Company has had a Vice President, Environment since 1990.

(2) Do you have an environmental committee of the board of directors?

Yes, since 1992. The Committee is composed of 3 directors of the Company and the President/Chief Executive Officer.

(3) Do you have an environmental policy?

The Environmental Protection Policy was written in February 1990. In October 1992 it was revised and the name of policy was changed to Environmental Policy.

The environmental policy was developed by the Vice President, Environment in consultation with managers of operating units.

Although the Company adopted the environmental policy of the industry association as a member of the association, the Company felt it was important to develop its own policy.

(4) Do you use environmental audits?

The process of environmental auditing was begun in 1992. A. D. Little was retained to train employees for the environmental audit team and act as team leaders. Environmental audit team members are not employees at the location under their audit. Environmental audits to be repeated at each location every two years.

- (5) What is the process for preparing and who is your audience for annual reports?

The key individual responsible for preparing the annual report is the Vice President, Communications and Governmental Affairs. This individual works with the Finance Department to produce the annual report. The theme and format for the annual report are set by the Vice President, Communications and Governmental Affairs. The Finance Department is responsible for producing the Financial Statements and Management Discussion and Analysis (MD&A) sections of the annual report.

The Corporate Secretary is responsible for the Corporate Overview section (addresses and list of directors, etc.). The Vice President Communications and Governmental Affairs writes the Letter to Shareholders (which is reviewed and approved by the President) and Review of Operations (which is reviewed and approved by operations managers).

The environmental content in the annual report is provided by the Vice President, Environment.

The annual report is reviewed by external auditors and the Audit Committee. As a rule there is no substantive feedback from these parties.

The audience for the annual report is seen to be: shareholders, customers and employees.

- (6) Do you have an environmental report? If so, what is the process for preparing it and who is your audience?

The first environmental report was published in 1991 and took the form of a four page bulletin. This bulletin was part of an ongoing series of environmental bulletins which continues to be published four or five times a year. There was some resistance by some management groups to providing the information in the environmental report because of concerns of how it would be received in the marketplace. There was some concern that the information in the report would not reveal a perfect record.

However, the Vice President, Environment and Vice President, Communications and Governmental Affairs felt that the report was necessary and were able to produce it because they had the support of the President. A document more substantial than the four page bulletin was not provided because of the resistance against releasing the information.

The Company received positive feedback on the first environmental report. Therefore, for the second environmental report, the Vice President, Environment and the Vice President, Communications and Governmental Affairs had the necessary support throughout the Company to produce a full scale report in 1992.

The audience for the environmental report is seen as the public (through the media), employees, politicians, bureaucrats, customers, competitors and various associations.

The 1993 environmental report will be distributed automatically along with the 1993 annual report.

The process for developing the environmental report is managed by the Vice President Communications and Governmental Affairs and the Vice President, Environment. After conducting research and reviewing what others in the industry are doing, the Vice President Communications and Governmental Affairs will prepare an outline based on prior years and discuss it with the Vice President, Environment. An outline is agreed upon and approved by the President. Then the data collections begins. Some of the information is more easy to collect. For example some databases are already in place for the purposes of reporting to government. However, the Vice President, Communications and Governmental Affairs also looks for specific stories for the environmental report such as efforts at habitat protection.

The first environmental report in 1991 was written by the Vice President, Environment. An outside public relations firm was hired to write the second report. However, both the first and second draft produced by the firm did not reflect the Company's situation nor use appropriate terminology. Therefore, the Vice President, Environment and his immediate subordinate wrote much of the second report.

Plans are to have the 1993 report written initially by an outside writer. Then the Vice President, Environment will edit the draft. The Vice President Communications and Governmental Affairs will also make changes and then the environment managers in each facility will be contacted and asked for feedback on the draft. Changes suggested by the environmental managers will be incorporated into the draft. Then senior level managers will review the draft. Before publication, the report will be reviewed and approved by the President.

- (7) What is the process for preparing other Ontario Securities Commission filings?

The quarterly reports filed with the Ontario Securities Commission are prepared by the Vice President, Communications and Governmental Affairs and the Finance Department. The same format is used for each publication.

A section on the environmental status of the Company is provided as part of any prospectuses. This information would be written by the Vice President, Environment.

- (8) What is the process for preparing information releases and who is your audience?

Numerous information releases are prepared by the Vice President, Communications and Governmental Affairs. Information releases would include financial information, temporary shutdown of operations and key operational activities such as the opening of new operational sites.

Information is obtained from various sources throughout the Company depending on the nature of the information.

- (9) Have you contributed to trade journal articles? If so, what is the process for preparing such articles and who is your audience?

The Company has involvement with trade journals in Canada, the U.S and Europe. Many articles have been written about the Company. However, from time to time the Vice President, Communications and Governmental Affairs writes articles for submission to the trade journals. Also, individuals in operations will write technical papers for trade journals and/or for presentation at various industry or general environmental conferences and seminars.

- (10) Do you have brochures, educational material or employee newsletters? If so, what is the process for preparing such documents and who is your audience?

There are no brochures devoted to environmental matters. If the Company was in a better financial position, the Vice President, Communications and Governmental Affairs would like to develop more brochures for educational purposes.

However, there is a periodical bulletin produced four or five times a year. The bulletin, begun in 1990, is called "Environmentally Speaking" and covers general environmental

topics pertaining to the Company. The audience for this bulletin is customers, politicians, media, public and various associations.

The Vice President, Communications and Governmental Affairs began producing an employee newspaper/newsletter in 1991 that usually provides information regarding environmental matters in every issue. Articles from "Environmentally Speaking" are reproduced in the employee newsletter.

(11) Do you engage in advertising? If so, what is the process for preparing the advertising and who is your audience?

Environmentally-related advertising has been undertaken in the U.S. (the Company's largest market) trade journals since the end of 1991. However, this advertising campaign has been managed by the marketing department. The Vice President, Communications and Governmental Affairs was consulted beforehand. However this is not standard process with all advertising campaigns.

(12) What changes have happened in these procedures?

The biggest change in disclosure practice has been in the production of an environmental report, a Company newsletter (which includes environmental matters) and an environmental news bulletin that is published periodically.

There has been a change in the culture in the Company and a realization of the need to "tell it like it is." The environmental performance of the Company changed in the 1980's but these changes were not being communicated outside the Company.

(13) What changes do you expect will happen in these procedures?

No significant changes are anticipated. A 1993 environmental report will be produced. It is expected that there will not be much information on environmental performance in the annual report as this will be discussed fully in the environmental report. There is a desire not to duplicate information. The environmental report will be distributed automatically with the annual report.

In the future approval for the environmental report will be requested from middle level managers as well as upper level managers. This will ensure that management "buys in" to the report and will result in better input.

Outside firms have been asked to provide creative approaches to presenting the Company's annual report.

(14) What do you expect will happen with environmental disclosure in your industry in the future?

Hopefully, more and more companies in the industry will produce environmental reports. The industry has a bad reputation. However, environmental management practices have changed and we need to communicate this to the public.

It is likely that environmental audits will become mandatory before environmental reporting will become mandatory. There is currently a move to develop standards for environmental auditing. If the standards are developed it will provide a means to compare environmental performance between companies and over time.

The preference is for environmental reporting to remain voluntary. The industry will need to self-police in order to ensure environmental reporting remains voluntary.

(15) Where do you stand on the disclosure of "bad" news?

There is no choice but to provide full disclosure. The bad news has to be reported to the government. So, it is public knowledge anyway.

(16) What are the factors that have motivated your corporate environmental disclosure?

An environmental report was published by another company in the industry and the Company felt that they had an environmental record better than the company producing the environmental report. "If the other company was going to tell their story then our Company should too."

The Company was also getting positive feedback when questioned about its performance in small group and one-on-one settings and felt that it should therefore communicate using mass media. Even though the Company is losing money, the environmental report is a "must" and will continue to be produced.

Customers (especially European customers) were increasing their demands for information about the Company's environmental performance. "If we don't tell our customers what we are doing then they are going to believe Greenpeace."

Environmentalists accused the Company of not sharing information. "The more transparent we become, the easier our jobs will be."

The environmental report is a logical evolution of the Company wanting to become more transparent. "The whole environmental debate needs to be less emotional and more scientific."

The information was also needed for politicians for educational purposes. (Bureaucrats have familiarized themselves with the industry and the Company and therefore need updating but not educating.)

Motivation to disclose was not a reaction to legislation. The Company was reacting to various groups. Now it is proactive and telling the world what the Company is doing. One of the individuals interviewed felt that for all intents and purposes there are really two parts to Ontario. The southern part with the people who live in the cities and make up the environmental groups and don't have full knowledge of all the issues. Then there is the northern part with the logging and pulp and paper communities. The people in these northern communities make their living from the environment and partake in many recreational activities afforded by the great outdoors.

BRUNSWICK MINING AND SMELTING CORPORATION LIMITED
INTERVIEWS CONDUCTED ON NOVEMBER 19, 1993

{Interviews conducted with (1) President, (2) Director, Environment and (3) Director, Corporate Affairs.}

(1) Do you have any environmental executives?

The Company has a Director, Environment who reports directly to the President and provides a report to the Board on a quarterly basis. The Director, Environment also acts as an independent internal resource for the operating divisions which each have their own individual responsible for environmental matters. The position Director, Environment was created in August 1992. However, the first corporate office position for the environment was created in 1988 when the current Director, Environment was appointed Superintendent, Environmental Services.

(2) Do you have an environmental committee of the board of directors?

The Company does not have a separate environmental committee of the Board. Management has considered establishing an environmental committee, but has decided that it is not warranted. Given the extent of the Company's operations, it is possible to provide a comprehensive report with sufficient detail to the entire Board in 30 to 45 minutes on a quarterly basis and keep them apprised of environmental matters. Thus, the entire Board is advised of environmental matters and is responsible for environmental matters.

(3) Do you have an environmental policy?

Yes, the Board adopted an environmental policy in July 1992. This policy is very similar to the parent company's environmental policy. The Company has operated under the parent company's environmental policy since 1985.

The prime reason for adopting a company environmental policy (in addition to the parent company environmental policy) was to sensitize outside directors to the environmental policy and to receive their endorsement.

The President was responsible for adapting the parent company environmental policy to suit the philosophy of the Company.

(4) Do you use environmental audits?

The parent company has been performing environmental audits on all its operations, including the Company, since the mid 1980's. An environmental audit is performed every three to four years. (The parent company performs operational audits every year in one of the following four areas: environmental, emergency preparedness, occupational health and industrial hygiene.) One individual at the parent company coordinates the audit scheduling and plays an active role in the audit and the audit reporting process. The parent company audit program was developed with the assistance of A. D. Little. A. D. Little continues to assist with audits by training employees of the parent company and its subsidiaries in audit techniques and in acting as team leaders and reporting back to the parent company. A. D. Little also provides audit team members on occasion and has reviewed the conduct of an audit for the parent company.

Audit team members are composed almost entirely of individuals from the Company and from other subsidiaries of the parent company. At the end of each audit an audit report is produced. Post-audit reports are issued to the President of the Company as well as officials at the parent company. Action plan preparation and the implementation of audit recommendations are seen as critical steps and are closely monitored. There is also follow-up from the parent company on the implementation of the action plan.

(5) What is the process for preparing and who is your audience for annual reports?

The Company is owned 64% by the parent company and 20% by another single shareholder, leaving 16% of the shares widely held. (Twenty-five percent of the employees of the Company own shares in the Company.) Therefore, the two major shareholders, through the Board and other reporting functions, have substantially more access to information about the Company than is afforded by the annual report.

"The annual report is a tool to inform shareholders and the financial community so that they can draw meaningful conclusions about the Company." While the annual report is "designed in light of the shareholders" it also serves to inform other stakeholders. However, stakeholders such as the government are informed on a much more regular and timely basis. The annual report is not seen as a tool for communicating with government. "It is a weak platform for communicating with government." The Company operates in an environment whereby the officials of the Company have a good relationship with government officials and deal with them

directly on an informal basis. The annual report is not targeted as an employee communication vehicle either.

The Company had an environmental incident in the beginning of 1991 that resulted in corporate interaction with outside environmental interest groups. Interest groups do not make it a practice to communicate with the Company on an ongoing basis. The Company has taken the initiative in establishing contacts but would prefer more regular dialogue.

The annual report is the responsibility of the Director, Corporate Affairs. The Director, Corporate Affairs and the President determine the theme of the annual report for the year. The theme is kept consistent throughout the front end of the report (Non-Financial Statements, non-Management Discussion and Analysis sections). An outside firm is used to develop the theme and design of the annual report and handle production. The design of the annual report is approved by the President.

All writing of the report is done by company personnel. The President writes the President's Report to Shareholders and the non-financial (i.e., outlook) section of the Management Discussion and Analysis (MD&A). Each division is responsible for writing their own section of the Corporate Overview section and the Director, Environment is responsible for writing the section of the annual report dealing with the environment. The Financial Statements and the financial information in the MD&A are prepared by the Comptroller. Environmental information in the MD&A is written by the Director, Environment.

The Director, Corporate Affairs does not write the annual report but assembles and edits contributions prepared by various personnel in consultation with those staff. The President reviews and amends the document as necessary to ensure that he is satisfied with the information in the document and the consistency of the information in the document.

The Audit Committee reviews the financial components of the annual report while the entire annual report is reviewed by the external auditors and finally, approved by the Board.

The President feels that the annual report should make the corporation quite transparent, but he believes that the words must be chosen with care. Disclosure must be carefully managed to respond to the various uses and users of the annual report in a manner that communicates relevant information to each user while minimizing the potential for misunderstanding by others.

The President spends a substantial amount of time working on the annual report. He views it as an important document which imposes internal discipline. The exercise of preparing the annual report (and quarterly reports to the Board of Directors and shareholders) permit us to "take stock of what we are doing and where we are going."

Site restoration costs began to be included as a line item in the Financial Statements in the 1990 annual report. Each site is responsible for their own estimation of restoration costs. The Director, Environment assists them with the preparation of these estimates. Estimates are provided to the President and the Accounting Department. Specialist advice is provided by parent company staff and consulting engineers are used to develop detailed cost estimates.

Site restoration costs were estimated for internal purposes long before the CICA Handbook requirement for site restoration costs was established. When the CICA standard came out in 1991 site restoration costs were updated and they were re-evaluated again in 1993 in response to new developments.

(6) Do you have an environmental report? If so, what is the process for preparing it and who is your audience?

The Company does not have an environmental report, but the parent company produces an environmental report which includes information about the Company. The parent company approaches the Company for information to supplement data provided by the Company through the regular compliance reporting process. Once the parent company has prepared the environmental report, the Company has the opportunity to review the report and amend it if necessary. (The Company is also given the opportunity to review information about the Company that has been included by the parent in their annual report.)

The Company is contemplating a four or eight page environmental report to be written by the Director, Environment. The report would be a stand-alone document, but would also be inserted in all parent company environmental reports distributed by the Company. All employees of the Company received a copy of the parent company's 1991 environmental report. The objective is to make employees aware of the Company's environmental issues and performance and thereby make employees environmental ambassadors for the Company.

The Director, Corporate Affairs has no involvement with the parent company environmental report unless there is an item relating to an environmental matter external to operations.

(7) What is the process for preparing other Ontario Securities Commission filings?

The annual information form (AIF) is prepared in the same manner as the annual report. Each of the operating division managers prepare their section on operations, the Comptroller prepares the financial results and the MD&A prepared for the annual report is included. The Director, Environment provides a section on environmental matters for the AIF which is more comprehensive than the section in the annual report. The AIF will discuss technical, financial and regulatory issues surrounding corporate environmental performance. The President reviews the AIF for consistency and the AIF is also reviewed by the Audit Committee, external auditors and legal counsel for the parent company.

Quarterly reports are prepared by the Comptroller. The President will review and edit the report. The report is then submitted to the Board for approval.

The prime audience for Ontario Securities Commission filings is the investment community.

(8) What is the process for preparing information releases and who is your audience?

Almost all information releases are prepared by the Director, Corporate Affairs. Information releases are generally approved by the President prior to release. The Company does not limit its releases to material items. Both voluntary and material information releases are issued.

Environmental information releases are prepared by the Director, Environment in conjunction with operating personnel. Operating personnel usually prepare the first draft of the release which is then reviewed and amended by the Director, Environment. (News items about external environmental matters such as the bird sanctuary developed by the Company are generally prepared by the Director, Corporate Affairs.)

Depending on the issue, the Company may develop two releases for a particular item. One release may be aimed at the community (the province in which the Company operates) and the other release may be aimed at the industry. News releases are issued through various wire services and by faxes sent directly to contacts in the province.

Information releases about the Company may also be issued by the parent company. Media contact outside the province is generally initiated by the parent company.

- (9) Have you contributed to trade journal articles? If so, what is the process for preparing such articles and who is your audience?

The Company provides articles for trade journals and papers for scientific and technical journals. Whomever is closest to the issue will be responsible for preparing the article, i.e., operations personnel or the Director, Environment.

- (10) Do you have brochures, educational material or employee newsletters? If so, what is the process for preparing such documents and who is your audience?

The Company prepares a variety of brochures. Some are educational brochures which are written at a grade 6 level to explain operations to students and visitors. Some of them have been written targeting the provincial community as the audience. One brochure was distributed as an insert in the local papers. Another brochure was prepared to inform the public of relevant issues prior to a public meeting about the re-opening of one of the Company's operating sites. The amount of environmental information content varies from brochure to brochure.

The Company also produces an employee newsletter. Up until fall 1993, each operating division produced their own newsletter. However, one of the division publications was adopted for use throughout all operating divisions of the Company. The newsletter does not have a routine environmental disclosure component. Rather, any environmental information is included on an as-needed basis.

Literacy and numeracy skills vary considerably within the workforce. Most employee information is disseminated through formal or informal training programs rather than written material.

- (11) Do you engage in advertising? If so, what is the process for preparing the advertising and who is your audience?

Advertising is normally limited to the local paper and may relate, for example, to the bird sanctuary developed by the Company.

- (12) What changes have happened in these procedures?

Disclosure levels have increased over the last five years. Site restoration costs are a new Financial Statement item

that have been recorded since 1990. Within the last five years the Company has provided more information about environmental performance in the annual report. Also, the parent company environmental report, which includes information about the Company, was instituted for 1991.

(13) What changes do you expect will happen in these procedures?

The current format of the annual report should remain fairly consistent, but the Company will respond to new issues or developments which may cause the format to change. There is not likely going to be a significant change in voluntary disclosure in the near future as there is no perceived need.

The President feels that the Company is in a business that impacts the environment and therefore the environment will always be an issue, but "the current emphasis on the environment is faddish. As time marches on the environment will lose its attraction." The environment is a key aspect of the business because the Company can operate only with the consent of the public, but in future the environment will be on a level that is more consistent with other important aspects of operations. "We are not in the business of being environmental winners or environmental purists but we can't afford not to do well in environmental matters." The potential business impact is simply too great.

(14) What do you expect will happen with environmental disclosure in your industry in the future?

With regard to the use of an independent opinion on the environmental report, "if it doesn't add any value then don't bother." The Company is not in favour of external auditing of environmental reports because it wouldn't change the information being reported and therefore would not add any value at this time.

The parent company's environmental reports disclose environmental problems as well as achievements and have been well received as a result. If the credibility of environmental information becomes an issue in the future then an independent opinion could add value.

Environmental disclosure needs to remain on a voluntary basis. If the disclosure becomes regulated then it will become inflexible and users will likely become inundated with information. However, some voluntary standardization

to allow comparability over time and between companies would be desirable.

(15) Where do you stand on the disclosure of "bad" news?

All of our monitoring data is sent to the government. Therefore, any member of the public has access to this information. We would rather deal with the public directly and answer any questions than have them obtain the information from the government.

The government is apprised immediately of any "bad news" regardless of whether or not the item is material. The public is advised of all material "bad news" items. Each time the Company is out of compliance, the government is notified. However, public disclosure may not be warranted if there is no environmental impact or if environmental and financial impact is minimal.

(16) What are the factors that have motivated your corporate environmental disclosure?

The fundamental purpose of the annual report is to provide information that investors need to decide, on a rational basis, whether to buy, sell or hold shares in the Company. The goal is to "provide information to people that is relevant to their needs." The annual report is designed in light of shareholders and the environmental content is predicated on the assumption that anyone interested enough to read the annual report will be interested in environmental aspects as well as business aspects of the Company, given the current level of public interest and the potential business impacts.

Much of the growth in environmental disclosure in general is due to the activity and needs of various interest groups. Wherever practical the Company would prefer to identify and respond to the specific interests and information needs of those groups.

SCURRY-RAINBOW OIL LIMITED
INTERVIEWS CONDUCTED ON OCTOBER 22, 1993

{Interviews conducted with (1) Manager, Corporate Communications; and (2) Manager, Safety, Environment & Insurance. The Manager, Safety, Environment & Insurance is a Certified Management Accountant.}

[It should be noted that the Company has no employees. Its affairs are managed by the parent which in recent years has held 88.1% ownership in the Company. At the time of the interview there was an offer from the parent to buy the balance of ownership from outside shareholders. There is no differentiation in management practices between the Company and its parent.]

(1) Do you have any environmental executives?

No, the Manager, Safety, Environment & Insurance reports to the Vice President, Corporate who in turn reports to the Chief Executive Officer.

(2) Do you have an environmental committee of the board of directors?

In 1989 a Safety and Environment Committee of the Board of Directors of the parent was established. At the same time the subsidiary's Audit Committee expanded its mandate to include safety and environment.

(3) Do you have an environmental policy?

The parent company developed an environmental policy in 1978 which would have been applicable to the Company. Based on an external consultants advice in 1990 the environmental policy was combined with the safety policy resulting in a single safety and environment corporate policy.

The policy is a one page document. However, it is supported by two detailed manuals. One for the safety program and one for the environmental management system.

(4) Do you use environmental audits?

At the end of 1991 the Company developed a formal environmental management system. One component of this system is environmental auditing. Environmental auditing is done for

two purposes: (1) site assessments to determine the nature of any environmental liability; and (2) monitor corporate and regulatory compliance of its operations.

Compliance audits of properties were begun in 1992. It is expected that all sites will be audited by the end of 1995. Once all sites have been audited the audit cycle will begin again with frequency of auditing based on a risk assessment of each property.

Initially, an external consultant was hired to develop audit protocol and act as a team leader on the first audit.

An individual from the site under audit would assist with the audit but would not write the report.

"Environmental auditing in the Company is really in a development stage. We have found it to be a very complex process."

(5) What is the process for preparing and who is your audience for annual reports?

The Manager, Corporate Communications, who reports to the Vice President Law & General Counsel for the parent company, is responsible for co-ordination and publication of the annual report.

The theme for any given annual report is developed by Corporate Communications and then approved by the Executive Committee before the draft of the report is written.

The Manager, Corporate Communications obtains information for the annual report through an informal communications network. Also, major departments are solicited for information. An in-house writer will draft the Report to Shareholders and the Operating Report. The Finance Group will provide the Financial Statements, Management Discussion and Analysis, and Financial Review sections of the annual report.

Once a draft is prepared it is reviewed by a Review Committee comprised of management representatives from each functional area as well as by the Executive Committee. Additional drafts and additional reviews are undertaken until a consensus is reached on the document. Normally there are several review cycles before the annual report is approved. The Internal Audit department and the external auditors provide ongoing reviews. Finally, the annual report is reviewed by the Audit Committee of the Board and approved by the Board of Directors before it is printed.

The Internal Audit Department gets a copy of all versions of the annual report and is responsible for signing off on the accuracy of the numbers and the facts.

The Safety, Environment & Insurance Group prepare an estimate of site restoration costs and works with Finance on developing the numbers which will be used for Financial Statement purposes.

Site restoration costs were introduced in the annual report in 1990, a year ahead of the requirement mandated by the Canadian Institute of Chartered Accountants. This cost was recognized in the Financial Statements earlier than required because of corporate philosophy and a desire to "do it right."

The audience for the annual report is shareholders and analysts.

Because of the nature of its operations, the Company does not have as much environmental impact as other companies in the industry. The Company is a low-key company and has never been targeted by environmental groups.

However, environmental interest groups are taking a little more interest in the industry as a whole.

The Company communicates with the communities in which it operates on a personal basis. Each communication activity is site specific and situation specific. For example, when starting operations in a community, or applying for a license renewal, the community may be notified through town hall meetings. Residents in the immediate vicinity of a plant are contacted on a one-on-one basis in advance of plant development or as part of an application for licence renewal. There is no general written communication prepared for the communities in which the Company operates.

(6) Do you have an environmental report? If so, what is the process for preparing it and who is your audience?

There is currently no environmental report. There are no plans to produce an environmental report in the future.

(7) What is the process for preparing other Ontario Securities Commission filings?

The Vice President Law & General Counsel and the Corporate Secretary (who reports to the Vice President Law) are responsible for compiling, writing and filing all documents

required by the Ontario Securities Commission (OSC). They will work with Corporate Communications and Finance to obtain the appropriate information for the respective filings.

- (8) What is the process for preparing information releases and who is your audience?

All information releases are prepared by the Manager, Corporate Communications. The Company sees itself as a conservative company and will not release information of a speculative nature.

"We do not promote ourselves with regard to our environmental performance."

Information releases are limited to quarterly earnings announcements and any significant events, such as property transactions, that are material.

Corporate disclosure is limited to regulatory requirements, additional information in the annual report and information releases. The Company sees itself as conservative and wishes to take a low key approach to disclosure.

- (9) Have you contributed to trade journal articles? If so, what is the process for preparing such articles and who is your audience?

The Company does not contribute to trade journals.

- (10) Do you have brochures, educational material or employee newsletters? If so, what is the process for preparing such documents and who is your audience?

The Company does not prepare brochures or educational material specific to environmental issues. Broad environmental issues or Company environmental projects are profiled in the Company's monthly employee newsletter.

- (11) Do you engage in advertising? If so, what is the process for preparing the advertising and who is your audience?

The Company does no advertising.

(12) What changes have happened in these procedures?

Environmental disclosure has increased in recent years because of the need to account for site restoration costs and the higher profile that the environment has in reporting to shareholders.

(13) What changes do you expect will happen in these procedures?

There are no anticipated changes in the environmental disclosure provided by the Company, based on the current ownership level, except for a likely increase in the quantity of disclosure as the Company's environmental management system matures. If the parent company is successful in acquiring 100% ownership of the Company, the Company will, of course, become private and therefore will not be subject to the same disclosure requirements.

(14) What do you expect will happen with environmental disclosure in your industry in the future?

We have no comments or speculation on what might happen to environmental disclosure in industry. However, it is not likely that companies will begin to disclose the results of their internal environmental audits.

With regard to environmental issues in general: "Our industry and government have a much better relationship in this province than is the case in Ontario. We are not as adversarial. In our province, government and industry collaborate to find solutions to environmental issues. Also, the industry is recognized as being a key economic factor for the province."

(15) Where do you stand on the disclosure of "bad" news?

Material items would be disclosed. If there were any site specific problems, the town council and immediate community would be advised.

Under the new legislation that became effective on September 1, 1993 all information is available to the public.

(16) What are the factors that have motivated your corporate environmental disclosure?

The factors that motivate our current environmental disclosure are: the Canadian Institute of Chartered Accountants requirement to record and disclose site restoration costs; good business practices; and good corporate citizenship.

PRAIRIE OIL ROYALTIES COMPANY, LTD.
INTERVIEWS CONDUCTED ON OCTOBER 21 and 22, 1993

{Interviews conducted with (1) Manager, Investor Relations, a Chartered Accountant; (2) Director, Safety, Environment & Community Affairs; and (3) Vice President, Comptroller, a Chartered Accountant.}

[It should be noted that the Company has no employees. Its affairs are managed by the parent company which has more than two-thirds ownership of the Company. In recent years the parent has owned 74.4% of the Company. However, in early 1993 this was reduced to 66%. There is no differentiation in management practices between the Company and the parent.]

(1) Do you have any environmental executives?

There are no environmental positions at the executive level. The Director, Safety, Environment & Community Affairs reports to a Vice President who is not directly responsible for operations.

(2) Do you have an environmental committee of the board of directors?

There is no environmental committee of the Board of Directors. However, there is an Environmental Management Committee which is chaired by the President of the Company. Through the President there is direct access to the Board of Directors.

The Board of Directors has discussed the possibility of adding an environmental committee of the Board. However, at this point it appears as though an environmental committee will not be added. The thinking is that an environmental committee will be seen to take away the general responsibility of the other Directors. All the Directors should be responsible. Also, the presence of a committee may be seen to remove the responsibility of the other executives and managers and this should not be the case.

(3) Do you have an environmental policy?

An industry association environmental policy was developed in 1987 or 1988 and that policy was then adopted by the Company.

(4) Do you use environmental audits?

Environmental audits are in use. Facilities are scheduled to be audited once every three years.

The audit team is made up of company personnel: an individual from the Environment, Safety & Community Affairs group who acts as team leader on all audits; an individual from safety; an operations individual from outside the district of the facility under audit and personnel from the site being audited. Team members who are from the location under audit act as guides.

Reports from audits are reviewed by the Environmental Audit Committee which is chaired by the Vice President, Productions.

(5) What is the process for preparing and who is your audience for annual reports?

The Manager, Investor Relations is responsible for coordinating and producing the annual report. The Financial Reporting Department will provide the Financial Statements and Management Discussion and Analysis portions of the annual report. The Manager, Investor Relations writes the Letter to Shareholders, and Corporate Overview sections of the annual report.

The annual report is developed as more of a bottom up process. The Manager, Investor Relations gets information from the financial and various operational groups through the internal reporting process throughout the year. Information for the annual report is also derived from informal communication networks. The Manager, Investor Relations tries to keep up to speed on everything, everywhere throughout the organization.

Once the Manager, Investor Relations has assembled what he thinks is a fair and comprehensive document, copies are distributed to the President and some other senior executives for review and comment. Then the document will be expanded, reduced and/or corrected depending upon the decisions of the senior executives. This process of senior executive review and changes to the document is repeated until a consensus is reached. Then the CEO will approve the document.

Site restoration costs were included in the annual report for the first time in 1991. Nineteen ninety-one was also the first year that the environment was mentioned in the annual report.

There are no plans for changing the level of disclosure in the annual from that produced in 1991 and 1992.

The audience for the annual report are essentially the following parties: shareholders; the investment community (prospective shareholders); the government in Canada; schools and libraries; and the marketing group who may use the document as a marketing device.

Because of the nature of its operations, the Company does not have as much environmental impact as other companies in the industry. Environmental interest groups have limited direct contact with the Company.

The Company is a member of an industry association. The industry association, the provincial government and the environmental interest groups make a concerted effort to take a collaborative approach to environmental issues through a round table type of forum.

The Company, through the community affairs section of the Environment, Safety & Community Affairs group, places a great deal of emphasis on communicating with the public in the community in which it operates. However, this is done using a highly personalized, situation specific approach that does not involve the use of a printed, mass communication type document.

"We go the extra 10 miles to make the community happy." This has been voluntary in the past. However, under new provincial legislation effective September 1, 1993 this community interaction has become mandatory.

(6) Do you have an environmental report? If so, what is the process for preparing it and who is your audience?

The Company does not have an external environmental report for the general public. There are no plans to produce such an environmental report. The only contact that the Manager, Investor Relations has from special interest groups or the public regarding environmental matters is from ethical investment fund managers. When these managers contact the Company it is usually to request the Manager, Investor Relations to complete a questionnaire regarding the environmental performance of the Company.

- (7) What is the process for preparing other Ontario Securities Commission filings?

All Ontario Securities Commission (OSC) filings are prepared in a manner similar to the annual report. The Manager, Investor Relations gathers the information from the appropriate departments, especially the Finance Department, and then seeks senior management approval regarding the numbers and the content of the regulatory filings.

- (8) What is the process for preparing information releases and who is your audience?

Information releases are prepared by the Manager, Investor Relations. Information releases are prepared primarily for shareholders and the investment community. In 1991 there was only one press release in addition to the four releases for earnings announcements.

Given that the ownership percentage held by the parent has decreased it is likely that there will be a few more information releases in the future. For example, it is likely that there will be releases provided on forecast and budgeting figures.

However, an ongoing philosophy of the Company limits press releases to material events that will be of significant interest to shareholders.

- (9) Have you contributed to trade journal articles? If so, what is the process for preparing such articles and who is your audience?

The Company does not contribute to trade journals.

- (10) Do you have brochures, educational material or employee newsletters? If so, what is the process for preparing such documents and who is your audience?

The Company does not prepare brochures or educational material but does publish a quarterly employee magazine. This is produced by an on-staff "writer/researcher", who reports to the Manager, Investor Relations.

(11) Do you engage in advertising? If so, what is the process for preparing the advertising and who is your audience?

The Company does not advertise. The industry association has advertised in an attempt to change public perception about the industry. However, the conclusion was that the advertising had no impact.

(12) What changes have happened in these procedures?

The only significant change in recent years has been the introduction of disclosure relating to site restoration costs as required by the Canadian Institute of Chartered Accountants.

(13) What changes do you expect will happen in these procedures?

Because the ownership percentage of the Company held by the parent which manages the Company has been reduced, it is likely that there will be a few more press releases issued in the future.

(14) What do you expect will happen with environmental disclosure in your industry in the future?

We have no comments or speculation on what might happen to environmental disclosure in the industry. However, it is unlikely that companies will disclose the results of their internal environmental audits.

"The Company does not have much need to produce environmental disclosure therefore there shouldn't be much change in disclosure practices in the future. For example, nothing has happened so far in 1993 to cause us to comment on the environment at any great length."

(15) Where do you stand on the disclosure of "bad" news?

Anything of a significant nature will hit the press. Then we would put out a press release to discuss the Company's response.

Because of government regulation, the government is already fully aware of all "bad" news.

The Company maintains a close relationship with the communities in which it operates. Because of the nature of the Company's operations this relationship is managed through door-to-door visitation and town hall meetings. This is carried out in neighbourhoods in advance of the development of operations or as part of the application for an operating licence renewal, or in advance of the decommissioning of an operational site. The Company also makes yearly contact with the public in the immediate vicinity of operations to update emergency response plans and make these individuals aware of these plans.

(16) What are the factors that have motivated your corporate environmental disclosure?

We want to reassure the shareholders and the public in our annual report that we are cognizant of our environmental responsibility and we are acting upon it.

"We don't believe in motherhood statements. You've got to credit people with enough intelligence to see through that kind of disclosure."

INVESTMENT MANAGEMENT COMPANY A
INTERVIEW CONDUCTED ON NOVEMBER 12, 1993

{Interview conducted with Assistant Controller. The Assistant Controller is a Chartered Accountant.}

(1) Do you have any environmental executives?

The Company is not a resource based company and therefore does not have any environmental impact of note.

(2) Do you have an environmental committee of the board of directors?

The Company is not a resource based company and therefore does not have any environmental impact of note.

(3) Do you have an environmental policy?

The Company is not a resource based company and therefore does not have any environmental impact of note.

(4) Do you use environmental audits?

The Company is not a resource based company and therefore does not have any environmental impact of note.

(5) What is the process for preparing and who is your audience for annual reports?

The Assistant Controller is responsible for the contents of the annual report. He writes the first draft of the Management Discussion and Analysis and with the assistance of an outside public relations consultant writes the Report to Shareholders. The Financial Statements and Notes are prepared by the Financial Reporting Group.

The Company has a December 31 year end. The first draft of the Report to Shareholders is usually ready by year end whereas the first draft of the Management Discussion and Analysis (MD&A) is usually ready by February 28th. The Report to Shareholders and MD&A is reviewed and amended as required by the following parties in succession: external auditors, Chief Financial Officer, President, Audit Committee and Board of Directors. The content of the MD&A

section of the annual report is treated with the same degree of rigour as the Financial Statements.

Because the Company issues prospectuses from time to time it is necessary to develop a prospectus quality MD&A in the annual report so that it can be included in a prospectus by way of reference to the annual report. Thus, the Company can issue a prospectus say 3 months after the issuance of the annual report and be able to refer to the MD&A from the annual report in the prospectus without any amendments. The external auditors perform the necessary audit work on the MD&A before it is produced in the annual report to ensure that they can provide their comfort letter on a prospectus without any additional work.

The Company holds an interest in several key subsidiaries. Care is taken to ensure that the MD&A presented by the Company does not contain any new information that is not present in the MD&A of the subsidiaries. To this end the Assistant Controller may provide some guidance to the subsidiaries on the preparation of their MD&As so that the Company can provide the information it sees as necessary.

Once the audited Financial Statements from all subsidiaries are available the annual report is compiled. The actual design of the report is conservative and changes little from year to year. For example, the Report to Shareholders is always four pages in length.

As part of the process of preparing the annual report, the Assistant Controller does a survey of other annual reports in the industry to ensure that the Company is up to date with the latest financial reporting techniques and practices. The Assistant Controller is also responsible for keeping senior management up to date on trends in reporting for the industry.

The audience for the annual report is seen as the following:

- creditors, existing and potential;
- existing shareholders;
- potential shareholders;
- analysts;
- regulators;
- employees of the parent company and the subsidiaries;
- potential investees;
- general public; and
- schools.

In general, the Assistant Controller feels that there needs to be one person (someone in the financial group) responsible for the entire annual report in order to have consistency throughout the document. He also feels that a

good annual report is produced as a result of significant review and involvement by several parties.

- (6) Do you have an environmental report? If so, what is the process for preparing it and who is your audience?

The Company is not a resource based company and therefore does not have any environmental impact of note.

- (7) What is the process for preparing other Ontario Securities Commission filings?

Other Ontario Securities Commission (OSC) filings such as the annual information form (AIF) and quarterly Financial Statements are prepared by the Corporate Secretary's Group and the Assistant Controller who liaises between the Controller and internal legal counsel. (The ultimate responsibility for the filings rests with internal legal counsel.)

Legal counsel will review the first draft of the AIF and quarterly reports before it is reviewed by any other parties.

The AIF is a very substantial document as it contains financial information on each entity in which the Company has an ultimate interest. Therefore much of the preparation of the AIF entails gathering information from subsidiary companies.

The AIF and quarterly Financial Statements are reviewed and amended as necessary by the following parties in succession: external auditors, Chief Financial Officer, President, Audit Committee and Board of Directors.

The audience for the quarterly reports is shareholders, who each receive a copy. The audience for the AIF is primarily the more sophisticated investors who are sent the AIF on request. The AIF is geared for the use of Canadian shareholders and investors.

- (8) What is the process for preparing information releases and who is your audience?

Internal legal counsel prepares all press releases. Financial information in the press releases is checked by the Financial Group before the press release is issued. Press releases are issued to report on quarterly earnings. Also, as required by securities regulation, any material

change items are also disclosed to the public by way of press release.

Press releases are dispersed by way of wire service. Also, paper copies of press releases are faxed to analysts.

The Company provides only those disclosure documents that are required by regulation. However, within the required documents the Company includes certain voluntary information. All disclosure documents produced by the Company with the exception of information releases issued between quarterly reports go through the same review and revision procedure with the following parties in succession: external auditors, Chief Financial Officer, President, Audit Committee and Board of Directors.

(9) Have you contributed to trade journal articles? If so, what is the process for preparing such articles and who is your audience?

The Company does not contribute to trade journal articles.

(10) Do you have brochures, educational material or employee newsletters? If so, what is the process for preparing such documents and who is your audience?

The Company does not prepare or provide brochures or educational material.

(11) Do you engage in advertising? If so, what is the process for preparing the advertising and who is your audience?

The Company does not undertake any advertising.

(12) What changes have happened in these procedures?

There have been two key changes that have affected disclosure practices. The first has been the increase in regulatory requirements for disclosure, such as the requirement to provide MD&A disclosure. The second change relates to a specific change in generally accepted accounting principles as set out by the CICA Handbook.

This change in GAAP requirements necessitated significant extra consideration in 1991 and 1992 as to how disclosure could be appropriately handled so as to satisfy both what the Company felt was the best disclosure and at the same

time adhere to the CICA Handbook. The changes made in disclosure were a result of discussions with many internal and external sources. The changes in the 1992 annual report also resulted from increased involvement of the President in the writing of the Report to Shareholders and the MD&A.

The Company is concerned about the nature of their disclosure in relation to this matter and has surveyed analysts before and after the release of their annual reports in order to determine if any additional changes in disclosure practices are warranted.

(13) What changes do you expect will happen in these procedures?

Changes will not be significant. There may some additional voluntary disclosure provided within regulatory filings.

(14) What do you expect will happen with environmental disclosure in your industry in the future?

In general, environmental disclosure will increase based on factors of regulatory requirements and materiality.

(15) Where do you stand on the disclosure of "bad" news?

The key to dealing with bad news is, "don't try to downplay it." For example, one of the Company's subsidiaries underwent a restructuring which was a significant expense for the subsidiary. This restructuring was mentioned in the third paragraph of the Report to Shareholders rather than being buried in text elsewhere or even overlooked altogether.

"Even if you don't acknowledge the bad news the market will do it for you anyway." The Company believes that honesty and integrity are important when reporting to shareholders.

(16) What are the factors that have motivated your corporate environmental disclosure?

There are three factors that motivate corporate disclosure:

- (1) Regulatory (securities commissions) requirements;
- (2) The specific change that occurred in CICA financial reporting recommendations; and
- (3) A changing focus on net asset value as a criteria used by analysts to evaluate current and future share price.

**INVESTMENT MANAGEMENT COMPANY B
INTERVIEW CONDUCTED ON OCTOBER 26, 1993**

{Interview conducted with Secretary-Treasurer who is a chartered accountant.}

(1) Do you have any environmental executives?

The Company is not a resource based company and therefore does not have any environmental impact of note.

(2) Do you have an environmental committee of the board of directors?

The Company is not a resource based company and therefore does not have any environmental impact of note.

(3) Do you have an environmental policy?

The Company is not a resource based company and therefore does not have any environmental impact of note.

(4) Do you use environmental audits?

The Company is not a resource based company and therefore does not have any environmental impact of note.

(5) What is the process for preparing and who is your audience for annual reports?

The annual reports are coordinated by the Secretary-Treasurer. Annual reports have been and will likely continue to be short (about 12 pages) and devoid of colour or photographs. The 1992 annual report had a graph in it which was the first time a graph had been presented in the annual report. Much of the information in the annual report consists of information required for statutory obligations.

The President's report and the Management Discussion and Analysis is written by the President and reviewed by other members of management before being presented to the auditors and the Directors for their comments.

Financial Statements, Notes to the Financial Statements, statistical information and corporate information is prepared by the Secretary-Treasurer and others. Much of

this information is produced on a weekly or monthly basis by the Accounting Department.

Once the annual report is drafted it is amended, if required, after review by the following parties in succession: external auditor, audit committee and directors. The directors will provide the final approval.

Current shareholders are seen as the audience for the annual report. Prospective shareholders sometimes make direct enquiries to the Company and request more information if they wish it. Often annual reports and information circulars are sent.

Additional information, particularly regarding net asset values and returns on investment, was provided in both the 1991 and 1992 annual report to more clearly demonstrate to shareholders the value of their shares. This information was provided partly in response to an unsuccessful takeover bid launched by another company.

(6) Do you have an environmental report? If so, what is the process for preparing it and who is your audience?

The Company is not a resource based company and therefore does not have any environmental impact of note.

(7) What is the process for preparing other Ontario Securities Commission filings?

Ontario Securities (OSC) filings are prepared by the Secretary-Treasurer. Information is largely limited to statutory requirements. However, quarterly reports have a section titled 'Management Comment' which was added in 1992. The Management Comment is written by the President and reviewed by other members of management.

The quarterly report is sent to shareholders and assorted parties on a short mailing list.

There is a certain frustration with completing the Annual Information Form (AIF) for the OSC in that the nature of the Company's activities does not lend itself to the format of the AIF. The AIF is essentially prepared to meet statutory requirements. There have been very limited requests for the AIF from other parties.

In connection with the unsuccessful takeover bid the Company's lawyers prepared certain necessary OSC filings on behalf of the Company. Also the lawyers reviewed the annual

report and information circular for 1992 prior to finalization.

- (8) What is the process for preparing information releases and who is your audience?

The only "routine" information release that the Company prepares is a report of net asset value per share. This brief report is provided on a monthly basis. (In 1992 it was provided on a weekly basis but this has since reverted back to a monthly basis.) This information release is not provided over a wire service. Rather it is provided directly to a few newspapers and assorted parties on a short mailing list. Since November 1993, net asset values per share are being released weekly to two Canadian business newspapers and in the U.S.

- (9) Have you contributed to trade journal articles? If so, what is the process for preparing such articles and who is your audience?

The Company does not contribute to trade journals.

- (10) Do you have brochures, educational material or employee newsletters? If so, what is the process for preparing such documents and who is your audience?

The Company does not develop any material of this nature.

- (11) Do you engage in advertising? If so, what is the process for preparing the advertising and who is your audience?

The Company does not undertake any advertising except for quarterly dividend announcements.

- (12) What changes have happened in these procedures?

Voluntary disclosure has increased in recent years. This is mostly limited to statistical information on share value and limited information on corporate activity and portfolio holdings. An unsuccessful takeover bid launched by another company may have had some impact on expanding information in the 1992 annual report.

This material was developed after looking at what other companies in the industry were doing.

Of course, the regulatory requirement to provide Management Discussion and Analysis has also served to increase the disclosure provided by the Company.

(13) What changes do you expect will happen in these procedures?

There may be more information on corporate activity, share value and performance.

(14) What do you expect will happen with environmental disclosure in your industry in the future?

The Company is not a resource based company and therefore does not have any environmental impact of note.

In general, it is expected that disclosure will expand on both a voluntary and regulatory basis. "We want to generate more interest in our Company."

The President "leans toward 'selling' the Company and getting more interest in the Company."

(15) Where do you stand on the disclosure of "bad" news?

"We don't have anything to hide." In any case, poor portfolio performance or declining net asset value can not be hidden.

(16) What are the factors that have motivated your corporate environmental disclosure?

The Company is not a resource based company and therefore does not have any environmental impact of note.

In general, the Company is motivated to provide information to shareholders and is mindful of its duty to keep shareholders and the general public informed.

MINING COMPANY A
INTERVIEWS CONDUCTED ON OCTOBER 29, 1993

{Interviews conducted with (1) Controller and Secretary; and (2) Manager, Environmental Affairs. The Controller and Secretary is a Certified General Accountant.}

(1) Do you have any environmental executives?

The Manager, Environmental Affairs reports directly to the Vice President Operations and the President.

(2) Do you have an environmental committee of the board of directors?

There is no environmental committee of the Board of Directors. The Company has a Board of Directors made up of eight members. A statement pertaining to environmental matters is routinely presented to the entire Board of Directors.

(3) Do you have an environmental policy?

The Company, as a subsidiary, adopted the environmental policy of its parent (which held a 55.9% interest in the Company in March 1992). As well, in 1990, the Board of Directors formally adopted the environmental policy set out by the Mining Association of Canada.

"As a company we adhere to our environmental policy regardless of where we operate."

(4) Do you use environmental audits?

All operating sites are audited on an annual basis. Care and maintenance sites are audited on a bi-annual basis. Audits are done to ensure that sites are in compliance with regulation and to ensure best management practices.

Initially, environmental audits were done by external consultants. Now, audit personnel are obtained from the parent organization. Audits are done in teams of three by operations personnel who are not employed at the site under audit.

- (5) What is the process for preparing and who is your audience for annual reports?

The Controller and Secretary is essentially responsible for determining what information will go in the annual report and for drafting and coordinating the annual report.

In 1990 the Company began adding information on environmental affairs. Otherwise, environmental disclosure in the annual report has been limited to information on site restoration costs.

Even though the CICA requirement to accrue for site restoration costs was not mandatory until 1991, the Company began accruing for such costs prior to 1986 (at the same time one of their major sites was put on a care and maintenance basis). This was done because the Company realized that the liability was there and they began providing for it as a matter of course.

Management prepares the annual report. The Audit Committee reviews the Financial Statements and the Management Discussion and Analysis. The full Board approves the Financial Statements and the Management Discussion and Analysis.

The audience for the annual report is current shareholders and potential investors. The government is not specifically targeted as an audience for the annual report. The Manager, Environmental Affairs discusses environmental matters with government officials through meetings and written reports.

- (6) Do you have an environmental report? If so, what is the process for preparing it and who is your audience?

The Company does not have an environmental report and is not currently planning one.

- (7) What is the process for preparing other Ontario Securities Commission filings?

Other Ontario Securities Commission (OSC) filings such as the annual information form, press releases about material items, share issuance documents and quarterly reports are prepared by management.

The audience for these other filings is current and prospective shareholders. The annual information form is essentially prepared only for the benefit of the OSC as there are very few additional requests for this document.

- (8) What is the process for preparing information releases and who is your audience?

Information releases are prepared by management. The subject matter of these releases is financial results and any material items.

The audience for press releases is the general public, current investors and potential investors. Legal counsel for the Company may get involved with information releases to ensure that material items are reported and that they are reported in an expedient manner.

The Company provides no additional disclosure other than the annual report, other OSC filings and information releases.

- (9) Have you contributed to trade journal articles? If so, what is the process for preparing such articles and who is your audience?

The Company has not recently contributed articles to trade journals.

- (10) Do you have brochures, educational material or employee newsletters? If so, what is the process for preparing such documents and who is your audience?

The Company has not recently prepared brochures or related material.

- (11) Do you engage in advertising? If so, what is the process for preparing the advertising and who is your audience?

The Company does not currently undertake any advertising.

- (12) What changes have happened in these procedures?

"What we are doing in the annual report hasn't changed too much." Since 1986 the Company has been disclosing site restoration costs in its Financial Statements. Discussion about environmental affairs began to be provided in 1990.

"Management are more sensitive to disclosure now because of OSC requirements which are forcing companies into increased disclosure."

(13) What changes do you expect will happen in these procedures?

There are no plans for any significant changes to current disclosure practices.

(14) What do you expect will happen with environmental disclosure in your industry in the future?

There will be more environmental disclosure in the future. The smaller companies will likely provide more environmental disclosure in their annual reports. The larger companies will likely provide stand-alone environmental reports.

(15) Where do you stand on the disclosure of "bad" news?

Current OSC requirements dictate that any information that may have a material impact on the stock has to be disclosed, good or bad.

(16) What are the factors that have motivated your corporate environmental disclosure?

The reason we have an environmental review in our annual report is because of the interest of the general public and our investors in receiving this type of information.

PULP AND PAPER COMPANY A
INTERVIEWS CONDUCTED ON OCTOBER 14, 1993

{Interviews conducted with (i) Vice President, Environmental Affairs; (ii) Manager, Community and Government Affairs; and (iii) Manager, Investor Relations}

(1) Do you have any environmental executives?

A corporate position titled Vice President Environmental Affairs was created in 1992. Prior to that the position title was Director of Environmental Affairs. The position Vice President Engineering and Environment was part of one of our business units. Another unit had a Manager of Environmental Affairs. With restructuring in 1993 all of these positions are now combined into the one corporate position.

(2) Do you have an environmental committee of the board of directors?

The Board made a conscious decision not to establish an environmental committee but rather make the entire Board responsible for environmental matters.

(3) Do you have an environmental policy?

The Forest Management Policy was produced in 1985. This policy was developed by a large group of foresters both inside and outside the organization. The Environmental Policy of the Company was produced in 1990. This policy was developed by a management committee established by the President.

The Company is in the process of finalizing a corporate environmental mission statement. This document will be the distillation of the unique environmental mission statements created by each of the operational units.

(4) Do you use environmental audits?

Full-scale audit of facilities was begun mid-way through 1991. An Arthur D. Little course was used to train employees. In 1992 all facilities were audited by employees external to the site in question. In 1993 an outside consultant was hired to act as audit team leader and write reports. The change in process was introduced to improve

independence and objectivity. The plan is to audit every facility every year.

- (5) What is the process for preparing and who is your audience for annual reports?

The Manager, Investor Relations is responsible for coordinating the annual report. It is the President who determines the tone of the annual report and space allocation. The Financial Statements and Management Discussion and Analysis included in the annual report are written by the Finance Department. An outside consultant is employed to assist with the design and production of the annual report. The drafting of the Letter to Shareholders and Corporate Overview sections is also contracted out.

In many respects, the annual report is a consensus document and a collaborative effort in that virtually all executives have a role to play in the editing and review of the document.

In 1991, there were 6 pages of the annual report devoted to the environment. In 1992 this was reduced to 2 pages. The President insisted that there be something on the environment in the 1992 report even though some executives felt that discussion of environmental issues belonged more appropriately in an environmental report which was being contemplated for the 1993 fiscal year.

Environmental disclosure in the 1992 annual report provided no hard facts or detailed compliance information.

Environmental information in the annual report would be drafted by the Vice President, Environmental Affairs and edited and reviewed by other executives. The Chief Financial Officer and Chief Executive Officer would have the final review of the annual report.

In order of priority, the audience for the annual report is seen as the following: shareholders and investors; employees; potential investors; customers; and the general public.

- (6) Do you have an environmental report? If so, what is the process for preparing it and who is your audience?

At the 1992 annual shareholders' meeting the President committed to producing an environmental report by Earth Day 1994.

There is an interesting story behind this announcement. In early 1993 there were management discussions about the need to produce an environmental report. At the same time the Taskforce on the Churches and Corporate Responsibility sent a letter to the Company (as part of a mass mailing) encouraging the Company to engage in environmental auditing and environmental reporting. The Vice President, Environment and others met with Taskforce representatives and indicated that the Company was considering the production of an environmental report but that analysis was incomplete and the CEO had not yet made a decision in this regard. Therefore the Taskforce, which holds shares in the Company, indicated to the Vice President, Environmental Affairs that they would challenge the President on this issue at the Annual Meeting and that they hoped that it would not embarrass the President.

The President was apprised of the likely challenge. The Taskforce raised the question at the annual meeting and the President responded with his commitment.

The Manager, Community and Government Affairs has the responsibility for coordinating the development of the environmental report. It is expected that the external consultant involved with the annual report will provide assistance with the environmental report. Among other reasons for using a consultant, this will ensure consistency of design and other elements between the two documents. Contents of the environmental report were still under discussion at the time of the interview. However, the corporate environmental mission statement and the environmental management and compliance program will serve as the focus and context of the report.

As part of the process of developing the environmental report, the Manager, Community and Government Affairs is examining what other companies are providing by way of environmental reports.

The audience for the environmental report is foremost, employees and local communities - others include: shareholders, regulatory authorities, government contacts, investment analysts and community associations.

There is a real difference in attitude between the people living in the cities in Southern Ontario and the people who are living and working in the pulp and paper communities. The industry is in the north but the voters are in the south. The people in the south get their information filtered by the news media that may have either a limited understanding and/or a certain agenda.

- (7) What is the process for preparing other Ontario Securities Commission filings?

The Manager, Investor Relations is involved in the preparation of all Ontario Securities Commission (OSC) filings. These documents are prepared by either the Finance Department or the Law Department depending on the nature of the documents.

If there are any pertinent environmental issues they may be addressed in the quarterly report. The Annual Information Form (AIF) for the OSC and the Securities and Exchange Commission in the U.S. provides information about woodlands holdings and environmental issues. Information is obtained in consultation with the appropriate individuals.

The external auditors review the AIF to ensure that it is in compliance with financial disclosure regulations.

- (8) What is the process for preparing information releases and who is your audience?

Information releases are prepared by both the Manager, Investor Relations and the Manager, Community and Government Affairs depending on the nature of the release.

Press releases are usually distributed by means of a wire service. Non-financial information releases are provided to the managers of each business unit before they are provided to the wire service.

- (9) Have you contributed to trade journal articles? If so, what is the process for preparing such articles and who is your audience?

The Company has not contributed significantly to trade journal publications on environmental issues.

- (10) Do you have brochures, educational material or employee newsletters? If so, what is the process for preparing such documents and who is your audience?

Educational material consists of posters, position statements and brochures and the Company's participation in the Newspapers in Education program run by the Company's customers.

Each business unit produces its own newsletter. Corporate office provides the units with environmental and other

stories for possible use in the newsletters. However, content of the newsletter is strictly at the discretion of the local business unit newsletter editor.

- (11) Do you engage in advertising? If so, what is the process for preparing the advertising and who is your audience?

The Company does not do a great deal of advertising. Marketing is primarily through direct contact with the customer.

- (12) What changes have happened in these procedures?

The process of developing the annual report and regulatory filings varies from year to year depending on the stage of restructuring of the organization.

- (13) What changes do you expect will happen in these procedures?

The biggest change is the development of the first environmental report to be released in early 1994, likely along with the annual report, or shortly thereafter.

Once the environmental report is issued there will be no or minimal amounts of environmental disclosure in the annual report as required by disclosure standards.

- (14) What do you expect will happen with environmental disclosure in your industry in the future?

Environmental reports will become standard not only for the industry but for all resource based industries. Also, it is possible that other industries less dependent on natural resources may begin producing more environmental reports. The environmental reports need to provide more clarity in their presentation than what is currently being provided.

The hope is that environmental reports remain voluntary. Industry associations may begin to set industry standards. The concern is that if companies are "too loose" with their information then environmental reporting may become regulated.

We want to set ourselves up as leaders in the industry in terms of both environmental performance and environmental

reporting. That way we can pull the others in the industry along with us.

There are no rules in environmental reporting but if the reporting is to be of value, it should follow quasi-financial reporting rules.

(15) Where do you stand on the disclosure of "bad" news?

"There is nothing that we do that's unfavourable that has not been reported to the government." Therefore, all our bad news is already available to the public.

"We are committed to disclosure of the good, the bad and the ugly."

(16) What are the factors that have motivated your corporate environmental disclosure?

We have a whole bunch of reasons for producing an environmental report. In order of priority they are:

- (1) "We are doing better than most people think we are." So, we have to tell them. Urban populations are less knowledgeable on activities of the pulp and paper companies than those who use and work in those environments.
- (2) We have to get our message across to our employees. Environmental issues must be addressed by everyone in the Company and every one has to help with the solutions. We also need a vehicle to go back to the employees to show them what we are doing and how we are doing.
- (3) The public expects it.
- (4) Investors expect it.
- (5) Elected officials get a filtered story from government employees. They need to get the story from us.
- (6) We just want to tell our story. We might use it as an advocacy tool.

In order of priority, the groups we want to target are:

- (1) Employees - they are ambassadors for the Company and it is important that they have the information that they need.
- (2) The community at large.
- (3) Shareholders and investors.
- (4) Regulatory authorities. We are already reporting environmental information to them on a regular basis but it is important to give them direct information on the whole picture not just pieces one at a time.
- (5) Special interest groups. However, some groups would prefer it if you didn't publish an environmental report. They don't want to acknowledge that industry is making progress.

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