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Assessing Organizational Culture: Do the Values and Assumptions of Canadian Chemical Companies Reflect Those Espoused by "Responsible Care"?

by

Andrew J. Green

B. Eng. (Chemical)
McGill University, 1993

SUBMITTED TO THE DEPARTMENT OF CHEMICAL ENGINEERING IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE IN TECHNOLOGY AND POLICY
AT THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

SEPTEMBER 1995

Signature of Author: _____
Department of Chemical Engineering
August 11, 1995

Certified by: _____
John R. Ehrenfeld
Senior Research Associate,
Center for Technology, Policy and Industrial Development
Thesis Supervisor

Accepted by: _____
Richard de Neufville
Chairman, Technology and Policy Program

Accepted by: _____
Robert E. Cohen
Professor of Chemical Engineering
Chairman, Committee for Graduate Students

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ABSTRACT

This thesis is motivated by the belief that it would be desirable to know if the Canadian Chemical Producers' Association's "Responsible Care®" initiative is reflected in the cultures of chemical companies. The thesis proposes a methodology for assessing the organizational culture of a chemical company, and analyzes the cultures of two Canadian chemical companies to determine if they support or contradict Responsible Care.

The Responsible Care initiative is reviewed. The organizational culture literature is reviewed, and different definitions of "organizational culture" are presented. The text of the Responsible Care initiative is analyzed sentence-by-sentence for cultural beliefs, values and assumptions. A detailed description of the beliefs, values and assumptions that one would expect to find at the "perfect" Responsible Care company is provided.

Different methodologies for assessing organizational cultures are discussed with reference to the literatures of organizational culture and qualitative research, and in the context of the purposes of this thesis. A hybrid methodology, based upon ethnography and Schein's "clinical research," is proposed and discussed at length. The cultures of two Canadian chemical companies are analyzed for consistency with the beliefs, values and assumptions one would expect to find at the "perfect" Responsible Care company. Results suggest that several of Responsible Care's beliefs, values and assumptions are supported at both companies, others are partially supported, and only a handful are contradicted.

Based on the experience of this thesis, modifications to the hybrid methodology are recommended.

Thesis Supervisor: John R. Ehrenfeld
Title: Senior Research Associate,
Center for Technology, Policy and Industrial Development

Acknowledgements

The completion of this thesis has been but a small part of what has for me been an enormous learning experience at MIT - most of which is evidenced nowhere on my academic transcript.

Funding for this experience at MIT has come from the Social Sciences and Humanities Research Council, the Natural Sciences and Engineering Research Council, the MIT Technology, Business and Environment Program, David Marks' deep pockets, and my generous grandmother.

I have learned and decided many things about myself and about life during my time here in Cambridge, and I wish to thank the following for their contributions to this process: Mum, Dad and Catherine; Dave and Sarah; Alice C., Alice Y., David, Don, Emily, Erin, Eugene, Henri, Jim E., Jim H., Jon, Jonathan, Judi, Kevin, Louis & Diana, Mark, Michael, Mort, Narasimha, Nick, Pam, Paola, Pierre, Rosaline, Sarah, Scott, Shanthi, Tyson, and Uli; Gail and Rene; Calvin & Hobbes; the truck; and the music of the eighties. If I have foolishly forgotten someone, please accept my apologies.

Three people in particular were so supportive that I am compelled to single them out for thanks: Joe Bambenek, Susan London and Edmond Toy. One could only wish for friends half as good as you.

As for this thesis, I owe thanks to Dr. John Ehrenfeld, Jennifer Nash, Brian Wastle at the CCPA, and everyone whom I visited at the three companies I studied. And the long summer nights in E40 would not have been the same without the remarkable companionship of Edmond, Shanthi, Joe and Pam.

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Chapter 1

Introduction

1.1 Motivation

Directly or indirectly, the chemical industry provides many of the chemicals and products that we associate with modern living, products that most of us "couldn't live without" - in some cases literally. But as public awareness of the environment grew through the 1970's and 1980's, the chemical industry found itself increasingly on the defensive. As more and more negative impacts of the industry's products and wastes became understood, the industry's public image deteriorated, and it became the target of more and more government regulation.

And the chemical industry did not enjoy being regulated. It felt that regulation slowed the industry's progress, cut its profits, and reduced its global competitiveness. The proliferation of regulations was particularly intense in the United States. Canadian chemical industry leaders saw what was happening to the US industry and concluded that they in Canada would not avoid a US-style regulatory climate unless they improved their public image.

Thus in 1985 the Canadian Chemical Producers' Association (CCPA) devised its *Responsible Care*® initiative, "designed to reduce the public's perception that it has been unwillingly put at risk by the industry" (CCPA 1992a p. 1). But the CCPA felt that public perceptions could not be changed through mere public relations; instead, visible improvements in performance were required. The chemical industry needed to demonstrate to the public (and its elected legislators) that the industry could control its environmental impacts.

If the industry could show that it could "voluntarily put measures into place for the effective management of chemicals, chemical products and processes," (CCPA 1992a p. 1) then perhaps the pressures for regulation would ease.

On paper, the Responsible Care initiative seemed to contain all the right ingredients. But "effective management of chemicals, chemical products and processes" has not been sufficient to convince a skeptical public. After all, actual environmental performance (as measured by environmental releases and accidents) improved considerably throughout the 1970's and 1980's, with no corresponding improvement in public opinion. In fact, public opinion of the chemical industry has deteriorated.

Why does the public still distrust the chemical industry? This thesis is motivated by the hypothesis that public perceptions of the chemical industry will not improve until the public believes it can trust the industry's *motives*. The public (and its elected legislators) must be convinced that the chemical industry has *internalized* Responsible Care, that it *believes* Responsible Care, that *Responsible Care is part of the culture.*

But how would one assess if Responsible Care were part of the cultures of chemical companies? The purpose of this thesis is to answer this question.

The establishment of public trust is not the only motivation for wanting to assess the consistency between the cultures of chemical companies and Responsible Care. This thesis is also relevant to the question of whether chemical companies can be expected to continue their voluntary Responsible Care efforts if (or when) public attention turns from the environment to other issues. If the industry's public image problem goes away, will it quietly forget its commitments? One possible answer is that companies will only continue those efforts that are of direct benefit or entrenched in the culture. Once again this leads to the questions: Is Responsible Care part of the culture of chemical companies? and, how would we know if it were?

1.2 Thesis Questions

To summarize, the goal is to be able to answer the question:

Do the cultures of chemical companies reflect Responsible Care?

But in order to even attempt this question, first one must ask:

How would one assess if Responsible Care were part of the organizational culture of a chemical company?

In this thesis I answer the second question, and I take some preliminary steps towards answering the first.

1.3 Why Canada?

No place could be more appropriate for such an analysis than Canada. Canada's Responsible Care initiative was the first of the now 36 Responsible Care initiatives worldwide. And, knowing the importance of culture, Responsible Care's founders deliberately sought to elevate the Canadian initiative to cultural status:

> "The codes, like the guiding principles, reflect an *ethic*, an *attitude*, a *method of thinking* about the way in which member companies do business and their role in society." (CCPA 1992a p. 11) (emphasis mine)

> "Responsible Care is an ethic, or *philosophical belief*, rather than simply a set of codes and specific detailed obligations - it is something we *believe*, which influences what we do." (CCPA 1992b p. 1) (emphasis mine)

1.4 Technology and Policy

In response to the negative impacts of the technology of the chemical industry, governments subjected it to ever-increasing regulation. *Policy* attempted to change *technology*. But these attempts were not completely successful. The chemical industry became disgruntled, perceiving regulation as not only ineffective and inefficient, but also as harmful to competitiveness.

"Responsible Care" is a new type of policy. It is a self-imposed program of principles, codes and evaluations aimed at improving the chemical industry's performance. But what truly makes this policy different is that it is *cultural.* It explicitly aims to change the cultures of chemical companies.

The new attention to culture is a result of the recognition that the *technology* of the chemical industry cannot be considered to be separate from the organizations that develop and use it. A chemical company's technology shapes its culture, and its culture shapes its technology.

Thus *culture* links *technology* and *policy*. This thesis contributes to increased understanding of the dynamics of this linkage.

1.5 Overview

It would be difficult to address this subject without a good understanding of Responsible Care itself. Therefore Chapter 2 presents a description of the initiative, including a brief history of its development, and some notes on the current compliance verification process. The reader familiar with Responsible Care in Canada may wish to skip this chapter. Note that Responsible Care in Canada is quite different from the Responsible Care initiatives in the US and elsewhere.

It would also be unwise to delve into the cultures of chemical companies without a good feeling for what "organizational culture" is. Chapter 3

surveys the many different conceptions of culture in the literature and presents a few definitions.

Chapter 4 uses fundamental "components" of organizational culture to analyze the Responsible Care initiative for its cultural content. A list of the cultural implications of Responsible Care is generated. This list corresponds to the culture one would expect to find at the "perfect" Responsible Care company. If one went looking for evidence of Responsible Care in the culture of a chemical company, this is what one would look for.

The next question to address is then: how would one go about looking for the things identified in Chapter 4? Chapter 5 draws upon different methodologies for assessing organizational cultures from the literatures of organizational culture and qualitative research and proposes a methodology to answer this question.

Chapter 6 describes the results of applying this methodology at two Canadian chemical companies. Their cultures are analyzed for consistency with the culture one would expect to find at the "perfect" Responsible Care company. Aspects of Responsible Care culture that seem to be supported by the cultures of these companies are identified, as well as aspects that do not seem to have yet been internalized, and aspects that seem to be contradicted.

Conclusions are offered in Chapter 7. Based on the experience of this thesis, modifications to the hybrid methodology are recommended. Some preliminary conclusions regarding Responsible Care and the companies' cultures are presented.

Chapter 2

The Canadian Chemical Producers' Association's "Responsible Care®"

2.1 The Canadian Chemical Producers' Association

The Canadian Chemical Producers' Association (CCPA) consists of 63 member companies who produce over 90 percent of the chemicals made in Canada. CCPA members produce inorganic chemicals, petrochemicals, and other organic and specialty chemicals. CCPA companies operate nearly 200 manufacturing and distribution facilities in approximately 150 communities in Canada, employing 31,000 people. The CCPA was founded in 1962. (CCPA 1994a cover, CCPA 1992a p. 37)

2.2 Evolution

In the late 1970's, CCPA members developed a statement of principles regarding the management of chemicals. But on the advice of their legal departments, some member companies were reluctant to commit to the statement, and it was never adopted. Concern for the issue continued, however, and by 1983, the CCPA did adopt a formal statement of principles concerning "Responsible Care". Whether to endorse this one-page statement or not was entirely up to each member company (Bélanger 1990 p.151).

The tragedy at Bhopal, India in 1984 forever changed the chemical industry. After Bhopal, the Canadian and US industries began to investigate whether a similar tragedy could occur in North America. The US Chemical

Manufacturers' Association (CMA) discovered that 95% of its members had emergency response plans at their plants, but that almost all dealt only with response *inside* plant compounds. Co-ordination with local fire and police departments had been neglected. In fact, this problem had also been present at Bhopal, and had had devastating consequences: curious local residents had rushed to the plant fences after they heard the plant alarm, and in so doing, they had walked right into the path of the lethal cloud of methyl isocyanate (Rayport & Lodge 1990 pp. 9-10).

The chemical industry was forced to acknowledge that the general public had a legitimate role to play in its activities. The US CMA devised a "Community Awareness and Emergency Response" program. The program stressed that every plant manager had to get out from inside the plant and make contact with the local community. It urged the development of an emergency response plan in cooperation with local fire and police authorities, and it advocated close relations with local political leaders and community groups (Rayport & Lodge 1990 p. 11).

In Canada, the chemical industry found that it had a very bad public image and decided that it would have to change that image if it wanted to stay in business. The CCPA gauged that public perceptions could not be changed merely through public relations; instead, visible improvements in performance were required. The CCPA was impressed by the US Community Awareness and Emergency Response program. It consisted of both principles and management practices; and it had had positive impacts on company performance and regulatory development[1] (Rayport & Lodge 1990 p.15).

But the CCPA recognized an additional problem not addressed by the CMA program. When Dow Canada measured public opinion as a function of distance from its facilities, the results were instructive. Within about 6km of the plant, people held specific opinions about Dow, which were different than their opinions of the industry as a whole. But beyond 6km, people's image of Dow was controlled by their opinion of the whole chemical industry. The

[1]When US legislators drafted Title III of the Superfund Amendment and Reauthorization Act, they borrowed whole segments of the CMA's Community Awareness and Emergency Response program, almost word for word.

exemplary behaviour of Dow's individual plant was practically irrelevant. Dow would be judged by the behaviour of its peers (Buzzelli 1991).

Thus, the CCPA wanted to go beyond the CMA's Community Awareness and Emergency Response program (which was voluntary at the time), and include essentially all the activities of the chemical industry in a mandatory program. The association decided to put together a set of codes of practice that would deal with all aspects of members' products - from cradle to grave. Even the activities of so-called "third parties," such as suppliers, contractors or distributors, were covered, because - in the words of CCPA President Jean Bélanger, "the mistakes of a third party can often reflect on the industry as a whole." (Bélanger 1990 p. 152)

The CCPA used the term "Responsible Care" to describe its initiative.

2.3 Purpose

The self-proclaimed purpose of Responsible Care is as follows:

> "The Responsible Care initiatives are designed to reduce the public's perception that it has been unwillingly put at risk by the industry, and ensure that the industry shows it can voluntarily put measures into place for the effective management of chemicals, chemical products and processes." (CCPA 1992a p. 1)

Under the title "What Are We Trying to Achieve?", the CCPA Responsible Care implementation guidelines points out that the initiative:

> "grew out of public concern over the hazards of chemicals and the way the chemical industry was run, and its aim is to dispel that concern by addressing its root cause." (CCPA 1992b p. 1)

and concludes from this that the industry must do two things:

- "improve the level of safety in all aspects of chemical operations, to eliminate the basis for concern, and

- communicate this to the public, and to governments, and demonstrate that the industry is sensitive and responsive to public concern." (CCPA 1992b p.1)

The CCPA also identifies two additional objectives it is trying to achieve:

> "A consistent approach throughout the CCPA membership in the responsible management of chemicals based on the Responsible Care codes of practice."
>
> "CCPA confidence that it can speak externally regarding the responsible nature of its membership." (CCPA 1992a p. 5)

2.4 Overview

Responsible Care in Canada[2] consists of a statement of principles, six Codes of Management Practice, two supporting policies, a chemical referral centre, a public advisory panel, and a compliance verification[3] process. The first principle was written in 1985, and the last code was finished in 1989. The most senior executive responsible for chemical operations in each CCPA member company must accept and endorse the principles of Responsible Care as a condition of membership.

As of December 1994, companies who had been CCPA members for three years or more reported that 98% of the Codes of Management Practice elements had been implemented (CCPA 1994a p. 10). The compliance verification process was begun in 1994, and is scheduled for completion by 1996.

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[2]"Responsible Care" initiatives developed in different countries are quite different.
[3]Compliance with Responsible Care, not with government regulations.

New companies joining the CCPA are given three years to achieve Responsible Care compliance (CCPA 1994a p. 10).

Chemical industries in 36 countries have adopted "Responsible Care" initiatives (CCPA 1994a p. 1).

2.5 Guiding Principles

Each CCPA member company subscribes to the following guiding principles (CCPA 1992a p. 3):

- "ensure that its operations do not present an unacceptable level of risk to employees, customers, the public or the environment

- provide relevant information on the hazards of chemicals to its customers, urging them to use and dispose of products in a safe manner, and make such information available to the public on request

- make Responsible Care an early and integral part of the planning process leading to new products, processes or plants

- increase the emphasis on the understanding of existing products and their uses and ensure that a high level of understanding of new products and their potential hazards is achieved prior to and throughout commercial development

- comply with all legal requirements which affect its operations and products

- be responsive and sensitive to legitimate community concerns

- work actively with and assist governments and selected organizations to foster and encourage equitable and attainable standards."

2.6 Codes of Management Practice

2.6.1 Preamble

(CCPA 1992a pp. 11-12)

The preamble to the Codes of Management Practice describes Responsible Care as "an ethic, an attitude, a way of thinking..." The broad scope of the initiative is underlined by affirming that Responsible Care applies inside and outside Canada, to existing and new chemical products, uses, processes, equipment, services and facilities; and that member company responsibilities extend to suppliers, transporters, distributors, contractors and customers. The preamble affirms companies' responsibility to stakeholders through a long-term commitment to the community, to occupational health and safety, and to the environment. The needs and concerns of all stakeholders, including the public, customers, contractors, employees and others onsite, must be understood and addressed. The preamble also requires that companies know all relevant laws and regulations and meet or exceed them in letter and in spirit. The necessity of continuous performance improvement is mentioned. And the importance of integrating Responsible Care into corporate planning and operations at all levels, so that the initiative is "everybody's job", is underlined.

2.6.2 General

(CCPA 1992a pp. 12-36)

There are six Codes of Management Practice. Five address individual stages of the chemical life cycle (research & development, manufacturing, transportation, distribution and hazardous waste management), and a sixth addresses community awareness and emergency response.

Each code includes a purpose, a set of guiding principles modelled after the overall Responsible Care guiding principles, some general clauses and some specific clauses.

The general clauses of the five "life cycle stage" Codes (i.e. the R&D Code, the Manufacturing Code, the Transportation Code, etc.) are very similar. All but the R&D Code require "written policies, standards and procedures" governing all aspects of the life cycle stage, while the R&D code requires "written policies, protocols and methodologies." All five require that the responsibility for generating, implementing, auditing and updating these written systems, and for taking corrective action, be clearly assigned. All five require that written systems meet or exceed all applicable laws and regulations in letter and in spirit, and all five require members to ensure equivalent performance by contractors.

All the Codes require that members actively assist governments in developing public policies, legislation or regulations governing operations of the particular life cycle stage. Members are to consult with other affected stakeholders during this process if possible. Finally, all five of the "life cycle stage" Codes require companies to cease activities that cannot be performed in accordance with the Codes.

Other clauses in each Code are more specific each life cycle stage, however, they contain several common themes. For example, all the Codes require member companies to identify and evaluate the hazards and risks of their various operations, communicate them to relevant stakeholders, and work to minimize the risks.

2.6.3 Research and Development Code
(including Design, Construction and Start-up of New Facilities)
(CCPA 1992a pp. 16-19, 22-23)

The R&D Code requires member companies to identify and evaluate the health, safety and environmental hazards associated with new products, processes or applications as early as possible. The Code asks that particular attention be paid to long-term health and environmental effects. Based on the hazards they identify, companies must define operating standards, which projects must achieve at periodical reviews or else be terminated. New potential applications must be analyzed for hazards continuously as R&D work proceeds.

The Code requires "good laboratory practice," including hazard identification and communication to employees, employee training, proper management of lab waste, and accurate and ethical documentation of lab results. A "data package" with information regarding potential hazards (including those of associated wastes) must be prepared for every new chemical, chemical product, process or application.

The R&D Code and the Manufacturing Code both address the design of new facilities. The R&D Code requires that health, safety and environmental standards for new plants be clearly defined and that the design achieve them. Together the two Codes require that plant design include a hazard and operability study and risk assessment. Hazards and risks must be minimized and controlled. The Manufacturing Code requires that companies establish criteria for site selection and buffer zones that minimize adverse impacts on the community, the environment, industrial neighbours, utilities and transportation routes. The design must also minimize effects manifested after the closure or demolition of the facility. The Manufacturing Code also requires members to provide information and respond to concerns raised during the planning of new facilities.

Both Codes also address plant start-up. The Manufacturing Code requires safety standards for employees, contractors, the public and the environment during construction and start-up of new facilities, while the R&D Code requires that operators be fully trained - including in emergency procedures - prior to start-up. The R&D Code requires that material safety data sheets, that include packaging, handling and disposal procedures, be available for all materials prior to start-up.

The design and start-up provisions of the R&D Code apply to pilot plants as well as full scale facilities.

The R&D Code also addresses market introduction of new chemicals, chemical products, processes or applications. Even for small scale test marketing, employees and contractors must be educated regarding handling and transportation. Potential customers must be provided with information

about hazards and risks, and assistance to ensure responsible handling, use and waste management. Except in the case of small scale test marketing, members must confirm that customers are indeed handling and using new products responsibly, and managing associated wastes responsibly.

2.6.4 Manufacturing Code
(except Design, Construction and Start-up of New Facilities)
(CCPA 1992a pp. 20-23)

The Manufacturing Code applies during normal and abnormal operation of manufacturing facilities, including start-up, shutdown and maintenance.

It requires members to regularly identify and evaluate environmental health and safety hazards and risks, and work to minimize the risks by eliminating or controlling the hazards. Safety and health performance and the working environment must be monitored, so that potential occupational problems can be minimized. An emergency plan must be prepared.

The Manufacturing Code requires documentation of written procedures covering all phases of operation. Companies must be aware of all their effluents and emissions, and where necessary monitor and/or control them. Changes or modifications to equipment, processes, materials, hardware or software must be controlled and recorded. Handling and storage of materials must minimize environmental, health and safety risks. Companies must also try to minimize the effects of accidental spills or releases.

The Code requires that companies regularly perform hazard analyses and risk assessments on operating facilities, and take action to minimize risks. Injury, damage or harm from explosion, fire or uncontrolled releases must be prevented.

The Code also requires that appropriate security is provided for plants.

Manufacturing Code provisions concerning the design, construction and start-up of new facilities are discussed in the previous subsection (R&D Code).

Both the R&D and Manufacturing Codes require that hiring and training be commensurate with Responsible Care, employee competence be maintained, and that regular performance assessments be conducted.

2.6.5 Transportation Code
(CCPA 1992a pp. 24-27)

Transportation is part of the distribution process, but the CCPA felt it was important enough to address via a separate Code.

The Transportation Code requires member companies to regularly identify and evaluate the hazards and risks of transportation, and communicate them to employees and transporters.

The Code requires that companies identify alternate transportation modes and routes that minimize the exposure of humans or environmentally sensitive areas to hazards. It requires that companies establish criteria for transportation: mode, equipment, containers, inspection and maintenance. Carriers must be selected based on their safety performance, their procedures for equipment inspection and maintenance, and their drivers' training.

Companies must train and assess the people loading and unloading their products, and must set standards for loading and unloading equipment - including containment and emergency response standards. Container contents must be clearly identified. The risks involved in returning, cleaning, reusing, servicing, and disposing of containers must be dealt with.

The Transportation Code requires each member company to have an annually field-tested "transportation emergency response plan". The plan must identify the resources to be deployed in the case of an accident involving company chemicals or chemical products, and must describe the means to deal with hazards to people or the environment, and contain or clean-up the release. At the scene, companies must cooperate with government or other agencies. Companies must provide specialized equipment and materials, and technical advisors to provide information and

media relations. Companies must also evaluate the need for immediate and short-term assistance to people who are dislocated by an accident.

The Transportation Code also requires companies to participate in CCPA awareness-raising regarding transportation, and to identify and train company people to respond to questions from people along transportation corridors.

2.6.6 Distribution Code
(CCPA 1992a pp. 28-32)

The Distribution Code is the longest of the Codes of Practice. It requires that member companies set standards for the siting and security of distribution facilities. Also, companies must regularly evaluate storage and handling hazards and risks. Companies must monitor their safety performance and work environments to identify and minimize potential occupational health and safety problems. The Code requires standards and procedures for bulk and packaged storage that include: spill containment, product segregation, labels and vehicles used. Member companies must provide to employees and contractors information and training regarding: hazards, risks, handling, container-to-container transfer, container cleaning, packaging and waste management. Companies must also provide emergency support for incidents involving company chemicals or chemical products. The Code applies to all member company owned and contracted premises, in all geographic jurisdictions.

According to the Code, member companies must supply customers with material safety data sheets along with their first shipment of a chemical or chemical product, including commercial samples. Companies must also supply any other information they believe to be "vital to the health and safety of the end-user", and require its communication to the end user as a condition of sale. In addition, companies must provide information on the management of waste and empty containers.

The Distribution Code requires CCPA members to impose certain conditions upon both their suppliers and their distributors. Companies are required to

ensure that their distributors understand Responsible Care. They must establish criteria for the selection of their distributors, minimum standards the distributors must meet, and assess distributor performance against those standards. Member companies must cause their distributors to correct any shortcomings or terminate supply. Likewise, CCPA members must establish selection criteria and minimum standards for their suppliers, and cause supplier performance to meet those standards or terminate purchases.

The Code requires companies to respond to requests for information or assistance concerning their chemicals or chemical products (or services) from any point in the distribution chain.

The Distribution Code is much more specific than the other Codes with regard to member companies' relations with governments and the law. It requires a *program* to meet or exceed the letter and spirit of all legal requirements related to distribution, and communication to ensure that all employees and contractors understand and comply with all legal requirements. The Code also asks that member companies raise awareness of chemical distribution practices in their communities, and encourage their employees to "speak out within their own communities to improve the perception of chemical distribution." Companies are to choose organizations, associations and governments with whom to advocate Responsible Care policies. Companies should influence public policies, standards and regulations concerning distribution, focusing on prevention and proaction. According to the Code, the goal is to establish standards for continuously improving chemical distribution activities.

2.6.7 Hazardous Waste Management Code
(CCPA 1992a pp. 33-36)

The CCPA's Hazardous Waste Management Policy establishes the following hierarchy of preferred hazardous waste management options:

- reduction at source
- recycling, recovery or re-use
- destruction or treatment to render the waste non-hazardous
- secure containment and monitoring

The Hazardous Waste Management Code of Management Practice reflects this policy by requiring member companies to continually identify opportunities to move up this hierarchy. In addition, it encourages companies to apply the Code to wastes that are not legally classified as hazardous.

The Code specifies actions for cases where reduction, recycling, recovery or reuse are not possible. For hazardous waste treatment or disposal, companies must record the volume, characteristics, location, and method used. The Code requires that when treatment or disposal are available, companies reject as unacceptable long-term storage or dilution of wastes to render them non-hazardous. Waste that cannot be made non-hazardous must be contained in secure landfills or geological formations.

Under the Code, companies are required to participate in the development of (and continually evaluate) improvements in hazardous waste management and disposal technologies. Companies must also promote the establishment of hazardous waste treatment and disposal facilities.

The Hazardous Waste Management Code requires that companies define criteria for the selection of hazardous waste management contractors and disposal facilities and assess compliance periodically. Waste management contractors in any country must be appropriately permitted and licensed and must apply the Code to CCPA member company wastes. The Code requires that members train employees, contractors and outside agencies in managing company wastes. Companies must provide information, advice and encouragement to customers and end-users on how to manage hazardous wastes consistent with the Code.

With respect to past hazardous waste management practices, the Code requires companies to develop and maintain records of the nature and quantities of wastes sent to previously used sites and conduct environmental studies on each site to the extent practicable. Regulatory agencies are to be notified of any information or results collected, and members are to cooperate with government agencies in any remediation activities.

2.6.8 Community Awareness and Emergency Response (CAER) Code (CCPA 1992a pp. 6 13-15)

The Community Awareness and Emergency Response (CAER) Code applies to every member R&D, manufacturing, distribution and waste management site.

Like the other Codes, the CAER Code requires that members meet or exceed all applicable laws in letter and in spirit, train employees and assess their performance, and actively assist governments in developing public policies, legislation or regulations that govern community awareness or emergency response. Unlike for the other Codes, companies are not required to cease activities that cannot be performed in compliance with the CAER Code.

The site manager has primary responsibility for generating, implementing, field-testing, auditing and updating the following CAER Code programs for his or her site.

The CAER Code requires that every site manager have a community awareness program consistent with the CCPA's Community Right-to-Know Policy. The Right-to-Know Policy affirms that the public has "the need and right" to know the risks associated with chemical operations and products, including transportation risks. It states that the community is entitled to the same health and safety information as employees; that companies have a need to protect trade secrets; and that accurate hazard information shall always be provided regardless of trade secrets. It states that communities around facilities have a right to know the risks the facilities present and the "corresponding" safeguards. Similarly it states that communities along transportation routes have the right to access company information about the risks, safeguards, and volume ranges of transported goods. Finally, the policy promises that members will communicate to emergency response agencies the nature, volume and location of materials on their sites.

In addition to the general requirement for a program consistent with the above, the CAER Code specifically requires sites to list community rights, responsibilities, concerns, needs and resources, and organizations and people

who represent the community. These lists must be up to date. Sites must identify and train people to communicate regularly with the community, and develop information for them to use, in both responsive and proactive situations. Sites must have a system to measure and assess the results of their communication.

The CAER Code also requires sites to have an up-to-date, operational "emergency assistance plan," which is documented, audited, field-tested and updated annually; and communicated to the community regularly. In developing the plan - and communicating it to the community - the site must actively coordinate and cooperate with local officials and the media.

The plan must be based on a regular site-specific risk assessment and provide information from the assessment to employees and people in the community "who have an interest." The site must also assist authorities in emergency planning for itself, for the community and for neighbouring industries. The site's emergency response plan must be integrated into a community-wide emergency response plan.

Like the Transportation Code emergency response plan, the CAER Code plan must make expertise and specialized equipment and materials available in the event of an emergency, and must evaluate the need for assistance to persons dislocated.

2.6.9 Interpretation

The CCPA acknowledges that the Responsible Care Codes of Management Practice still leave much up to the judgement of each individual member company. Its guidelines for Responsible Care implementation advocate a "basic approach" for interpreting the Codes. The CCPA suggests that companies ask themselves three questions, "from the viewpoint of an outsider rather than from within":

> What could go wrong? (NOT What is most likely to go wrong?)
> How could this affect others?
> How might these potential effects be perceived?
>
> (CCPA 1992b pp. 1-2)

2.7 Public Advisory Panel

The Responsible Care initiative includes a community advisory panel[4], comprised of a cross-section of interest groups and concerned citizens. The panel includes environmental activists, consumer advocates and educators, as well as experts in ecological science, environmental economics, human health and safety, farming, and chemical products retailing. The panel meets regularly to discuss and evaluate matters on which the CCPA seeks comment and advice, and which the panel identifies as requiring a response from the industry. The panel reviewed the Codes of Management Practice line-by-line, identifying ambiguities and "weasel words", before the Codes were formally presented to the membership. The panel reviews planned CCPA activities and is to identify emerging areas of concern before they become major public issues (CCPA 1994a p.12-15, CCPA 1992a p. 10).

2.8 Compliance Verification

Under the title "How Will I Know if Responsible Care is Working?", the CCPA's public Responsible Care pamphlet states:

> "If Responsible Care achieves all the goals set for it, there will be fewer and fewer environmental incidents involving chemicals. You will see more and more chemical companies displaying the Responsible Care symbol as a sign of their commitment to its promise. There will be more and more reaching out to the community where the industry has a presence." (CCPA 1992c)

However, it would seem that fewer environmental incidents, more Responsible Care symbols, and more reaching out to the community would not be enough for the CCPA itself to be sure that Responsible Care was

[4]At the CCPA level. This subsection does not refer to local plant community advisory panels.

"working," because in 1994, it began a Responsible Care compliance verification process.

The compliance verification process intends to verify code implementation at all member companies by 1996. The verification involves two steps: a member company self-assessment, followed by an evaluation of the company's management processes by an external verification team (CCPA 1994b p.1). The verification team consists of a public representative, two industry representatives knowledgeable in Responsible Care, and a local community representative.

The external verification process begins when a member company's senior management - after a self-assessment - states to the CCPA that the company has attained its Responsible Care commitment (CCPA 1994b p.3).

The CCPA describes the external verification as a process through which the CCPA and the public can "fairly judge that the members of CCPA are in fact in compliance with the *intent* of Responsible Care" (CCPA 1994b p.1) (emphasis mine). One of the purposes of the external verifications is to "give the Responsible Care initiative and its implementation credibility with internal and external stakeholders" (CCPA 1994b p.3).

For the purposes of verifying Responsible Care compliance, the CCPA has boiled all the requirements of the Codes of Management Practice down to the following seventeen "management system categories" (CCPA 1994b Attachment 2):

- "Set organization and responsibilities
- Meet or exceed laws
- Inform public and understand and respond to concerns
- Hire, train, assess and communicate to employees
- Collect hazard information and assess and minimize risks
- Identify, manage and minimize emissions and wastes
- Incorporate safety, health and environment into design stages
- Document standards and procedures
- Provide information to second parties

- Assess second parties
- Manage changes
- Provide security
- Manage previous waste sites
- Measure and improve performance
- Manage emergencies
- Assist in public policy development
- Audit and follow up"

For each of these seventeen management system categories, the external verification team visits the company and its sites to determine: how responsibility for the process has been assigned, how the process was determined to be acceptable, how the process is audited for acceptable results, how the process is documented or updated, and whether the process is provided with adequate resources (CCPA 1994b p.4).

Note that the external verifiers do not directly determine if the company is meeting the Responsible Care Codes or not. Instead they "look for evidence of effective management processes used by the company to ensure it is meeting the guiding principles and codes," rather than "duplicating the internal verification processes required by Responsible Care" (CCPA 1994b p.4).

Among other things, the verification team can: request senior managers at random to explain of Code principles and the methods or systems the company has adopted to ensure compliance; look for the Responsible Care insignia on documents; ask employees, contractors, suppliers, customers, carriers, government agencies or the public if they see the company as practicing Responsible Care; and confirm second party conformance to Responsible Care. The team must "be satisfied that the Responsible Care *intent* is being practiced" (CCPA 1994b pp. 10-11) (emphasis mine).

Once verified, companies must "proactively share the results with affected communities using their community dialogue process," as well as with anyone else who asks. The company is "solely responsible" for making verification results public (CCPA 1994b p. 9).

2.9 Culture

The preamble to the Codes of Management Practice affirms:

> "The codes, like the guiding principles, reflect an *ethic*, an *attitude*, a *method of thinking* about the way in which member companies do business and their role in society." (CCPA 1992a p. 11) (emphasis mine)

Further, the CCPA's guidelines for Responsible Care implementation state:

> "Responsible Care is an ethic, or *philosophical belief*, rather than simply a set of codes and specific detailed obligations - it is something we *believe*, which influences what we do." (CCPA 1992b p. 1) (emphasis mine)

By using words such as *ethic, attitude, method of thinking, philosophical belief,* and *believe*, the CCPA has deliberately undertaken to make Responsible Care part of the *culture* of the chemical industry. This thesis addresses the question of how to determine if the CCPA has been successful.

Before tackling this question, however, I must tackle the question: what is culture?

Chapter 3

What is 'Organizational Culture'?

> "Culture is a blank space, a highly respected, empty pigeonhole. Economists call it 'tastes' and leave it severely alone. Most philosophers ignore it - to their own loss. Marxists treat it obliquely as ideology or superstructure. Psychologists avoid it, by concentrating on child subjects. Historians bend it any way they like. Most believe it matters, especially travel agents." (Douglas 1982 p. 183)

3.1 A Brief History of Organizational Culture Research

'Culture' is a concept from the discipline of anthropology, and so it was anthropologists who first studied the cultures of organizations. W. Lloyd Warner of Harvard University's anthropology department and Elton Mayo of the Harvard Business School performed the first systematic study of the culture of a modern work organization in 1931 and 1932. Their study, of a bank wiring room at the Western Electric Company in Chicago, provided the management literature with its first well-publicized cultural explanations for workers' behaviours (Trice & Breyer 1993 pp. 23-24). At Western Electric, workers used their beliefs about fairness, a living wage and the right to work, to explain and justify restricting output, pressuring others to withhold production, and violating company rules (Roethlisberger and Dickson, in Trice & Breyer 1993 p. 25).

A few years later, Warner moved to the University of Chicago, and along with one of his students, began a consulting firm which used cultural analysis

to advise clients on worker relations. In 1942 the student, Burleigh Gardner, taught the first course in applied industrial anthropology at the University of Chicago business school (Trice & Breyer 1993 p. 25). In 1945 he wrote the first textbook that took a cultural perspective on work organizations (Gardner 1945).

But other anthropologists showed little interest in the workplace. In the 1950s, the availability of computers shifted the focus of much social science research to quantitative, rather than qualitative, methodologies. Only a trickle of organizational culture research took place through the 1950s and 1960s. The study of organizational culture staged a modest comeback in the 1970s, but its real boom began in the early 1980s (Trice & Breyer 1993 pp. 26-30).

In 1981 and 1982, two best-selling books: Theory Z: How American Business Can Meet the Japanese Challenge, by William Ouchi, and In Search of Excellence: Lessons from America's Best Run Companies, by Peters and Waterman, suggested that a company's *performance* might be a function of its *culture*. This suggestion struck a chord in American managerial thinking. At the time, several US companies seemed to be losing in competition against companies from Japan, a country with a very different culture. US managers had begun to believe that their past management practices had discouraged desirable behaviours such as innovation or attention to quality. Some managers also saw controlling culture as a means of regaining control over sour relations between workers and management (Trice & Breyer 1993 pp. 29-30).

Some management scholars were also attracted to the culture concept because they felt that the structural-rational approaches to organizational management that were prevalent at the time, were missing important realities of the functioning of an organization. Traditional quantitative research results seemed to some to be too far removed from their context to be relevant (Trice & Breyer 1993 p. 31).

And so, from 1981 to 1985, in addition to Theory Z and In Search of Excellence, four other books on organizational culture were published,

several business and trade magazines included articles on the subject, five major conferences on corporate culture (and organizational folklore and symbolism) were held within 19 months, and *The Journal of Management Studies, Administrative Science Quarterly, Organizational Dynamics* and *The Journal of Management* all published special issues on organizational culture (Trice & Breyer 1993 pp. 29-30).

Since the boom of the 1980s, attention to "organizational culture" has declined. Some have written it off as a fad; others feel a fundamental change in the study and management of organizations has already taken place.

3.2 'Culture' and 'Organizational Culture': Many Definitions

But what *is* organizational culture?

Unfortunately, there is no single widely-accepted definition of 'organizational culture'. This is for at least two reasons. First, there is no single widely-accepted definition of 'culture' in anthropology - the discipline in which the concept originated. In fact, in 1952 Kroeber and Kluckhohn identified *164* definitions of 'culture' used in anthropology. Second, the concept of organizational culture has been used by people in several different disciplines to help provide very different kinds of insight. For example, organizational culture has been studied in attempts to understand different nations' management styles, in efforts to improve companies' efficiencies, and in attempts to learn about the subconscious of the human brain. The definition used for the concept depends on the purpose for which it is being used:

> "The concept of culture in an organizational context has proved a useful device for differing orientations towards organizational activity. For managers, it has served as a metatheory for the explanation and prediction of corporate effectiveness. For academics, it has been regarded either as a variable, dependent or independent, within a functionalist, systems-oriented approach; or as a 'root metaphor' for organization as a process." (Linstead & Grafton-Small 1992 p. 332, references suppressed)

It is perhaps not surprising, then, that there are several definitions of organizational culture. Even Disneyland has a definition. As was done by Maloney (1991 p. 44), I list several here:

Culture is

> "A set of readinesses to distinguish some aspects of the situation rather than others and to classify and value these" (Vickers 1985 p. 67)
>
> "The amalgam of shared values, behavior patterns, mores, symbols, attitudes, and normative ways of conducting business that differentiate one company from all other companies" (Tunstall 1985 p. 45)
>
> "A pattern of basic assumptions - invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration - that has worked well enough to be considered valid and, therefore, is to be taught to new members as the correct way to perceive, think, and feel in relation to those problems" (Schein 1990 p. 111)
>
> "The shared philosophies, ideologies, values, assumptions, beliefs, expectations, attitudes, and norms that knit a community together... a group's agreement, implicit or explicit, on how to approach decisions and problems" (Kilmann et al. 1985 p. 5)
>
> "An integrative framework for sensemaking, both a product and a process, the shaper of interaction and an outcome of it, continually being created and recreated through these interactions" (Jelinek et al. 1983 p. 332)
>
> "A learned pattern of unconscious (or semi-conscious) thought, reflected and reinforced by behavior, that silently and powerfully shapes the experience of a people" (Deal 1985 p. 301)
>
> "The way we do things around here" (Bower in Deal & Kennedy 1982 p. 4)
>
> "What keeps the herd moving roughly west" (Deal & Kennedy 1982)

"The set of values and assumptions that underlie the statement, 'This is how we do things around here.'" (Quinn 1988)

"A collective phenomenon that embodies people's responses to the uncertainties and chaos that are inevitable in human experience" (Trice & Breyer 1993 p. 2)

"The product of forms of social invention and interaction" (Diamond 1991 p. 510)

"The set of important assumptions (often unstated) that members of a community hold in common" (Sathe 1985 p. 234)

"The conclusions a group of people draws from its experience, consisting largely of what people believe about what works and what does not" (Wilkins & Patterson 1985 p. 267)

"The shared and relatively enduring pattern of basic values, beliefs, and assumptions in an organization" (Sethia & Gilnow 1985 p. 402)

"A set of solutions devised by a group of people to meet specific problems posed by the situations they face in common" (Van Maanen 1985 p. 33)

"A relatively unique set of common understandings around which action is organized, expressed in a language whose nuances are peculiar to the group" (Becker & Geer in Louis 1985 p. 74)

"A set of understandings or meanings shared by a group of people. The meanings are largely tacit among members, are clearly relevant to the particular group, and are distinctive to the group. Meanings are passed on to new group members." (Louis 1985 p. 74)

"The philosophy underlying all business decisions, the commitment of top leadership and management to that philosophy, and the actions

taken by individual cast members that reinforce the image" (Walt Disney Co. in Van Maanen 1991 p. 65)

3.3 Classification of Conceptions of 'Organizational Culture'

The multiple definitions of organizational culture lead to second-order complications. In their efforts to explain such a complex collection of definitions, a handful of scholars have classified the different approaches to organizational culture taken in the literature. So not only are there dozens of definitions of organizational culture, there are also several ways to *classify* these definitions.

Two such classifications are presented here. The first, by Allaire & Firsirotu, is probably the most complete, but I find it difficult to understand. The second, by Smircich, is more accessible. My purpose in presenting these classifications is to give the reader some mental frameworks into which to fit the many different conceptions of organizational culture. The details of each classification system are - to me - not important.

3.3.1 Conceptual Ancestors in Anthropology

Allaire and Firsirotu (1984) review the literature of cultural anthropology and divided it into eight schools of thought concerning the nature of 'culture'. They then apply their typology of schools of thought regarding 'culture' to the different approaches to 'organizational culture' in the literature of management and organizations. Thus they relate conceptions of 'organizational culture' to their (unwitting) ancestors in cultural anthropology.

Allaire and Firsirotu first divide the schools of thought regarding 'culture' into those that view culture as a sociocultural system, and those that view it as an ideational system. If culture is a sociocultural system, then it is part of the social system. On the other hand, if culture is an ideational system, then it is distinct from (though related to) the social system. Much of the organization theory literature tacitly assumes that culture is a sociocultural

system, i.e. that the social and cultural dimensions of organizations are integrated.

Allaire and Firsirotu then divide the sociocultural schools of thought into those that are synchronic and those that are diachronic. Synchronic schools tend to study culture at specific points in time and/or space, while diachronic schools study the development of culture over time. They identify two synchronic and two diachronic schools of thought regarding culture. The synchronic schools are the functionalist school and the structural-functionalist school.

The functionalist school sees culture as an instrument through which individuals improve their ability to satisfy their basic human needs. Thus culture exists only insofar as it can deliver such needs. If a functionalist view of culture is applied to organizational culture, then one sees organizations as theatres in which individuals strive to satisfy their needs.

Structural-functionalists see culture as the mechanisms through which individuals acquire beliefs and habits that equip them for the social system. A structural-functionalist view of organizational culture holds that organizations accept the values of the larger societal culture, because they are merely a subsystem of the larger culture. Organizations reflect society's values and myths to remain legitimate within society.

The diachronic schools are the historical-diffusionist school and the ecological-adaptationist schools. Historical-diffusionists see culture as produced by historical circumstances and processes and tend to study the diffusion of different cultures to different societies. A historical-diffusionist sees organizational culture as a function of its historical circumstances, i.e. which cultural forms were characteristic of the times when the organization was born and/or transformed.

The ecological-adaptationist school believes that culture relates human communities to their ecological environments, in a process of continuous feedback. Socially-learned behaviour patterns affect the environment, and, in turn, the environment causes culture to change. According to an ecological-

adaptationist view, organizational cultures take on various forms as they continually adapt to, or are selected by, their environment. There is a never-ending, and sometimes unsuccessful quest for fit between the organization and its changing environment.

In addition to the four sociocultural schools of thought discussed so far, Allaire and Firsirotu identify four ideational schools of thought. They divide these four according to where each school believes culture is located. Three of the schools believe that culture resides in the minds of the people bearing the culture. These are the cognitive, structuralist and mutual equivalence schools.

The cognitive school views culture as a system of knowledge, that is, ways of perceiving, thinking and acting learned by individuals in order that they fit into their society. The concept of organizational climate is consistent with the cognitive school of culture. Organizational climate is the perception of the character of the organization. It directs individual behaviour towards meeting organizational demands. Another cognitive way of viewing organizations is as frameworks for actions generated by members' shared cognitive maps.

Structuralists believe that culture arises from the subconscious of the human brain. Since all human brains are assumed to be alike, all cultures have common features, and are different only due to "permutations." A structuralist view of organizations would similarly hold that all organizational cultures have common features due to common subconscious processes of human minds.

To the mutual equivalence school, culture is a framework, or contract, that allows different individuals to predict each other's behaviour. It allows the coexistence of people with very different cognitive processes or beliefs. In a mutual equivalence-school organization, individuals do not hold common goals, but decide to participate in mutually predictable cognitive structures because participation in the organization serves their personal motives.

Allaire and Firsirotu also identify one school of thought believing that culture resides in the shared meanings and symbols of the society, rather than in the minds of individual culture-bearers. The symbolic school may be best summarized by Geertz: "Man (sic) is an animal suspended in webs of significance he himself has spun; I take culture to be those webs." (Geertz 1973 p. 5). Culture consists of the shared and public symbols and meanings that people use to interpret experience and guide action. According to one symbolic view of organizational culture, organizations create symbols which interpret and give meaning to the experiences and actions of individuals. Another interpretation of organizational culture consistent with symbolism is that organizations themselves are merely social constructions, or cultural symbols, through which individuals interpret and give meaning to their experiences.

Allaire and Firsirotu conclude that different conceptions of organizational culture "lead to *divergent and mutually exclusive* notions of what culture in organizations might signify and portend" (Allaire & Firsirotu 1984 pp. 209-210, emphasis in original). Thus the choice of a definition is an important decision.

3.3.2 Culture as Variable vs. Culture as Metaphor

Another classification of conceptions of organizational culture has been proposed by Smircich (1983), and is adopted by many other authors.

The concept of metaphor is central to Smircich's classification system. Lakoff and Johnson (1980) have pointed out that seeing and using metaphors is a fundamental aspect of human thought; it is how we learn about our world. Organizations are often described in terms of metaphors. For example, organizations have been analyzed as if they were machines, or biological organisms.

On one hand, if we see organizations as "little societies" of people (instead of as machines or as organisms), this leads us to the notion that an organization can have a *culture* , just like societies do (Allaire & Firsirotu 1984 p. 193). Note the phrasing: organizations *have* cultures. On another hand, several

scholars have used culture directly as a metaphor for organization, i.e. organizations *are* cultures. Smircich describes these two views of culture (organizations *have* cultures and organizations *are* cultures) as "culture as a variable" and "culture as a root metaphor."

When culture is viewed as a root metaphor for organization, it serves as an epistemological device to frame the study of organizations as social phenomena:

> "The use of culture as a root metaphor is quite different from drawing analogies between organizations and machines and organizations and organisms. It represents a shift from comparison with physical objects to comparison with another social phenomenon, an undertaking with greater room for ambiguity because of culture's nonconcrete status... Culture as a root metaphor promotes a view of organizations as expressive forms, manifestations of human consciousness." (Smircich 1983 p. 347)

Another attraction of the culture-as-root-metaphor view is that if organizations are like cultures, then organiz*ing* must be like culture forming. Thus the analogy can lead to analysis of the dynamic process of creating and maintaining organization.

Finally, note that the phrase 'organizational culture' can make the concept of culture as a root metaphor (organizations *are* cultures), difficult to grasp. Scholars use the phrase 'organizational culture' to refer to *both* the concept of organizations *having* cultures and the concept of organizations *being* cultures - often without explicitly stating which view is being used.

Scholars use different conceptions of culture because they have different research questions and interests. Therefore Smircich's classification system of conceptions of organizational culture corresponds to a classification of the different purposes for which the concept is used.

Smircich lists two conceptions of culture as a variable and three conceptions of culture as a root metaphor for organizations. On the culture-as-variable

side, she places the 'comparative management' literature and the 'corporate culture' literature.

In comparative management studies, 'organizational culture' is an external background factor that explains different management practices in different countries. Organizations *have* culture. It is an independent variable that is imported into the organization via its members.

In the corporate culture[5] literature, 'organizational culture' is something produced in organizations, by organizations, so that they may achieve their goals more effectively. It is a lever by which managers can influence the course of their organizations. Students of corporate culture want to know how they can shape and change organizations' cultures.

Smircich identifies three perspectives towards culture as a root metaphor for organization: the cognitive perspective, the symbolic perspective, and the structural or psychodynamic perspective. Each of these develops a cultural analogy for organization based on a different view of culture from the anthropology literature.

Scholars of organizational cognition aim to determine the structures of knowledge or rules that are in operation within organizations. They note that the branch of cultural anthropology known as ethnoscience defines culture as a system of knowledge and beliefs or a system of shared cognitions, and they see an analogy (a metaphor). The organizations they study seem like culture as defined by ethnoscience. Thus, they view 'organizational culture' as a "master contract" that includes the rules (constitutive and regulative) that organize beliefs and actions consistent with the organization's self-image.

Symbolic organization theorists and practitioners are concerned with how an organization creates and maintains common interpretations of situations.

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[5]'Corporate culture' is distinct from 'organizational culture.' 'Corporate culture' usually refers to a culture devised by management and instilled in members of the rest of the organization. The 'organizational culture' may even resist the 'corporate culture' of the same organization (Linstead & Grafton-Small 1992 p. 333). The two concepts are interrelated, however. A corporate culture may be devised to change or overcome an organizational culture; if it succeeds, it will become part of a new organizational culture.

They note that some anthropologists define culture as a system of shared symbols and meanings, and they too see a metaphor. The organizations they work with seem like culture as defined by this symbolic perspective. Thus to them, 'organizational culture' is a pattern of symbolic discourse.

Finally, structural anthropology regards culture as the expression of unconscious psychological processes. A structural or psychodynamic perspective would view 'organizational culture' as organizational forms and practices that reflect the unconscious processes at work in the minds of organization members. The purpose of studying organizational culture with this perspective would be to reveal the hidden universal dimensions of the human mind. Few scholars are doing this.

Others have proposed other categorizations for the different conceptions of organizational culture in the literature. Martin and Meyerson (1988) divide research on organizational culture into three major perspectives: integrative, differentiated and fragmented. These differ in the level of consensus or dissensus that is assumed to exist within a culture. Sathe (1985) divides culture researchers into adaptationists and ideationalists. Adaptationists study the more evident manifestations of culture (later these will be referred to as "shallower levels of culture"), while ideationalists search out its deeper undercurrents.

3.4 Definitions of 'Organizational Culture'

I hope that these two typologies of different conceptions of organizational culture have provided the reader with a mental framework in which to place different definitions of organizational culture. Next I present several of the more complete definitions of organizational culture found in the literature. Of course, no definition of organizational culture is right or wrong; definitions can only be appropriate or inappropriate to the particular use at hand.

3.4.1 Schein

Edgar Schein defines organizational culture and discusses its origins more explicitly than most other scholars of the subject.

He defines "organizational culture" as:

> "(a) a pattern of basic assumptions, (b) invented, discovered, or developed by a given group, (c) as it learns to cope with its problems of external adaptation and internal integration, (d) that has worked well enough to be considered valid and, therefore (e) is to be taught to new members as the (f) correct way to perceive, think, and feel in relation to those problems." (Schein 1990 p. 111)

Schein sees three levels of culture: observable artifacts, values, and "basic underlying assumptions." Artifacts include everything from the physical layout of an organization, the dress code, the manner in which people address each other, the smell and feel of the place and its emotional intensity; to more permanent archival manifestations such as company records, products, statements of philosophy, and annual reports. Artifacts are visible and easy to observe, however, Schein cautions that they are hard to interpret without first understanding the deeper levels of culture present (Schein 1990 pp. 111-112).

Values explain why individuals behave the way they do. Schein believes that while values can lead to behaviour, they are usually merely "espoused values," and not the underlying reasons for behaviour. He attributes this role to what he calls "basic, underlying assumptions." He defines the difference between a value and an assumption as being that a value can be legitimately debated within a culture, whereas an assumption is taken for granted, or preconscious, and debating it is seen as 'insane' or 'ignorant' (Schein 1984 p. 3)

According to Schein, values and underlying assumptions can contradict each other. This means that a group could reach consensus at one level of culture (either values or assumptions), while still disagreeing at the other (Schein 1990 p. 112).

Schein describes basic underlying assumptions as learned responses (that may have originated as values) whose success in solving problems caused them to drop out of awareness. Thus culture exists because it helps the organization to cope with its problems. However, once a group has learned to hold common assumptions, the resulting automatic patterns of perceiving, thinking, feeling and behaving provide meaning, stability, and comfort. This reduces the anxiety that would otherwise result from inability to understand or predict events happening around the group. Schein thinks of some aspects of culture as being for the group what defense mechanisms are for the individual. He sees the strength and tenacity of culture, as well as its tendency to cover all aspects of human behaviour, as deriving in part from this anxiety-reduction function. Therefore Schein believes that basic cultural assumptions change only very slowly, even though he sees culture as continuously forming as the group learns (Schein 1984 pp. 2, 8, 10, Schein 1990 p. 111-112).

Schein is unusual in including the passing on of solutions to new members in his definition of culture. He feels that the decision to pass something on is itself a very important test of whether a given cultural solution is shared and perceived as valid (Schein 1984 pp. 10-11).

Schein feels that culture forms around the organization's problems of "external adaptation" and "internal integration." Problems of external adaptation include the organization's strategy, goals, means for accomplishing goals, means of measuring performance, and correction mechanisms; in short, the things that ultimately determine whether the organization survives in its environment. Problems of internal integration include how the organization handles: language, boundaries, power and status, intimacy, rewards and punishments, and ideology (Schein 1984 pp. 9-10).

Schein believes that organizational culture is "embedded" by the following mechanisms: what leaders pay attention to, measure and control; how leaders react to critical incidents and organizational crises; deliberate role modeling and coaching; operational criteria for the allocation of rewards and

status; and operational criteria for recruitment, selection, promotion, retirement, and excommunication (Schein 1990 p. 115).

He believes that organizational culture is articulated and reinforced by: the organization's design and structure; organizational systems and procedures; the design of physical space, facades and buildings; the organization's stories, legends, myths and symbols; and formal statements of organizational philosophy, creeds and charters (Schein 1990 p. 115).

3.4.2 Trice & Breyer

Trice and Breyer (1993) feel that culture consists of collective phenomena that embody people's responses to the uncertainties and chaos that are inevitable in human experience. It emerges from people's struggles to manage uncertainties and create order in social life. It provides articulated sets of ideas that help people individually and collectively to cope with uncertainties and ambiguities.

Trice and Breyer define two levels of culture: substance and forms. The substance of culture is made up of ideologies that tell people what is, how it got that way, and what ought to be. These are shared, emotionally-charged, taken-for-granted beliefs, values and norms. They are not rationally based and are resistant to change. They channel actions to repeat apparently successful behaviour. Cultural forms are accepted ways of expressing, affirming and communicating these beliefs, values and norms (the substance of culture). Forms are observable entities, including actions.

Trice and Breyer identify six "major characteristics of cultures": cultures are collective, emotionally charged, historically based, inherently symbolic, dynamic and inherently fuzzy. Cultures are *collective* because they arise as individuals interact with each other. One individual is insufficient to adopt and accept a behavior and have it become culture. Culture "Belonging to a culture involves believing what others believe and doing as they do - at least part of the time" (Trice & Breyer 1993 p. 5). Cultures are *emotionally charged* because they help to manage anxieties, and therefore stem more from emotional needs than from rational consideration. Cultures are *historically*

based because they are functions of the histories that gave rise to them, even historical circumstances that are no longer present. Cultures are *inherently symbolic*. Symbols are the basic unit of cultural communication and expression. Cultures are *dynamic*. They are always changing. New people and technologies join and leave cultures. Individuals try to change cultures. And communication of cultures to new members is imprecise, especially given that much of culture is taken for granted. New members are provided with clues to their cultures, not meanings. Finally, cultures are *inherently fuzzy* because they incorporate contradictions, ambiguities, paradoxes, and confusion. In fact one can define the core and peripheral values of a culture based upon how contradicted they are by the rest of the culture.

Conversely, Trice and Breyer also identify concepts that they feel are not part of the concept of culture. They feel that culture is not: climate, groupthink, social structure or metaphor. Climate and groupthink are two concepts with fairly specific definitions in the organizational literature that need not be discussed here. Trice & Breyer come down on the ideational side of Allaire and Firsirotu's typology. They explicitly state that the social structure and culture are distinct; in fact they attribute much social change to the interplay between the social structure and the culture. They also clearly reject the culture-as-metaphor side of Smircich's typology. to them, organizational culture is not simply a metaphor for describing organizations, in the same way that an organization can be described as a machine. "Cultures exist," they affirm.

Trice and Breyer identify five main consequences of culture, or "things we get from having culture": management of uncertainties; social order; continuity; collective identity and commitment; and ethnocentrism.

Culture is used to *manage uncertainties*. It has been said many times that people do not enjoy change. Perhaps this is better said as "people do not want everything in their worlds to change at the same time. They want to be able to take some things for granted." (Trice & Breyer 1993 p. 9) Cultures supply consistency and predictability. Consistent with this idea, Kluckhohn noted that culture seems to develop especially fully around experiences humans seem to have the least control over (Kluckhohn 1942 p. 68).

Independent behaviour by all the different individuals in a society could potentially be chaotic. But cultures create *social order* by prescribing predictable patterns of behaviour. "While...all cultures can be seen as constraining individual freedom to some degree, people do not reach their full potential as human beings nor live happily and contentedly without cultures." (Trice & Breyer 1993 p. 9)

Cultures create *continuity* through the process of socialization of new members of the group. If new members are not socialized, their beliefs will eventually force the culture to change.

People tend to acquire their sense of *identity* from their place in the culture. With time, different individuals tend to develop a sense of common identity and emotional attachment to their group. With this attachment comes *commitment*. They do not want to disrupt the culture and so become committed to its continuation.

People with one set of ideas can come to dislike or fear people with other ideas. Thus strong cultures can lead to *ethnocentrism*, where the members of a group feel superior to members of other groups.

Trice & Breyer also point out that culture also often has 'dual consequences,' i.e. that culture can lead to consequences with opposing effects. For example, culture can often have both obvious consequences and hidden consequences, or both beneficial consequences and harmful consequences.

3.4.3 Kilmann

Kilmann defines culture as

> "the shared philosophies, ideologies, values, assumptions, beliefs, expectations, attitudes, and norms that knit a community together... a group's agreement, implicit or explicit, on how to approach decisions and problems." (Kilmann 1985 p. 5)

He also invokes (slightly modified) Bower's phrase: "the way things are done around here."

Kilmann sees three "levels of depth" in which culture is manifest: behavioral norms, hidden assumptions, and human nature.

His *behavioral norms* are the behaviors and attitudes that organization members pressure one another to follow. Just below the surface, they are the unwritten rules of the game. They are not written, but are transmitted by stories, rites, rituals, and particularly sanctions. Kilmann finds that most people can list their culture's norms with relative ease.

Below behaviors and attitudes lie *hidden assumptions*, the fundamental beliefs behind decisions and actions. These assumptions pertain to: the nature of the environment, what stakeholders want and need, how stakeholders make decisions, and which actions stakeholders are likely to take - both now and in the future. Assumptions are more difficult to examine and change than norms because questioning them is more threatening to people.

Kilmann believes that at its deepest level, culture includes the "unconscious dynamics of human nature in group settings," or the collective manifestation of human wants, motives and desires in a group setting. Aside from such (relatively) tangible individual characteristics such as mental capacity, memory or objectivity, Kilmann lists things such as insecurities, desire for power or control or security, ability to learn, fears, oversensitivity, dependency and paranoia.

Despite the fact that Kilmann's levels of culture plunge deeper into the human psyche than most, he actually advocates using a relatively shallow definition when attempting to manage culture: "...although the deeper approaches initially seem to be more penetrating, in practice they seem to be impractical..."

3.4.4 Dyer

Dyer (1985) feels that culture resides in four different places: artifacts, perspectives, values, and assumptions.

Artifacts are tangible and overt. They can be verbal, behavioral or physical. They include: language, stories, myths, rituals, ceremonies, art, attire, layout and technology.

Perspectives are the rules and norms, both formal and informal, that give the ways situations are defined and interpreted, and they establish the bounds of acceptable behavior. They are the coordinated sets of ideas and actions used in dealing with problematic situations.

Values are broader than perspectives because they apply in all situations. They are the goals, ideals, standards and sins that are used to evaluate situations, acts, objects and people.

Assumptions are tacit, unconscious, core beliefs about self, others and the world. Assumptions form around: the nature of relationships, human nature, the nature of truth, the environment, and universalism vs. particularism.

Lundberg (1985 p. 171) also adopts Dyer's definition.

3.4.5 Sathe

Sathe (1985) adopts what he calls a modified version of Schein's three-level model, except that to him, culture is to be found only in the deepest level. His three levels are: organizational behavior patterns or behavior, justifications and communications of behavior, and culture.

His first level is organizational behavior patterns, which include technology, art, and audible and visible behavior patterns. His second level consists of the communications used to describe behavior, and its explanations,

rationalizations and justifications. These are how organization members "make sense" of the first level.

To Sathe, only the third level is culture. Culture is the "set of important assumptions (often unstated) that members of a community hold in common." Culture consists of the actual, internalized beliefs and values held. Internalizing them is not the same as merely being aware of them or complying with them.

Beliefs are basic assumptions about the world and how it actually works. They are based on personal experience and the judgement of trusted others. Values are basic assumptions about what ideals, or ultimate end states, are desirable or worth striving for. They are based on personal experience and one's upbringing.

A person can be unaware of their beliefs or values until they are violated or changed.

Sathe feels that culture has two major elements: content and strength. Content comes mainly from the combination of prior assumptions and new learning, although the business environment contributes as well. An organizational culture's content gives the direction of behavior, while its strength gives the intensity of behavior. Cultural strength is a function of three things: the number of assumptions shared, how widely they are shared, and the clarity of the ordering of the assumptions.

3.4.6 Deal

Deal and Kennedy (1982) take a very pragmatic approach to culture. Their book is very testimonial and is meant to motivate managers to change their corporate culture. Their preferred definition of corporate culture is the common-sense "the way we do things around here," which they attribute to Bower. In separate article, Deal (1985) also offers the following definition: a "learned pattern of unconscious (or semi-conscious) thought, reflected and reinforced by behavior, that silently and powerfully shapes the experience of a people." He sees culture as "a concept that captures the subtle, elusive,

intangible, largely unconscious forces that shape a society or workplace...a social fiction created by people to give meaning to work and life." Culture fosters stability, certainty, order, predictability and meaning.

Deal and Kennedy list the following "elements of culture": the business environment, values, heroes, rites and rituals, and the "cultural network." They feel that the business environment shapes culture the most. They see values, which they define as the company's philosophy for achieving success - as the "bedrock of any corporate culture."

3.4.7 Diamond

To Diamond (1991), "Culture is not simply another variable or isolable component of organizations. It is what organizations are. Organizational culture is the product of forms of social invention and interaction that include:

- "artifacts, physical space, and architectural design
- degrees of formality and informality
- social control that involves professional and institutional modes of socialization or indoctrination
- shared symbols and meanings found in rituals and myths
- espoused and practiced norms, values, and management philosophies
- organizational leadership personalities
- groups (units, offices, divisions, etc.) as subcultures
- host cultures that include economic and political task environments
- critical moments of organizational history"

3.5 No Definition is Best

Which definition is most appropriate for this thesis? Fortunately, one can look for consistency between companies' cultures and Responsible Care without having to explicitly adopt or renounce any specific definition of

organizational culture. In the following chapter I draw heavily, though not exclusively, on the work of Schein in analyzing Responsible Care from a cultural perspective. This type of analysis tends to fit more easily into the "culture as variable" school of thought, however there is no need to ignore the useful insights from other perspectives.

Chapter 4

The Cultural Elements of Responsible Care®

4.1 Which Cultural Levels to Analyze

The purpose of this thesis is to address the questions: Do the cultures of chemical companies reflect Responsible Care? and if they did, how could we tell?

As seen in Chapter 3, different authors define different "levels" of organizational culture. These are summarized in Table 4.1. Therefore, a good first approximation to answer the question "How could we tell if a company's culture reflected Responsible Care?" would be: "Look at the things listed in Table 4.1." Or in other words, look at the company's artifacts, behavioral norms, perspectives, values, beliefs, assumptions, and human nature.

One of the motivations for this thesis is that it is important to be able to determine if Responsible Care is truly penetrating the cultures of chemical companies in a fundamental way. This is motivated by the presumption that only deep changes in a company's culture can approach permanence. There is no question that a deep penetration of company's cultures would be accompanied by changed behavioral norms and artifacts. However, changes in the visible, tangible aspects of company life may not necessarily indicate changes in the deeper levels of culture. For these reasons, this thesis focuses on levels of culture deeper than artifacts and behavioural norms. Therefore artifacts and behavioural norms are not studied. This leaves me with beliefs, values, assumptions and human nature from Table 4.1.

Table 4.1: Different Typologies of the "Levels" of Organizational Culture

Author:	Kilmann	Dyer	Schein	Sathe	Trice & Breyer
Shallowest Level		Artifacts	Artifacts		
	Behavioral norms			Organizational behavior patterns (not culture)	Norms
		Perspectives			
				Justifications of behavior (not culture)	
		Values	Values		Content
	Hidden assumptions	Assumptions	Assumptions	Assumptions, including beliefs and values	
Deepest Level	Human nature				

Human nature is only listed as part of organizational culture by Kilmann. In human nature he includes: mental capacity, memory, objectivity, insecurities, desire for power, desire for security, ability to learn, fears, oversensitivity, dependency, and paranoia. Though I can offer no proof, it seems improbable that Responsible Care would attempt to change these characteristics of human nature. In addition, it seems nearly impossible that I could determine if such characteristics as found in a company were consistent with Responsible Care or not. Therefore this thesis does not address human nature, the deepest level of organizational culture. Note that Kilmann himself would approve of this decision. He defines culture to include such deep concepts, but he advocates the use of shallower approaches in practice (Kilmann 1985 p. 9).

Thus this thesis will focus on the problem of how to determine if the **beliefs, values and assumptions within company cultures are consistent with Responsible Care**. Beliefs, values and assumptions are taken as culture.

4.2 What Types of Beliefs, Values and Assumptions Are Cultural?

The number of beliefs, values and assumptions at play in a chemical company is probably quite large. To uncover them all seems unrealistic. Fortunately, the organizational culture literature offers some hints as to which beliefs, values and assumptions may be 'most' cultural.

As was presented in Chapter 3, Schein defines cultural assumptions as solutions that the organization has discovered in resolving its problems of external adaptation and internal integration. Regarding external adaptation, the organization must develop consensus on its strategy, goals, means for accomplishing goals, performance measurement and correction mechanisms. Thus one class of cultural assumptions are assumptions that help the organization develop consensus around these issues. A second class of cultural assumptions are assumptions that help the organization solve its problems of internal integration, that is, assumptions that help it to determine its: language, criteria for inclusion, criteria for allocating power, rules for intimacy, criteria for allocating rewards, and its ideology.

Schein's problems of external adaptation and internal integration give an idea of which subject areas to look around when searching for culture. But they do not specify specifically what assumptions to look for. Fortunately, Schein (1990 p. 114, 1984 p. 6) also identifies "Some underlying dimensions of organizational culture," or "basic underlying assumptions around which cultural paradigms form." He suggests that the organizational culture researcher look for assumptions regarding: the organization's relationship to its environment, the nature of human activity, the nature of reality and truth, the nature of time, the nature of human nature, the nature of human relationships, and homogeneity versus diversity. For example, an assumption regarding the organization's relationship to its environment might be that the organization assumes that it dominates its environment. An assumption regarding the nature of human nature might be that humans are basically good, or that humans are basically evil.

Schein's suggestions on where to find cultural assumptions are the most comprehensive of the literature, but Kilmann and Dyer contribute some ideas in addition. Kilmann et. al. (1985 p. 6) point out that cultural assumptions can also form around the nature of the organization's environment itself. For example, what do the stakeholders need? what actions are they likely to take? And Dyer (1985 p. 205) adds to the list assumptions that are made about the self, that is assumptions made about the organization by the organization. He also raises the concept of universalism versus particularism: should everyone be evaluated by the same standards, or should some be given preferential treatment? The rest of the literature is largely silent when it comes to being this specific about precisely what types of beliefs, values or assumptions form organizational culture. Some may believe that *all* organizational beliefs, values or assumptions comprise its culture.

Table 4.2 takes these contributions from Schein, Kilmann and Dyer, and summarizes the types of questions which - when answered - can form the basis of cultural assumptions. I have added one or two questions of my own that seemed appropriate.

Table 4.2: Cultural Assumptions

ASSUMPTIONS REGARDING:	
The environment	What is the organization's environment like? Hostile? Friendly? Who are the organization's stakeholders? What do the stakeholders need? What do they want? How do the stakeholders make decisions? What are the stakeholders likely to do?
The organization	What is the organization like? What is the organization for?
The organization's relationship with the environment	Is the organization's relationship with the environment one of dominance, submission, harmonizing, finding an appropriate niche, or what?
Human nature	What human attributes are intrinsic? Is human nature generally good, evil, or neutral? Is human nature perfectible or not?
Human activity	Is it 'right' for humans to be active, dominant, proactive, passive, self-developmental, harmonizing, fatalistic, or what? What is work? What is play?
Human relationships	What is the 'right' way for people to relate to each other? How should power be distributed amongst people? Are relationships primarily hierarchical, group oriented, or individualistic? How should affection be distributed amongst people? Is life cooperative or competitive? Should society be based on individualism, group collaborativism, or communalism? Is the best authority system autocratic, paternalistic, collegial, participative, based on law, based on charisma, or what?
Homogeneity vs. diversity	Is the organization better off if it is highly diverse or highly homogeneous? Should individuals innovate or conform?
Universalism vs. Particularism	Should everyone be evaluated by the same standards? or should some be treated differently?
Reality and truth	What is real? What is a 'fact'? How is truth determined? investigation and testing, reliance on wisdom, social consensus, revelation by authority?
The nature of time	Does the organization look to the past, the present, or the future? What time horizon is appropriate to consider? Is time linear or cyclical? monochronic or polychronic?
The nature of space	Is space limited or infinite? Is property communal or individual?

4.3 Cultural Elements of Responsible Care®

The above discussion tells what types of beliefs, values and assumptions to look at when looking for Responsible Care in a company's culture. But it does not tell which specific beliefs, values and assumptions would be consistent with Responsible Care. Thus the next step is to analyze the Responsible Care initiative itself, asking the question: what beliefs, values and assumptions would be present at the 'perfect Responsible Care company'?

Table A1 (in Appendix A) presents my analysis of the cultural elements of Responsible Care. The left hand column consists of the entire text (with two small exclusions) of the CCPA's Responsible Care document (CCPA 1992a), sentence-by-sentence. The right hand column includes all the corresponding beliefs, values and assumptions I could conceive of, again sentence-by-sentence. These are the elements of culture that Responsible Care implies should exist within the cultures of chemical companies. Beliefs and values are relatively easy to see in the Responsible Care text; cultural assumptions are harder to divine. In divining the cultural assumptions implied by a given sentence, I was guided by the questions listed in Table 4.2.

The process of generating cultural beliefs, values and assumptions underlying each sentence of Responsible Care was time consuming, but it was nowhere near as time consuming as the process of trying to categorize and sort the results. The right hand column of Table A1 contains 1,199 beliefs, values and assumptions. Several very similar concepts appear several times throughout the document. Other concepts appear only once in the whole table, implying that these are not major themes of Responsible Care. After a few false starts, and a tremendous amount of time and much despair, I distilled the right hand column of Table A1 into the major (and recurring) beliefs, values and assumptions underlying the Responsible Care initiative. They are discussed in this section, and summarized in Tables 4.3 through 4.20.

I have organized the major beliefs, values and assumptions of Responsible Care according to what or whom they concern. For example, Responsible Care implies certain beliefs, values and assumptions regarding the nature of:

chemical companies (e.g. their relationship with society, their capabilities, their effects on others), Responsible Care itself, chemicals, truth, emergencies, wastes, employees, communities, other parties (e.g. contractors, suppliers, distributors, customers), emergency response agencies, governments and the environment.

The process of distilling a few dozen key cultural elements from the 1,199 raw beliefs, values and assumptions in Table A1 was unavoidably subjective. I spent an inordinate amount of time trying to make the process as objective as possible. Nonetheless, several smaller and infrequently mentioned beliefs, values and assumptions did not make the final cut in what was basically a subjective decision as to what was most interesting and relevant to this thesis. No doubt another researcher, with different preconceptions, a different agenda, and a different cultural background, would have come up with a different distillation.

The following description of the culture espoused by Responsible Care includes beliefs, values and assumptions. Usually, the three types of statements are related and difficult to distinguish. For example, the value: *"The public should know about hazards and risks,"* may be based upon the beliefs: *"The public deserves to know what hazards and risks companies present it," "The public doesn't know the hazards and risks companies present it,"* and the assumption: *"The public can understand hazard and risk information."* It may also lead to the belief: *"Companies should proactively inform the public about hazards and risks."* Fortunately there is no real need to decide which statements are beliefs, which are values and which are assumptions. All are part of the culture of Responsible Care.

I have used a different font for statements that represent my interpretation of the culture of Responsible Care, as opposed to my own arguments. Think of statements in this font as being the words of the fictitious "founder and chief guru" of Responsible Care:

"So, founder and chief guru of Responsible Care, tell me, what is the world really like?"

Well, son, the world is a big place. Is there any specific part of the world you would like to know about?

4.3.1 Chemical Companies Within Society

"Well, this Responsible Care stuff has me wondering about how chemical companies fit into society. Tell me about chemical companies and society."

Okay, that sounds like a good place to start. Perhaps this table will help me to summarize.

Table 4.3 Responsible Care® Beliefs, Values and Assumptions concerning **Chemical Companies Within Society**

1	The company is the basic autonomous unit of action. Things are controlled by each company.
2	Chemical companies have the right to exist.
3	Companies should consider long term effects.
4	CCPA companies help each other in some matters.
5	All companies are subject to the same societal pressures.
6	Companies should all approach the management of chemicals similarly, and take similar positions on issues.
7	Companies' performance need not be consistent.
8	Companies are distinct from the public.
9	Companies have a role in society to play.
10	Companies are part of, and should be in harmony with, their communities.
11	Companies have obligations to several stakeholders.
12	Stakeholders' views may differ from those of companies.
13	Companies should consult with, and understand the needs and concerns of, all stakeholders.
14	Companies must consider stakeholder concerns and needs. Stakeholder interests must be addressed.

Allow me to explain in detail...

The company is the basic, autonomous unit of action in the chemical industry. Companies have rights, responsibilities, concerns, needs and resources. Most importantly, chemical companies have the right to exist. Companies will exist for the long term, and consequently should consider the long term effects of their activities. Information, methods, practices and feasibility are fundamentally controlled and determined by each individual company, though CCPA companies do help one another in some matters.

Though chemical companies are independent, they are all subject to the same societal pressures and should all respond similarly. They should all approach the management of chemicals similarly, and take similar positions on political issues (relating to Responsible Care). Companies' performance, however, need not be consistent.

Fundamentally, chemical companies are concerned with their own sites, not those of other chemical companies. Responsible Care cannot directly address non-CCPA companies.

Chemical companies are a discrete part of Canadian society, distinct from the public. They have a role to play in society. Companies are part of, and should be in harmony with, their communities (although not physically: buffer zones are required for safety).

Labour, interest groups, other business sectors, the public, the CCPA, the community, employees, customers, contractors, and others onsite are chemical companies' stakeholders. Other stakeholders may exist or arise. Companies have responsibilities and obligations to several stakeholders, including emergency response agencies, the communities in which they operate, and society in general.

Other stakeholders' views may differ from the views of chemical companies. Companies should understand the needs and concerns of all stakeholders, especially the community. Consulting with stakeholders is good. CCPA companies have done it in the past and advocate it.

Companies must consider stakeholder concerns and needs. Stakeholders' interests must be addressed when planning minimization and protection actions. Protection and minimization are more than just technical concepts; they require the addressing of stakeholders' interests.

4.3.2 The Responsible Care Initiative

Table 4.4 Responsible Care® Beliefs, Values and Assumptions concerning **The Responsible Care Initiative**

15	Responsible behaviour is a necessary part of doing business.
16	The CCPA knows what actions are necessary to gain public and employee confidence.
17	Responsible Care has clear intent, expectations, and meaning.
18	Responsible Care is a manifestation of deeper ethics, values, beliefs, and attitudes.
19	More and tougher generally-understood standards for acceptable behaviour in the chemical industry are necessary.
20	Companies should go beyond the literal requirements of the law, regulations, chemical lists, traditional definitions, even Codes of Practice.
21	Responsible Care includes all activities, no matter how central or peripheral to the business, even those not traditionally thought of as risky, and even those proceeding on a small scale.
22	Activities within and outside Canada are equally subject to Responsible Care.
23	Responsible Care applies to all facilities.
24	There are some limits to Responsible Care's applicability, e.g. small scale test marketing, foreign suppliers, community awareness for offices.
25	Activities that cannot be done according to Responsible Care must be done at all.
26	Community awareness is desirable but not essential.

Responsible behaviour is a necessary part of doing business in the chemical industry, to respond to and address public and community concerns, needs and expectations. With the Responsible Care initiative, the CCPA has determined what actions will be necessary to gain public and employee confidence in chemical industry operations. The initiative has clear intent, expectations and meaning, though achievement of its goals is not guaranteed.

Responsible Care codes and practices are manifestations of deeper ethics, values, beliefs and attitudes. The *way* chemical companies do business is important, not just "objective" results. Some chemical company activities are subject to generally-understood standards of acceptability. More and tougher generally-understood standards for acceptable behaviour in the chemical industry are necessary. Companies should go beyond the literal requirements of regulations, laws, chemical lists or traditional definitions. Similarly, companies are expected to comply with the intent of Responsible Care, not just its literal meaning.

Responsible Care includes all chemical company activities, no matter how central or peripheral to the business. For example, it addresses mode of transportation, successive stages of new products' lives, equipment and containers, siting, closure of sites and "all decisions".

Responsible Care also includes company activities not always perceived as risky. For example, Responsible Care addresses: new applications of existing products, hazards of the wastes associated with products; revised processes; and in-process materials; all items that could easily be missed.

Responsible Care includes activities that take place on a small scale, and might otherwise be overlooked. For example, research & development, initial use, lab waste, potential emergencies, small scale test marketing, construction, commission, start-up, and commercial samples are all subject to Responsible Care requirements. Actually, small scale test marketing is addressed by Responsible Care, showing the comprehensiveness of the initiative, but is subject to weaker hazard communication requirements than normal sales are, showing limits to the initiative's comprehensiveness.

Activities within and outside Canada are equally subject to Responsible Care, with the exception of suppliers outside Canada. Responsible Care - particularly those sections addressing community awareness, emergency response and hazardous waste management - applies to all facilities, not just plants, except that offices do not require community awareness.

Responsible Care is an essential part of doing business. Activities that cannot be done in accordance with Responsible Care are not done at all. The only exception is community awareness. It is appropriate to kill projects for environment, health or safety reasons.

4.3.3 Chemical Companies' Current Status and Capabilities

Table 4.5 Responsible Care® Beliefs, Values and Assumptions concerning **Chemical Companies' Current Status and Capabilities**

27	Some companies would be inclined to behave irresponsibly were it not for Responsible Care.
28	Not all companies would or could behave responsibly without industry support.
29	Companies' performance is not yet up to the standards of Responsible Care.
30	Past company actions may have been unacceptable.
31	The industry must improve, and in a timely manner.
32	Ongoing progress must be reported to the CCPA.
33	Companies only have to do what's practicable.
34	Collectively, CCPA companies have the expertise necessary to behave responsibly.
35	Generally, companies control their products, uses, processes, equipment, services and facilities, though sometimes not releases or risks.
36	Companies are generally capable of doing the things demanded of them by Responsible Care.
37	Companies can communicate Responsible Care to others and assist them.
38	Companies do need help from others, especially in dealing with emergencies.
39	Companies can be trusted to make difficult judgement calls.

Some chemical companies would be inclined to behave irresponsibly without Responsible Care. Not all companies would or could without industry support.

Companies' performance is not yet up to the standards of Responsible Care. For example, they do not yet understand products, manage chemicals or protect health to the degree that they should. Safety practices, performance, and waste management practices need improvement.

Some of companies' past actions may also have been unacceptable. Not all consequences of past waste management practices have been found yet.

The industry as a whole must improve, and in a timely manner. Ongoing progress must be reported to the CCPA. Timetables and milestones are appropriate. But companies only have to do what's practical.

Collectively, CCPA companies generally have the expertise necessary to conduct business responsibly. For example, companies know how to determine environmental sensitivity; companies know which emergency planning, handling, transportation, cleanup and waste management practices are responsible; companies can assess whether the capabilities and

performance of distributors, suppliers, waste management contractors and facilities are responsible; and companies can evaluate hazardous waste management and disposal technologies.

Generally, companies control what goes on with their products, uses, processes, equipment, services and facilities, although sometimes releases and risks are not under chemical companies' control, for example transportation incidents.

Thus, companies are capable of doing the things demanded of them by Responsible Care. For example, companies can define appropriate standards, train operators, assess carriers and customers, help carriers, and participate in improving technology. Companies can also communicate the importance and the requirements of Responsible Care to others. They can assist others, such as suppliers, distributors, transporters and customers in meeting Responsible Care requirements.

Companies do need help from others, especially in dealing with emergencies. Companies should help each other with emergency response.

There are some things companies cannot do. For example, hazardous waste cannot always be avoided, recycled, recovered or reused; complete information concerning previously used disposal sites may not be practicable; and chemical companies do not treat, dispose or clean up wastes.

Companies can be trusted to determine when actions are "appropriate," when circumstances are "special," and when wastes are "hazardous."

4.3.4 Management for Responsible Care

Table 4.6 Responsible Care® Beliefs, Values and Assumptions concerning **Management for Responsible Care**

40	Senior management commitment to Responsible Care is important
41	Acceptance or adoption of Responsible Care are insufficient without implementation and performance of specific practices.
42	Clear assignment of Responsible Care responsibilities is necessary.
43	Responsible Care must be part of planning and business processes and operations.
44	Management systems are necessary, Activities should be "procedurized."

45	Writing policies, standards and procedures down makes them more effective and responsible.
46	Programs should be kept active and up-to-date; they should change over time.
47	Programs, plans, procedures, policies and standards should be tested and audited regularly.
48	Responsible Care programs are not always perfect at first; sometimes they need correction.
49	Companies must improve continuously.
50	Chemical companies will never be perfect.
51	What might be "satisfactory" today will not be satisfactory in future.
52	Changes in company activities can cause new hazards or risks. They should be recorded and managed.

Senior management commitment to Responsible Care is important because senior management controls company behaviour.

Commitment is important in spurring action, but Responsible Care pledges must be fulfilled. Acceptance or adoption are insufficient without implementation and performance. Clear assignment of responsibilities to specific people is necessary to ensure action. And specific practices are necessary, not just general policies and principles. Responsible Care must be considered in planning at all levels. It must become a part of business processes and operations in order to be effective.

Responsible Care requires management systems. Activities are made safer or more effective by planning, controlling and "procedurizing" them. Correct procedures for all circumstances can be known in advance. "Procedurizing" can minimize risks. Procedures must be clearly spelled out. Writing down policies, standards, procedures and results of analyses makes them more effective and more responsible.

Programs should be kept active. For example, hazard analysis should be ongoing, and communication and training programs should be maintained. Programs, plans, procedures, policies and standards must be tested and audited regularly. Plans, practices, and programs should be updated regularly.

Chemical company Responsible Care programs are not always perfect at first; they sometimes need improvement. Management systems may not achieve their purposes. Corrective action is sometimes necessary. In some areas,

improvement will be slow; continuous improvement is the only way to proceed. In fact, chemical companies will never be perfect, so they must improve continuously.

What might be "satisfactory" today will not be satisfactory in the future. New knowledge and regulation change companies' ability and/or desire to perform. Policies, standards, procedures and practices should change over time in the effort to continuously improve.

Change in practices and procedures are necessary and desirable, but changes to equipment, processes, materials, hardware or software can cause new hazards or risks. Thus changes should be recorded and managed carefully.

4.3.5 Chemical Companies' Effects on Others

Table 4.7 Responsible Care® Beliefs, Values and Assumptions concerning **Chemical Companies' Effects on Others**

53	Companies affect others through their actions and decisions.
54	Companies should think about how their actions and decisions affect others.
55	Companies should try to characterize how they affect others.
56	Many operations could be hazardous or risky to the public or the environment. Many are inherently hazardous or risky.

Chemical companies affect others through their actions and their decisions. For example, the selection of a site's location can affect the community, the environment, other industries, utilities, and transportation routes.

Companies should think about how their actions and decisions affect things such as the community, the environment, their industrial neighbours, utilities and transportation routes. Where possible, they should try to characterize their effect, for example, companies should know what they emit to the environment. Long-term health and environmental effects are worthy of special attention.

Many chemical industry operations could be hazardous or risky to the public or the environment. In fact, many industry operations are *inherently* hazardous and risky to the public or the environment. Risks arise from several sources,

including the chemicals themselves, the processes used to manufacture and distribute them, and the wastes they generate.

4.3.6 Chemicals

Table 4.8 Responsible Care® Beliefs, Values and Assumptions concerning **Chemicals**

57	Chemical compounds are borne of R&D and proceed through test marketing to manufacturing.
58	Chemicals have linear lives: they are manufactured, distributed and used, then they become wastes.
59	New applications for chemicals can arise.
60	Chemicals are inherently hazardous and can harm humans and/or the environment.
61	Hazards and risks are part of a chemical's character. Chemical products are not complete without hazard and risk information.

Chemical compounds tend to be born of the chemical industry's own research efforts. They then proceed through development and test-marketing to full-scale manufacturing. Once established, chemicals themselves also tend to live rather linear lives: they are manufactured, distributed, and used. Chemical products can be used for different applications, and new applications arise as time passes. After use, chemicals become wastes, which can be managed in a number of different ways.

Chemicals are inherently hazardous. Hazards pose corresponding risks. Thus chemicals can adversely affect humans and/or the environment. A chemical's associated hazards and risks are part of its character. In fact, chemical products are not complete without information about their hazards and risks. These hazards and risks depend upon the application to which the chemical is being put, therefore a new application of an existing chemical is also not complete without new hazard and risk information.

4.3.7 Hazards, Risks and Truth

Allow me to digress briefly to discuss Responsible Care's views on risks and truth.

Table 4.9 Responsible Care® Beliefs, Values and Assumptions concerning **Hazards, Risks and Truth**

62	Some hazards and risks are worse than others.
63	Risks are at least approximately quantifiable, meaningful, and worth measuring and controlling.
64	Risk does not have to be eliminated. Some risks are acceptable.
65	Effects on humans and the environment are knowable.
66	Potential hazards and potential impacts are as important as actual hazards and impacts.
67	Companies should evaluate potential and actual hazards and risks as early as possible.
68	Not all information on hazards and risks is available.
69	Hazards and risks can change with time, and should be evaluated regularly.
70	Truth is established by science and experts.
71	Knowledge and understanding change constantly.
72	Companies must continually work to improve their understanding, knowing that complete understanding is unlikely.

Risks are associated with hazards. Some hazards are worse than others, and some risks are worse than others. Risks are at least approximately quantifiable. Risk numbers are meaningful and worth measuring, controlling and minimizing. Risk does not have to be eliminated. Some risks are acceptable, while others aren't. Risks can result in injury or damage. Hazards and risks are site specific.

Effects on humans and the environment are knowable. In fact, they are at least partially knowable several years in advance. Potential hazards and potential impacts are as important to know and document as actual hazards and impacts. Companies should understand and evaluate potential and actual hazards and risks as early as possible.

But not all information on hazards and risks is available. Hazards and risks can change with time (either in reality, or the values calculated can change thanks to new knowledge). Both potential and actual hazards and impacts should be evaluated regularly.

Truth, such as required in risk assessment, is established by science and by experts. As such, experts' opinions are highly valued. Knowledge and understanding change constantly. Chemical companies must continually work

towards improving their understanding, knowing that complete understanding is unlikely.

4.3.8 Understanding and Managing Chemical Risks

Table 4.10 Responsible Care® Beliefs, Values and Assumptions concerning **Understanding and Managing Chemical Risks**

73	Chemicals, chemical products, and their uses must be understood and managed.
74	Chemicals' associated hazards and risks must be understood and managed.
75	Chemicals and products must be managed throughout their life cycles. Companies have some responsibility for all points in chemical life cycles.
76	Companies know about their chemicals, products and services and can advise customers.
77	Companies know about the wastes associated with their products.
78	Companies must protect people and the environment from their chemicals, products, processes and operations.
79	Companies don't want to hurt society.
80	Companies must not pose unacceptable risks.
81	Companies must ensure risks and effects are acceptable to stakeholders.
82	Effects, hazards, risks, injuries and damages should be reduced and minimized.
83	Effects, hazards, risks can be controlled.
84	Human factors must be considered in risk reduction.
85	The impacts, potential emergencies, hazards, handling and disposal of chemicals should be considered as early as possible.

Because of their inherent riskiness, chemicals, chemical products, their uses and their applications must be understood and managed. Their associated hazards and risks must also be understood and managed. And because chemicals can pose hazards and risks at any point in their life cycles, chemicals and chemical products must be managed throughout their life cycles.

Chemical companies know about their chemicals, products and services and can advise customers and end users who tend to know less. Companies know about the wastes associated with their products, including which should be considered hazardous, and where customers may find opportunities for reduction, reuse, recycling or recovery. Companies consider and form beliefs concerning which hazard information is vital to the health and safety of the end user, though they are not certain.

A chemical company has some responsibility for its chemicals, and the hazards and risks of its chemicals, at all points in their life cycles. Even at

points in chemical life cycles where the company does not normally legally share responsibility for the chemicals, it must assume some moral responsibility.

Chemical companies must protect people and the environment from their chemicals, products, processes and operations, including hazardous waste destruction, treatment, disposal or containment.

Companies don't want to hurt society. Companies must not pose unacceptable risks. Companies are responsible for ensuring that the risks and effects of their activities are acceptable to their stakeholders, including the public. Safeguards should be taken to counter specific risks. For example, companies should consider alternate transportation modes and routes. Effects, hazards, risks, injuries and damages should all be reduced and minimized.

And effects, hazards and risks can be controlled. Companies use several techniques or strategies to reduce hazards and minimize risks. Technology, design, procedures and emergency response can all control risks. Human behaviour affects hazards and risks, so human factors must also be considered in risk reduction efforts. Controlling risks is another reason for considering things such as the impacts, potential emergencies, hazards, handling and disposal of chemicals as early as possible.

4.3.9 Chemical Emergencies

Table 4.11 Responsible Care® Beliefs, Values and Assumptions concerning **Chemical Emergencies**

86	Emergencies can happen, and can happen anywhere
87	Emergencies will always happen; they cannot be totally eliminated.
88	Chemicals are especially important in emergency situations.
89	Companies should prepare for accidents.
90	Companies should consider compensating people dislocated by company emergencies.
91	The number and consequences of incidents can be reduced (incidents can be prevented).
92	Health and safety performance can be meaningfully measured.
93	Occupational safety will be an issue for the long term.

Despite efforts to reduce and minimize incidents, emergency situations such as explosions, fires and releases can still happen, and can still happen anywhere. In fact, these emergency situations, along with smaller accidents, incidents, spills and emissions will always happen to a certain extent; they cannot be totally eliminated. Likewise, the impacts and injuries that can result from such incidents cannot be totally eliminated. (Even though total elimination is not possible, the goal of total elimination may still serve as a useful management tool.)

Chemicals are especially important in emergency situations. Their presence and character, combined with how they are dealt with, can determine whether the emergency has insignificant or enormous impacts. Thus accidents happen sufficiently often and with sufficient consequences that companies should prepare for them.

People may be dislocated and need money because of an emergency involving company chemicals. In this case, the company should consider compensating them for the short term, but not for the long term.

Accidents, incidents, injury and damages to humans or the environment can also be prevented. Health and safety performance can be meaningfully measured, and safety can be improved. The number and consequences of incidents and their impacts can be reduced. Such efforts should be undertaken, because occupational safety will be an issue for the long term.

4.3.10 Normal Chemical Operations

Table 4.12 Responsible Care® Beliefs, Values and Assumptions concerning **Normal Chemical Operations**

94	Chemical facilities and hazardous waste sites tend to have finite lives.
95	Some adverse effects develop only after facilities are closed. Companies must protect against future latent environmental effects.
96	Companies know the effects, hazards and risks of their operations.
97	Companies can determine which effluents and emissions should be monitored or controlled.

Chemical company facilities and hazardous waste sites generally have finite lives. Some adverse effects of company operations develop only after facilities

are closed. Companies must protect against future latent environmental impacts. Post-closure effects need only be assessed when a facility is closed.

Companies know the effects, hazards and risks of the operations they use to manufacture and distribute their products. Companies can determine which effluents and emissions should be monitored or controlled.

4.3.11 Chemical Wastes

Table 4.13 Responsible Care® Beliefs, Values and Assumptions concerning **Chemical Wastes**

98	Non-hazardous waste is not worthy of as much concern as hazardous waste.
99	Companies should classify waste as hazardous or non-hazardous based on their own knowledge, not regulatory lists.
100	Companies are encouraged to apply the same principles to non-hazardous waste as they do to hazardous waste.
101	Hazardous wastes must be managed throughout chemical and chemical product life cycles.
102	Companies should look continuously for sources of waste, as these can change.
103	There is a hierarchy of hazardous waste management options (see Chapter 2 for details). Companies should look for opportunities to move up the hierarchy as early as possible and continuously.
104	Hazardous waste management and disposal technology improves continuously.
105	Companies should participate in efforts to improve hazardous waste management technology.
106	Hazardous waste treatment and disposal facilities are desirable. Companies should promote them.
107	Land should be useable after a hazardous waste treatment or disposal site is decommissioned.
108	Companies should identify, study and characterize previously used treatment or disposal sites.
109	Hazardous waste generation should be recorded.

There are two kinds of waste. Some wastes are "hazardous," while others are not. Chemical companies should decide which wastes to treat as hazardous based on their own knowledge, and not limit their attention to chemicals found on regulatory lists. Non-hazardous waste is worthy of concern, but not as much concern as hazardous waste. Companies are encouraged to apply the same principles to the management of non-hazardous waste as for hazardous waste, but it is their choice.

Hazardous wastes can be generated at different points in the life cycles of chemicals and chemical products, so they must be managed throughout

chemical and chemical product life cycles. Waste sources - and the standards for what makes a source significant - can change with time, so companies should continuously look for sources of waste.

There is a hierarchy of preferred hazardous waste management options: Reduction at source is preferred to recycling, recovery or re-use. Recycling, recovery or re-use are preferred to destruction or treatment that renders the waste non-hazardous. Destruction or treatment that renders the waste non-hazardous are preferred to secure containment and monitoring of hazardous wastes. This is because while landfills and geological formations can be secure, hazardous waste containment may not stay secure indefinitely. Thus some waste management processes are presumed to be inherently superior to others.

Opportunities to eliminate, reduce, reuse or recycle wastes can also change, so companies should look for opportunities to move up the waste management hierarchy as early as possible in development, and continuously thereafter.

Hazardous waste management and disposal technology improves continuously. The rate of improvements can be increased by chemical company participation, so companies should participate in technology improvement efforts.

Notwithstanding the desirability of moving up the hazardous waste management hierarchy, hazardous waste treatment and disposal facilities are desirable. Companies should promote the establishment of such facilities.

Hazardous waste treatment or disposal sites can potentially have deleterious effects on the land they occupy, but the land should be useable after the site is decommissioned. As such, companies should consider in advance any effects or land use restrictions that will manifest themselves after a facility or site is closed.

Companies should identify previously used treatment or disposal sites and characterize their involvement at these sites as completely as possible. The

sites themselves should be studied. The nature and quantities of the materials companies sent to sites is important to know. Hazardous waste generation and previous hazardous waste disposal should be recorded. Recovery, recycling or reuse need not be recorded.

4.3.12 Chemical Company Employees

Table 4.14 Responsible Care® Beliefs, Values and Assumptions concerning **Chemical Company Employees**

110	Employee behaviour will not necessarily simply reflect company initiatives.
111	The work environment is important to monitor.
112	Employees do not have to be isolated from risk.
113	Companies must not pose unacceptable risks to employees, and must protect them.
114	Employees deserve information about hazards and risks and should feel that they know them.
115	Employee confidence in company activities is desirable.
116	Employees do not know hazards, the law, or how to behave responsibly without information and training.
117	Employees can understand risk assessment information.
118	Companies should inform and train employees in hazards, the law, standards and emergency response.
119	Employees may not behave as trained to; they should be assessed and re-trained as necessary.
120	Individuals have freedom of action at companies and can affect outcomes. They can help or hinder Responsible Care.
121	All employees must be involved in Responsible Care responsibilities.
122	Individual efforts deserve support and recognition.
123	Responsible Care is good for employee morale and pride.
124	Employees can affect community perceptions. Companies should encourage them to speak out.

Employees and the company are different. Employees' behaviour will not necessarily simply reflect company initiatives.

The work environment is important to employee safety and therefore is important to monitor. It is different than the ambient environment.

Employees do not have to be isolated from risk, but companies must not pose unacceptable risks to employees. Companies must protect employees and others onsite from hazards and risks.

Employees and others onsite deserve information about hazards and risks, including hazards and risks involved in chemical distribution. Employees

should feel that they know hazards and risks, and that they and the environment are protected from them.

Employee confidence in company activities is desirable. Employees become confident of company activities if companies manage them responsibly using systems.

Employees do not know hazards, the law, or how to behave responsibly without information and training. However, employees and others onsite can understand risk assessment information if it is provided to them. Companies should inform and train employees and contractors in subjects such as hazards, the law, applicable standards and emergency response. In principle, employees behave as they have been trained to. However they may not; they must be assessed and re-trained as necessary.

Individuals have some freedom of action at companies and can affect outcomes. Individuals can help or hinder Responsible Care. For example, employees and contractors may be predisposed to ignore regulations. Individuals should accept Responsible Care responsibilities. All employees must be involved, share responsibility and act appropriately. Individual efforts deserve support and recognition, in fact support for individuals will improve results. Responsible Care is good for employee pride and morale. For example, the CCPA gives the names of company contact people to the public. These people take responsibility and have pride in their duties.

Employees and contractors can - and might be encouraged to - affect community perceptions by speaking out in their communities. Companies should encourage their employees and contractors to advocate on the industry's behalf.

4.3.13 Communities Around Facilities, and the Public

Table 4.15 Responsible Care® Beliefs, Values and Assumptions concerning **Communities Around Facilities and the Public**

125	Communities around facilities and along transportation routes deserve more attention than the general public does.
126	Companies want community to have confidence in them. They want to be proud of their standing with communities and other businesses.
127	Doing Responsible Care increases a company's standing with its community. If communities understand company activities, they will perceive the company more favourably.
128	Companies and communities can help each other, including with their images.
129	Public perception and confidence is important and arises from responsible management using systems.
130	Communities have rights, responsibilities, concerns, needs, resources and interests.
131	Community interests are sufficiently homogeneous to be represented by organizations or individuals.
132	Community interests and representatives change over time.
133	Some community members have concerns. Some concerns are "legitimate;" others are not.
134	Companies can and should understand community rights, concerns and needs. Citizens and interest groups are worth listening to.
135	Companies should cooperate, coordinate and work with communities.
136	Companies should be open with public, telling it what they are doing if it asks. Companies should prepare to answer questions.
137	Trade secrets are important to protect.
138	Unauthorized access to facilities threatens safety.
139	Communities and the public do not have to be isolated from risk.
140	Communities have the need and right to know the hazards and risks presented to them by chemicals and transportation; and corresponding safeguards.
141	Members of communities and the general public are generally unaware and ignorant of chemicals.
142	Companies should develop information to regularly provide unsolicited to the community.
143	Communities want to understand and be proud of companies.
144	New areas of public concern arise over time and can grow into major issues. Public demands change continually.

There is a distinction between the public in general and the communities who live around chemical facilities or along chemical transportation routes. Communities around facilities and along transportation routes deserve more attention from individual companies than the general public does.

Local communities should be treated as well as employees, partly because they will be around for the long term. Companies want community support, and want communities to have confidence in company activities. Companies' standing with their communities and other businesses is important to them.

Companies want to be proud of their relationships with their communities. Because communities and other businesses form perceptions specific to each chemical company, doing Responsible Care will increase a company's standing in its community.

Companies' and communities' images are tied to each other. The two can help each other gain mutual benefits. Wider communities (i.e. the general public) will judge companies by this relationship. Public perception and confidence are also important to the chemical industry. The public will become confident of industry activities if they are managed responsibly using systems. Companies need to project their commitments to a wide audience in an attempt to change perceptions.

Communities have rights, responsibilities, concerns, needs, resources and interests. Community interests are sufficiently homogenous to be represented by organizations or individuals. Community interests, representatives, and recollection change over time.

Some people within communities are interested in chemical companies and have concerns about all types of chemical operations and sites. Some concerns are "legitimate;" others are not. Companies can and should understand community rights, concerns and needs, and can determine who represents the community. Citizens and interest groups are worth listening to. Companies should cooperate, coordinate, and work with communities.

Companies should prepare for questions, responding to them with information. Companies should be open with the public, telling it what they know or are doing if asked. Generally, the onus is on the public to ask for information; it is not on companies to provide it (some exceptions are presented below).

Companies cannot be open with all information, however. Trade secrets are central to companies' competitiveness, which is very important. Trade secrets belong to companies. Not all company claims of "trade secret" are "legitimate," but the secrecy of the legitimate ones must be protected. Protecting trade secrets and competitiveness is more important than being open with

communities, except in the case of hazard information. Communities have a right to know accurate hazard information regardless of trade secrets.

Notwithstanding all this talk of openness, unauthorized access to facilities is a threat to safety. Facilities are safer if secure.

Communities and the public do not have to be isolated from risk. But communities need to know the risks companies present it. Communities have the right to know the hazards, risks and safeguards presented to them by companies' chemicals, products and transportation. Communities along chemical transportation routes have the right to know volumes shipped, risks, and safeguards taken.

Members of communities and the public are generally unaware and ignorant. Not only may they have questions, but they may need help in finding information. Communities would not know health and safety information if companies did not tell them. Companies should develop information to provide unsolicited to the community on a regular basis to inform it about chemicals. This communication has a purpose: communities should be confident that they know the hazards and risks they face.

Communities should be confident that they and the environment are protected from hazards and risks. Communities should help companies in informing people and protecting people and the environment. But members of the community do not know about company practices and standards, and could not assist in the details of business.

Communities can and want to understand chemical companies. They want to be proud of their relationship with companies. Communities should include companies in their emergency response planning.

New areas of public concern arise over time and can grow into major public issues. Public demands are always changing.

Communities should know about planned improvements in chemical distribution. If communities understood industry standards, they would

perceive the industry more favourably. Chemical industry efforts and commitment deserve recognition; in some cases more than the industry has received.

4.3.14 Other Parties (e.g. Contractors, Suppliers, Distributors, Customers, etc.)

Responsible Care addresses several other business parties, such as R&D contract labs, onsite contractors, suppliers, transporters, distributors, customers, end-users and waste management contractors. Many of the cultural beliefs, values and assumptions regarding each of these types of businesses are similar. I have tried to group them together in this section under the label "other parties." Responsible Care pays particular attention to some specific parties, notably transporters, distributors and customers. Where appropriate I have singled out these businesses.

Table 4.16 Responsible Care® Beliefs, Values and Assumptions concerning **Other Parties** (e.g. Contractors, Suppliers, Distributors, Customers, etc.)

145	Other parties are handling company products.
146	Companies are partly responsible for ensuring that other parties behave responsibly, including policing them, within limits.
147	The actions of many different parties can affect safety.
148	Other parties are generally held to a subset of Responsible Care standards.
149	Other parties are still fundamentally responsible for their actions.
150	Other parties are only held to Responsible Care standards where company products are involved.
151	Customers do not have to be isolated from risk; but companies must not pose unacceptable risks.
152	Other parties' confidence is desirable. Responsible Care will increase companies' standings with other parties.
153	Other parties may not behave as responsibly as they should.
154	Other parties might not know all hazards and risks.
155	Companies generally know a lot more than other parties.
156	Companies should carefully select the other parties they do business with.
157	Other parties can change their behaviour.
158	Companies should cooperate, coordinate, and work with other parties and nudge them into responsible behaviour.
159	Companies would jeopardize sales for the sake of Responsible Care.
160	Other parties deserve information on hazards and risks (even potential new customers).
161	Companies can police the actions of other parties, but only to a certain extent.
162	Companies must verify that other parties are behaving responsibly, but only to a certain extent.

Other parties are handling company products. Because companies must share responsibility for effects during the whole life cycle of their products,

companies are partly responsible for ensuring that other parties behave responsibly. Safety can be affected by many different parties, for example, users, manufacturers, distributors, importers, operators of warehouses and terminals, carriers, and agencies can all affect distribution safety. Companies are responsible for policing others, within limits.

Other parties are generally held to some subset of Responsible Care standards. For example, onsite contractors and toll manufacturers should perform as employees would; distributors must meet minimum Responsible Care standards; waste management contractors must be permitted and behave according to Responsible Care. Because minimum standards are different for different parties, they should be clearly defined.

Suppliers outside Canada are not subject to Responsible Care requirements.

Other parties are still responsible for their actions. For example, customers decide whether or not to follow responsible practices. Except in special cases (as defined by chemical companies), responsibility is fundamentally a customer responsibility. And other parties are only held to Responsible Care practices where company products are involved. For example, what waste management contractors do with others' wastes is up to them.

Customers do not have to be isolated from risk, but companies must not pose unacceptable risks to customers.

Confidence of other parties in chemical companies is desirable. Doing Responsible Care will increase a company's standing with other parties.

Other parties, especially distributors and customers, may not handle chemical products as responsibly as they should. Some transporters are better than others. Other parties may behave irresponsibly because they do not know better, or because they are not able to. For example, they may not know as much about chemicals, products, or services as chemical companies do. (Note that this assumption applies even to suppliers, who one might think would know more about their products than their customers, the chemical companies.) Other parties might not know all hazards and risks. Customers

may not know how to manage waste or empty containers. Generally, Responsible Care is built on the assumption that chemical companies know a lot more than the other parties they deal with (including governments and communities).

Companies should carefully select their suppliers, distributors, waste management contractors and disposal sites.

Other parties can change their behaviour. They are equals worth working with. Companies should cooperate, coordinate, and work with them. For example, companies should tell customers how to manage wastes and empty containers. Customers may need assistance in safe handling, use and waste management, but once they have it they will behave appropriately. Companies should help others and nudge them into responsible behaviour.

Companies value responsible use enough to jeopardize product sales, for example by encouraging customer reduction, re-use or and recycling.

Other parties deserve information on hazards and risks. Even potential new customers should be informed of hazards and risks.

Companies can, to a certain extent, police the actions of suppliers, transporters, distributors, contractors and customers. Companies can control policies, standards, analyses, protocols and methodologies at contract labs. Companies can choose and pressure their suppliers and distributors, because suppliers and distributors want companies' business. Companies can control contractors who treat, destroy or dispose of hazardous wastes. Companies can in some cases require customers to follow Responsible Care Codes, but can only go so far, and can't force safety.

Companies must verify that other parties are performing responsibly. However, companies only have to go so far (due diligence) in checking up on the performance of other parties.

Customers communicate within their organizations, but not necessarily to end users. Companies should require customers to pass information along to end-users.

4.3.15 Emergency Response Agencies

Table 4.17 Responsible Care® Beliefs, Values and Assumptions concerning **Emergency Response Agencies**

163	Emergency response agencies may not know all they need to handle chemical emergencies.
164	Chemical companies have information, expertise, equipment and media relations skills that would be useful to first responders.
165	Emergency response agencies deserve more information than the public. The onus is on companies to provide such information.
166	Authorities can help companies with emergency response. Companies should cooperate.
167	In emergencies, companies are more generous with their people and possessions than normally.

Emergency response agencies may not know all they need to know to handle chemical emergencies. Local authorities may not have an integrated emergency response framework.

Chemical companies have information, expertise, equipment, materials and media relations skills that the community and first responders would find useful. Emergency response agencies deserve more information than the public or communities do. The onus is on chemical companies to provide emergency response agencies with information.

Local authorities can help chemical companies plan and deal with emergencies. Companies should cooperate, coordinate, and work with governments, agencies and authorities. In the case of an emergency or accident, companies are more generous with their people and possessions than normally.

4.3.16 Governments

Table 4.18 Responsible Care® Beliefs, Values and Assumptions concerning **Governments and Regulation**	
168	The government plays an important role in society.
169	Public policies and regulation can legitimately govern chemical companies' activities. Some regulation is necessary.
170	Laws and regulations can be met or exceeded, in letter or in spirit. They are not always met.
171	Regulations are always changing. But they should not change so fast as to cause disorder.
172	Government decisions should recognize the views of everyone who is affected.
173	Current distribution public policies, standards and regulations are out of touch.
174	Governments need help. Companies should proactively participate, assisting and influencing public policies, standards and regulations.
175	Companies should advocate to governments. They should encourage their employees to do likewise.
176	Governments should emphasize prevention and industry proaction in their policy agendas.
177	Voluntary action ("self-regulation") is preferable to regulation. It is important to demonstrate this.
178	The government deserves a say in determining voluntary industry actions.
179	Companies should tell governments what they know about old waste disposal sites.

The government plays an important role in society. Public polices and regulation can legitimately govern chemical companies' activities and deserve respect. In fact, some government regulation is necessary. Companies need regulatory pushes from government, or else they might miss things. The law is important, affects companies, and they should submit to it.

Laws and regulations can be met in letter, but they can also be met in spirit. Laws and regulations can be exceeded.

But chemical companies choose whether to know, meet, and/or exceed regulations, in letter and/or in spirit. And companies and other parties do not always know or meet laws and regulations.

Regulation is always changing and is generally beyond the control of chemical companies. But regulatory changes should not be so rapid as to cause disorder and chaos in the chemical industry.

Government decisions should recognize the views of different groups. Everyone who is affected deserves a say in regulatory development. Standards, regulations and public policies should be fair, achievable and based on truth. Current distribution public policies, standards and regulations are outdated and out of touch.

Governments need help in setting standards. Companies should take the initiative and work with and assist governments. Companies should participate in developing standards. Companies should influence public policies, standards and regulations.

Companies should advocate to, and assist, organizations, associations, governments and customers in the effort to influence public policies, standards and regulations. Companies can determine which organizations they should advocate to. Companies should encourage their employees and contractors to do the same.

In particular, companies should promote the establishment (and licensing) of treatment and disposal facilities, and should push governments to emphasize prevention and industry proaction in their policy agendas.

With Responsible Care, the chemical industry is trying to accomplish "self-regulation." Voluntary action is preferable to, and can be more effective than, external regulation. It is important that the industry demonstrate that it can improve its performance voluntarily. The government deserves a say in determining appropriate voluntary actions. Companies should check up on themselves.

Old waste sites are primarily a government responsibility, but companies may know more than government agencies about old disposal sites. Companies should tell agencies what they know about old disposal sites.

4.3.17 The Environment

Table 4.19 Responsible Care® Beliefs, Values and Assumptions concerning **The Environment**	
180	Environmental protection will be an issue for the long term.
181	The environment does not have to be isolated from risk, but companies must not pose unacceptable risks to the environment.
182	Companies can determine which areas are more environmentally sensitive than others.

Environmental protection will be an issue for the long term.

The environment does not have to be isolated from risk, but companies must not pose unacceptable risks to the environment. Some areas are more environmentally sensitive than others, and the company can determine which.

The emphasis on local communities means that environmental risks to uninhabited areas are not explicitly considered by anyone other than chemical companies themselves.

4.3.18 The CCPA

Table 4.20 Responsible Care® Beliefs, Values and Assumptions concerning **The Canadian Chemical Producers' Association (CCPA)**	
183	The CCPA represents companies to society and raises awareness.
184	Companies have obligations to the CCPA.
185	The CCPA helps companies. Companies should cooperate, coordinate, and work with the CCPA.

The CCPA represents companies (as a group) to society and raises awareness. The CCPA tries to anticipate and stay ahead of public reactions and issues.

Companies have obligations to CCPA which should be respected. The CCPA can tell companies what to do. The CCPA wants to be confident that all its members are responsible.

The CCPA helps companies to meet its expectations. Companies should cooperate, coordinate, and work with the CCPA. Companies should coordinate with CCPA programs.

Chapter 5

Assessing an Organization's Culture: Methodology

> "One belief that many researchers use...is this: Researchers choose a method on purely rational grounds based on its suitability for the research subject. In fact, we all develop rationales, almost always reconstructive, for the methods we use... But researchers' choices of methods are more complicated than this. Their choices are conditioned by factors such as their habits of mind, their facility with certain methods, the acceptance of those methods by the scholarly community, and the ease with which their use can be explained, to say nothing about present resources and researchers' own courage. Sometimes the methods used yield tedious exercises in ersatz researching. But as Kuhn and many others have made clear, the paths to knowledge are by no means equivalent to pristine searches for truth, wherever that may lead, and often peculiarities of circumstance are as responsible for the form that research takes as any reconstructive rationale provided by the researcher." (Adams & Ingersoll 1985 p. 229)

5.1 Organizational Culture Research Methodologies

Chapter 4 identified the beliefs, values and cultural assumptions that one would expect to find at the hypothetical company that has completely and totally adopted and internalized Responsible Care. The next question - that addressed in this chapter - is how one would go about determining if (and to what extent) these beliefs, values and assumptions have been internalized at a real, actual, company.

The organizational culture literature - so expansive on the subject of what organizational culture is - is actually quite slim in regards to how organizational culture should be 'measured' or 'characterized.' Several different streams of organizational culture research methodology have nonetheless arisen. Most prominent among them are ethnography, survey research and 'clinical research.'

5.1.1 Ethnography

As has been mentioned, the concept of culture originated in anthropology. Anthropologists study cultures through the practice of *ethnography*. For most social scientists, the ethnographic paradigm is symbolized by the image of Franz Boaz "stepping off the boat in an [Inuit] village with his suitcase in hand, preparing for a long stay in residence" (Sanday 1983 p. 19). An ethnographer spends a long period of time living intimately with the population he or she is studying. The purpose is to "feel what life is like for the people in that situation" (Sanday 1983 p. 20).

A classic description of the ethnographic method comes from Conklin:

> "...a long period of intimate study and residence in a well-defined community employing a wide range of observational techniques including prolonged face-to-face contact with members of local groups, direct participation in some of the group's activities, and a greater emphasis on intensive work with informants than on the use of documentary or survey data." (Conklin 1968 p. 172)

In a sense, the ethnographer merely does the same thing a new member joining a culture does - though presumably at a quicker pace:

> "People everywhere learn their culture by observing other people, listening to them, and then *making inferences*. The ethnographer employs this same process of going beyond what is seen and heard to *infer* what people know. It involves reasoning from evidence (what

we perceive) or from premises (what we assume)." (Spradley 1979 p. 8) (emphasis in original)

This process is difficult, but not impossible. After all, everyone does it several times in his or her life.

Anthropological ethnographic studies typically take a year or more to complete.

5.1.2 Survey Research

The opposite extreme to the ethnography methodology is *survey research.* Some students of organizational culture propose that the culture of an organization - or more to the point, of several organizations in a short period of time - can be measured by having individual organization members complete questionnaires concerning their values. Such approaches have been especially popular in the "how-to" management literature.

The nature of a questionnaire is that the researcher decides which questions are worth asking, and often also the list of acceptable answers. The researcher pre-determines the dimensions along which culture will be measured. Several different sets of "the dimensions of organizational culture" are proposed in the literature, though they seem to share little in common.

5.1.3 Clinical Research

My selection of questions whose answers form the basis of cultural assumptions in Chapter 4 was heavily guided by the work of Schein. Schein (1991) advocates the use of a third methodology for studying the cultures of organizations, a methodology he terms "clinical research." Using this methodology, an organizational consultant observes organizational phenomena as a byproduct of helping his or her client solve a specific problem. The main advantage to this approach is that organization members have an incentive to help the consultant researcher unearth their culture. Another advantage is that in trying to solve a specific problem, the researcher

"feels" the organizational culture at work in a dynamic situation, rather than simply observing it.

5.2 The Case Against Survey Research

Measuring organizational culture by questionnaire offers the advantage that a large number of respondents at a large number of companies can be surveyed quite quickly. In addition, the data generated this way is easily quantifiable and easily subjected to 'tried-and-true' statistical analyses. However, this methodology also involves several drawbacks.

The first problem with surveys is simple to explain: people don't take them seriously. I know how seriously I take the surveys that I am asked to complete. If I fill them in at all, I do so with haste and without much thought.

A second problem with surveys is that their intentions can be easily misunderstood. Respondents can think that they are being tested in some way, and may try to provide "right" answers instead of responding according to their own beliefs. Such behaviour would be fatal for this thesis, because the "right" answers are widely available to chemical industry employees in the form of the document "Responsible Care: A Total Commitment" (CCPA 1992a) (this is the document that appears in the left hand column of Table A1). Respondents might simply look for survey answers in this document.

And even if respondents did respond purely according to their own beliefs, this might in itself invalidate the survey methodology as a means of measuring organizational culture. If culture is a set of shared beliefs, values and assumptions, then individual responses are unlikely to grasp the shared essence of the culture.

A fourth objection to the survey methodology is based on the belief that language and semantics are central to culture:

> "Both tacit and explicit culture are revealed through speech, both in casual comments and in lengthy interviews. Because language is the primary means for transmitting culture from one generation to the next, much of any culture is encoded in linguistic form." (Spradley 1979 p. 9)

If culture is encoded in linguistic form, as Spradley suggests, then preparing questions for a survey in advance is impossible, because until the researcher understands the culture, he or she cannot phrase his or her questions in the terms of the culture: "until you know the question that someone in the culture is responding to you can't know many things about the responses." (Black & Metzger 1965 p. 144)

Subtle differences in language semantics from culture to culture can lead to misunderstandings. The respondent can misunderstand the researcher's intended question and therefore answer a different question. Or, the respondent can translate either the question or the answer into terms he or she thinks the researcher will understand. This also leads to distorted results. Spradley (1979, pp. 18-19) uses the following example to illustrate the point: If you ask a tramp: "Where do you live?", he will assume that you - as someone from outside the tramp culture - really want to know something like: "Do you have a room, a house, or an apartment with an address?" and will answer: "I don't have a home." On the other hand, if you were to ask: "Where do you usually make a flop?", you might get an answer referring to a car, a mission, a place of work, or a bedroll. And with a little further exploration, you might discover that in fact one of the most important identity features of a tramp is the kind of homebase he has. The knowledge to phrase the question in terms of "making a flop" would probably not be gained via a survey with pre-determined questions.

On a level more general than semantics, surveys pre-determine the dimensions along which culture is to be measured. This upsets scholars who believe that cultures must be understood in their own terms, not the terms of another culture. Mintzberg:

> "As soon as the researcher insists on forcing the organization into abstract categories - into his (sic) terms instead of its own - he is reduced to using perceptual measures, which often distort the reality... He gets answers, all right, ready for the computer; what he does not get is any idea of what he has measured." (Mintzberg 1983 p. 111)

Depending on their design, questionnaires can also pre-determine the acceptable values that the answers to each pre-determined cultural dimension are allowed to take on.

A final problem with surveying to determine cultural beliefs, values and assumptions lies in the fact that the holders of taken-for-granted assumptions are at best only dimly aware that they hold these assumptions. Bringing these assumptions to the surface requires more probing than a survey can accomplish.

Some of the problems given above - for example the problem of people not taking surveys seriously, or the problem of people responding with "right" answers - may be overcome by administering the survey verbally. But once the researcher has the respondent in a "live" conversation, he or she may as well try to overcome some of the other problems, for example, he or she could probe to uncover new dimensions of the culture or taken-for-granted assumptions. This would be a good idea, but could no longer be considered a survey. It would take the researcher into the realm of ethnography, which is discussed (and recommended in modified form) in the next section.

Because my objective is to look for specific aspects of companies' organizational culture and assess their consistency with Responsible Care, pre-determining the dimensions along which to measure organizational culture may not be inappropriate for this thesis. But the remaining disadvantages of the survey methodology easily outweigh the time and volume advantages it offers, at least for my purposes. Therefore I did not use surveys.

Note that the problems associated with survey research do not all vanish when using ethnography or 'clinical research.' However, these two methodologies come closer to addressing and resolving these problems.

5.3 Qualitative vs. Quantitative Research

By dismissing survey research, I have left myself with methodologies (such as ethnography and clinical research) that require much more commitment on the part of the individuals in the culture being studied than surveys do. This means that only a small number of organizational cultures, and/or people within those cultures, can be studied. This makes the use of statistical techniques difficult or impossible. Indeed, one of the most difficult and central problems with using qualitative data in the social sciences is that methods of analysis are not well-formulated or widely-accepted:

> "It is fair to say that by the best current standards, analysis of qualitative data is a mysterious, half-formulated art." (Miles 1983 p. 122)

There are no clear conventions, and very few guidelines. In particular, there is no well-developed method for comparing analyses at different sites, which exacerbates the problem of small numbers (Miles 1983 pp. 122, 129).

In addition, some traditionally-held rules of research are deliberately ignored in qualitative research:

> "Certain kinds of reliability must be intentionally violated in order to gain a depth of understanding about the situation (i.e. the observer's behavior must change from subject to subject, unique questions must be asked of different subjects...) ...there is an inherent conflict between validity [meaningful results] and reliability [traditional rules for research]..." (Sieber, in Miles 1983 p. 126)

Most culture researchers do not see this as a problem. For example, Mintzberg (1983 p. 107) argues that small samples often yield more useful results - results that are more significant than "statistically significant" data.

In fact, there is probably more "unconventional" research into organizational cultures in the literature than "conventional" research. Hofstede et al. (1990 p. 286) point to "a dearth of ordinary research as taught by standard behavioral research methodology textbooks" in the organizational culture literature.

5.4 Schein's Recommendations

If the organizational literature is slim on the subject of general culture research methodology, it is almost non-existent when it comes to recommending specific methodologies to use in measuring organizational culture. Only Schein does so (1984 1990 1991).

Schein would approve of my decision not to use survey research. He believes that culture surveys that purport to tell organizations what the important elements of their cultures are, based on a set of individual interview or survey responses, lead to superficial and possibly invalid data (1991 p. 14). Regarding ethnography and clinical research, however, Schein's recommendations have evolved over time.

In 1984 (p. 13), Schein prescribed four approaches, to be used in combination, for deciphering an organizational culture. The first was to analyze the process and content of new members socialization. By interviewing supervisors and older peers of new members, as well as the new members themselves, the researcher may learn what things are passed on to new members. The second was to analyze responses to critical incidents, or crises, in the organization's history. Such crises are often major periods of culture formation. The researcher should look for major themes in the explanations organization members offer for the actions taken during crises. The third was to analyze the beliefs, values and assumptions of "culture creators or carriers". And the fourth was to explore jointly with insiders the puzzling features uncovered in interviews.

In this joint-inquiry (the fourth approach), selected members of the group work with the researcher to uncover the unconscious assumptions that are

hypothesized to be the essence of the culture. To bring unconscious cognitive processes back to awareness, the insider must represent the culture, and must be interested in disclosing his or her own basic assumptions. The researcher helps to uncover the assumptions by asking the right kinds of questions (Schein 1984 pp. 4, 12-13).

By 1990 (p. 111), Schein had altered his recommendation to a combination of ethnographic fieldwork methods and clinical and consulting interview and observation methods. Open-ended interviews of the style used in ethnography would be useful in trying to learn why certain observed phenomena happen the way they do and trying to learn how people feel and think. But because culture is a dynamic process within organizations, he suggested, it would be best studied by action research methods, that is, methods that attempt to "intervene" in the culture and get insiders involved, like in clinical or consulting work.

Thus Schein (1991 pp. 4-5, 7) now advocates "clinical research," the observation, elicitation, and reporting of data that are available when a consultant is actively engaged in helping an organization. Someone in the organization has requested some form of help. The researcher ("clinician") comes into the situation in response to the needs of the organization (client), not his or her own needs to gather data. The organization wants something, is willing to pay for it, and, most important, lay itself open to being questioned by the clinician on matters that may be regarded under other circumstances as private or secret, or "dirty linen." The clinician is expected to intervene, which allows new data about the organization to be surfaced.

Schein (1991 pp. 3-9) uses the following arguments to make the case for using clinical research instead of ethnography.

First, Schein observes that the ethnographer has to gain entry to a site and establish him or herself as "someone who will not be too great a pain to have around." He contends that there is nothing in this situation that would motivate an organization member to put much time or effort into helping the ethnographer, and nothing in the situation that would motivate the organization member to reveal some of his or her deepest observations or

attitudes. For example, if the subject refuses to answer the ethnographer's questions because they are 'none of his or her business', little has been learned and the ethnographer has no legitimate right to pursue the matter. The clinician, on the other hand, is permitted and expected to continue probing.

Second, Schein cites Lewin's observation that one cannot understand a human system without trying to change it, and argues that it is in attempting to change a system that some of its most important characteristics reveal themselves. Schein contends that even the most talented ethnographer - who makes observations without disturbing the situation - would not discover such phenomena unless he or she happened to be present when someone else was trying to produce some change.

Specifically, Schein (1991 pp. 15-19) prescribes the following system for clinical research of organizational culture:

- Do not agree to help an organization decipher its culture unless it has a specific problem it is trying to solve.

- Get the group that wants to solve the problem to come together as a group to learn to decipher its own culture. Explain organizational culture to them.

- Ask the group to describe the organization's major cultural artifacts and to record all of these on a set of flipcharts which are hung around the room. It is important to start with concrete artifacts so that the group has plenty of data to look at when it later tries to infer underlying assumptions. A good way to start this discussion is to ask the people with the lowest seniority to describe what it was like to enter the organization.

- Work in a group. This is essential because members stimulate each others' thinking and we are, after all, seeking data about a construct that is by definition shared. Shared things are easier to locate in a group than to infer from individual interviews.

- Discuss values, some explicit and espoused, some more taken-for-granted and in need of surfacing. After a couple of hours some of the underlying assumptions become quite obvious and, more importantly, the domains in which important assumptions are held become obvious. Culture is both extensive and intensive; not everything in a culture is relevant to the specific problem at hand, so identifying the relevant domains of the culture is important.

- Historical reconstruction is useful. Identify the values and attitudes of founders, early leaders, and current powerful figures to make concrete what members often feel only as vague abstractions. Ask the group about major events, crisis or otherwise, to focus on how assumptions influence what was perceived and learned at those times.

- There is no such thing as a good culture or a bad culture. Only by referencing a particular problem is it possible to decide whether a given cultural assumption aids, hinders, or is irrelevant. Make this determination. Then discuss mechanisms by which aspects of the culture might be modified.

Schein admits that this clinical process does not produce a complete publishable account of the organization's culture, but he maintains that it provides

> "...a much better picture of culture dynamics than would have been elicited from interviews or questionnaires, and possibly, even participant observation [a technique of ethnography]. Most important, it identifies fairly rapidly, often within one day, those cultural assumptions that are salient and relevant to a particular organizational problem. That is far more helpful to organizations than months of interviewing and surveying, and important new data are revealed as the clinician/consultant watches the organization deal with its own cultural realities." (Schein 1991 p. 23)

5.5 A Hybrid Approach

Schein's clinical research sounds appealing. However, a few issues prevent its unmodified use in this thesis. Most obviously and most importantly, I am not a management consultant. I cannot offer my services to an organization to help them solve a specific problem. Thus I cannot establish the kind of clinical relationship that Schein advocates. I can give no reason for being present at a company, other than to conduct research.

The ethnographic approach is not perfectly suited to this thesis either. The purpose of ethnography is to generate a set of instructions to a culture that a stranger could use to anticipate the scenes of the society studied (Sanday 1983 p. 22). The entire culture is to be described. In this thesis, however, I am looking for specific beliefs, values and assumptions at chemical companies. There may be other parts of companies' cultures that I can ignore, although I would be unwise to do so without first carefully considering their potential relevance to Responsible Care.

A second problem with ethnography as normally practiced is that it is tremendously time consuming. Although open-ended interviews are recommended to avoid the problem of pre-determining the dimensions along which culture is to be measured, Miles (1983 p. 119) warns of the danger of gathering too much data:

> "The risk is *not* that of 'imposing' a self-binding framework, but that an incoherent, bulky, irrelevant, meaningless set of observations may be produced, which no one can (or even wants to) make sense of."

Thus both ethnography and clinical research offer desirable characteristics in measuring organizational culture, but neither is completely practicable in the context of this thesis. What was required for this thesis was a methodology that tried to focus person-to-person interviews while maintaining as much 'open-ended' ethnographic character to the interviews as possible, and tried to create a researcher-organization relationship as close to the desirable clinical relationship as possible.

The methodology I used in this thesis is presented in this section, with reference to each of the desirable and undesirable characteristics of survey research, ethnography and clinical research. Hopefully my approach may be useful for others in the future.

5.5.1 Basic Procedure

Entry to Canadian chemical companies was obtained by contacting the Canadian Chemical Producers' Association (CCPA) and explaining the nature of the research project. The CCPA then approached some of its members that it felt might be interested in such a study. Three Canadian chemical companies agreed to participate in this thesis. One was used solely to test out my research methodology; results from the other two are presented in this thesis.

I visited people at their place of work and interviewed them for anywhere from 15 minutes to an-hour-and-a-half, though generally for about an hour. The first people I spoke to would be the key people who had been involved in Responsible Care implementation and diffusion since the beginning. They would recommend to me other people who I should talk to; though I was free to request different people. In the end I spoke to sixteen different people at the two different companies. These people are listed in Table 5.1. As part of the test-run of my methodology, I also spoke to five people at a third company.

I did not have a list of questions to ask during the interviews; instead I had a list of subject areas I wanted to steer conversations through. These subject areas corresponded to the cultural beliefs, values and assumptions implied by Responsible Care, as presented in Chapter 4 (Tables 4.3 through 4.20). If, during his or her interview, an interviewee affirmed a cultural element of Responsible Care without my having asked directly for it, then I considered it one piece of evidence suggesting conformance of the company culture to the culture implied by Responsible Care. If an interviewee contradicted a Responsible Care cultural element, then I considered it one piece of evidence suggesting non-conformance. In an interviewee did not address an issue area

of importance to the culture implied by Responsible Care, the result was inconclusive. It could be that the company culture neither reflected nor contradicted the cultural element. It could also be that I failed to steer the discussion towards that issue area.

Table 5.1 Persons Interviewed[6]

Company	Person	Position
ET	Heinz Winnett	Vice-President, Operations
	Alan Williams	Toronto[7] Plant Manager
	Daryl Reed	Vice-President, Corporate Accounts
	Ron Cash	Manager, Customer Service
	Ken Kavon	Manager, Sales
	Larry Baker	Environmental Manager, Plant Operations
	Larry Thompson	Varennes Plant Manager
	Francine George	Environmental Coordinator, Toronto Plant
	Randy Nuse	Senior Vice-President
	Michael Law	General Manager, Manufacturing
SM	Charlie Woods	President
	Donald McNees	Vice-President, Operations & Environmental Affairs
	Bob Claggett	Manager, Sales
	Angie Emmert	Manager, Inventory & Customer Service
	Mark Rutter	Manager, Health, Safety & Environment
	David Carter	Senior Engineer

Each of the following subsections identifies an issue in the measurement of organizational culture (including several that have been mentioned already), and explains what measures (if any) I took to address the issue in the context of this thesis.

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[6]Individual names were randomly selected from TPP's own Greater Oklahoma City Telephone Directory, 1986. The reader may draw his or her own conclusions about Oklahoma City. ET and SM are also pseudonyms.

[7]Plant locations have been changed for this thesis.

5.5.2 The Researcher

In their study of twenty different organizational cultures, Hofstede et. al. (1990 p. 290) used interviewers who were "deliberately naive about the type of activity going on in the unit studied." Spradley, too, argues that the researcher should be unfamiliar with the culture to be studied. If the researcher shares taken-for-granted assumptions with organizational members, he or she will miss those aspects of the organizational culture because they do not catch his or her attention.

A corollary to this argument is that the researcher should come from a culture that organization members do not understand, so that they cannot translate their culture into different terms for the benefit of the researcher, thereby handicapping the discovery of their organizational culture. (Sanday 1983 p. 20)

There is a tradeoff between such cultural independence and rapport. Sanday (1983 p. 20) describes this as "the need [of the researcher] to identify with and at the same time to remain distant from the process being studied." Developing rapport is discussed separately below, but for now it is sufficient to say that it may be easier for the researcher to gain entry, acceptance, and willingness-to-talk, if organization members perceive him or her as 'one of us.'

A related requirement is that the researcher should have prior experience in another culture, so as to be more sensitive to his or her own cultural assumptions.

This thesis was mine; there was no choice of researcher. I have worked in an industry very similar to the chemical industry (the industrial gas industry), although in different geographic regions that the companies I studied for this thesis. I did study chemical engineering at school, and presumably a significant number of my interviewees at least partially understand the culture of a graduate student. I do have experience in other cultures.

Because, as Van Maanen (1983 p. 50) points out, "it is by and large the differences from one's own world (and unexpected similarities) that find their way into one's field notes," a different researcher, with different cultural assumptions, would have arrived at a different interpretation of the cultures at the companies I visited, as well as a different interpretation of the cultural implications of Responsible Care.

5.5.3 Cultures and Subcultures

Louis (1985 p. 128) points out that it is important to know how widely the taken-for-granted understandings of the culture are shared, that is, what the boundaries of the culture are. An organization may house several cultures, which could be homogeneous or heterogeneous (Schein 1984).

In this thesis I looked for evidence of the Responsible Care culture in the cultures of chemical companies. Because I interviewed less than a dozen people at each company, representing a wide variety of functional positions, I did not look for distinct subcultures within each company, though some were pointed out to me. I had no way of knowing if different people's different beliefs, values and assumptions were the result of different individuals' beliefs, values and assumptions, or the result of different organizational subcultures. Thus I did not study subcultures, but I allowed the 'overall' culture to be heterogeneous. The selection of interviewees reflected a bias towards head office management.

5.5.4 Interviewees

According to Spradley, some of the most persistent problems in performing ethnography come from failure to locate good "informants," i.e. interviewees. Ideal interviewees have four characteristics. First, they are thoroughly enculturated: they know the culture very well, and not just through formal training or indoctrination. Second, they are currently involved in the culture. This is necessary so that they still speak the language. It also avoids the possibility that they have left the culture because they reject it. Third, they have sufficient time to participate. And fourth, they don't try to translate

their culture into the researcher's terms, and don't categorize their knowledge in ways different than the ways most members of their culture do.

Van Maanen adds that different informants know more or less about what actually goes on. Those who profess and abide by the rules may actually know the least about what actually happens. Thus it is important that the researcher somehow establish the limits of an interviewee's expertise.

For the case of chemical companies and Responsible Care, organizational culture has purportedly changed considerably in the last few years. If this is indeed true, then years of experience with the existing culture is probably impossible and irrelevant. The people I interviewed were all still involved in their cultures. All had the time to participate. Because they knew of my chemical engineering background, I believe they translated little for me. I tried to gauge my interviewees' expertise based on what little I know about companies such as theirs, but of course I could not do so with certainty.

5.5.5 Culture Champions

As mentioned previously, Schein (1984 p. 13) suggests analyzing the beliefs, values and assumptions of "culture creators or carriers," such as founders, early leaders, and current powerful figures. At both companies, I spoke to people in charge of Responsible Care implementation, people who had been involved with Responsible Care since its inception, and senior management in charge of the company's operations. Those who had been involved with Responsible Care since the start - the Responsible Care champions - offered especially useful insights regarding the spread of the Responsible Care culture through the company.

5.5.6 New Employees

Schein and Louis also suggest analyzing the process and content of the socialization of new members, to learn what aspects of organizational culture are passed on to new members.

I interviewed one new employee at the two companies I studied. The Canadian chemical industry has had little opportunity to hire new people in the last few years; thus this avenue of organizational culture research was not really available. I did speak to a plant manager about new employee training, but he had only trained two or three new employees since Responsible Care's inception.

5.5.7 Disruptions

Schein, Louis and Van Maanen all point to disruptions in normal patterns of behaviour, such as major events, critical incidents and crises, as strategic incidents to study for cultural insight. New management, reorganization, or new members make old-timers more aware of their shared understandings (Louis 1985 p. 133). Van Maanen points out that (1983 p. 47): "...it is the empirical exception that often displays the analytic rule."

The Canadian chemical industry has certainly had its share of disruptions in the last few years. In my interviews, I seldom had to ask about critical incidents that formed - or were affected by - organizational culture vis-à-vis Responsible Care. Interviewees probably couldn't retell the history of Responsible Care *without* reference to several such incidents.

In addition, consider that the organizational culture of chemical companies has purportedly changed considerably in the last several years regarding issues such as those addressed by Responsible Care. If this is so, then employees may still be aware of the differences between their new organizational culture and the previous one. I certainly found this to be true.

5.5.8 Groups

Schein recommends working with a group of insiders when seeking data about culture, a construct that is by definition shared. However, the difficulties of scheduling meetings of several people, some of whom (including myself) are based in different cities, are significant, particularly on a small budget. In the end, I could schedule no such group sessions. I would have liked to.

5.5.9 Focus on a Specific Problem

Schein's clinical research methodology is based on not deciphering an organization's culture unless it has a specific problem it is trying to solve. This is very difficult for an inexperienced Master's student to accomplish. In my initial correspondence with the CCPA and individual companies, I tried to invoke the argument that companies could use the results of their participation in my research to improve the effectiveness of their Responsible Care efforts. (This argument was based on the presumption that their participation would increase their awareness of the interplay between their organizational cultures and Responsible Care.) I don't think any of them took my argument seriously, however, and probably with justification - I found several people within each company who were already acutely aware of this interplay.

5.5.10 Attempt Change

Schein's clinical research is also based on the belief that organizational culture is best studied while trying to change it. He argues that an ethnographer could only achieve equivalent insights if he or she was present when someone else was trying to produce change.

Again, there is no way I would be enlisted to help change a chemical company's culture. Fortunately, however, others within the companies - the Responsible Care champions - are. Hopefully by talking to them, I gained at least some of the insights available to someone trying to change the system. Several referred to obstacles they had encountered.

5.5.11 Pre-determined Cultural Dimensions

One of the criticisms of surveys is that they pre-determine the dimensions along which culture is to be measured, instead of understanding them in their own terms. My "steered" interviews attempted to explore certain domains of the organizational culture (those that correspond to the cultural

elements implied by Responsible Care) more thoroughly than others, without rigidly defining every topic and question to be addressed.

5.5.12 Individualism

Another criticism of surveys is that individual responses are unlikely to grasp the shared beliefs, values and assumptions of organizational culture. In large part, my individual interviews suffered from the same problem, although moving from a solo written form to a two-person verbal interview did at least take my interviews one step closer to a group setting such as those in which organizational culture is played out. (Group interviews or sessions are difficult to schedule, as mentioned previously.)

5.5.13 Joint Inquiry

Schein advocates joint exploration with insiders of the puzzling cultural assumptions uncovered in interviews. I engaged in a little of this type of questioning in some of my interviews, although not as much as would probably be desirable. Interviews took place over such a short period of time (to minimize travel costs) that no rigorous search for 'puzzling cultural assumptions' was possible in time for the next interview. I only pursued the ones that were evident to me during interviews.

5.5.14 Being Taken Seriously

My first criticism of surveys was that people don't take them seriously. For my interviews, I found that by virtue of having flown in from another country at MIT's expense, I was taken seriously. And as per Thomas (1993 p. 94), I found it relatively easy to frame my interest in terms that might pique others' interests.

5.5.15 Motivating the Interviewee

Schein contends that there is nothing in an ethnographic interview situation to motivate an organization member to reveal his or her deepest observations or attitudes. In this regard, there was nothing I could do to elicit

trust other than attempt to build rapport and come across as non-threatening. Only someone within one of the companies will be able to judge for certain to what depth I was able to learn about their organization's culture vis-à-vis Responsible Care.

5.5.16 Rapport

Developing rapport with the interviewee is so important that Spradley describes an ethnographic interview as having two purposes: developing rapport and eliciting information.

According to Spradley (1979 pp. 78-83), rapport develops through the following four steps: apprehension, exploration, cooperation, and finally participation. At first, when the interviewee is apprehensive, the researcher should get and keep him or her talking, perhaps by asking him or her to describe something. The researcher should listen, show interest, and respond in a non-judgmental fashion. As the interview progresses, both the interviewee and the interviewer will relax and engage in exploration, to become familiar with the new relationship. In this phase, the researcher should repeatedly explain what it is he or she is trying to accomplish with the interview. The researcher should restate (without re-interpreting) what interviewees say in a non-judgmental way. Meanings (why things are) are not yet solicited, only usage (how things are used). When the interviewee reaches the point where he or she is comfortable asking questions of the interviewer, then the interview has reached the cooperation step. When he or she brings new information to the researcher's attention in an effort to help the research, then it has reached the participation step.

Spradley (1979 p. 26) also points out that in some cultures, tacit rules (e.g. respect for trade secrets) make asking or answering questions taboo, and that in any culture, people often think the researcher has a hidden agenda and don't trust him or her. He recommends a few minutes of easygoing talk interspersed here and there throughout the interview - it pays enormous dividends in rapport.

In my interviews I paid a lot of attention to building rapport. Most of the time I had no trouble getting people to talk at length about Responsible Care and their feelings towards it. Sometimes I strayed off into unrelated conversation (for example about one person's upcoming relocation to Houston), and sometimes the interviewee would question me at length about my research or my career plans. I even went for a beer with an interviewee who clearly understood a lot about building rapport.

5.5.17 Tape Recorder Use

A tape recorder is the best way to get a verbatim record of interviews. In Hofstede et. al.'s study (1990 p. 290) interviews were taped. Mirvis (1985 p. 213) taped his interviews, but allowed 'timeouts' and 'off-the-record.'

But Schein (1991 p. 1) warns of a story in which a culture researcher was asked: "Do you want me to tell you the official story or do you want me to tell you what really happened?" and when he answered that he wanted to know what really happened, was told: "In that case you better turn that tape recorder off."

Noting that tape recording may threaten or inhibit interviewees, Spradley (1979 p. 74) proposes three general guidelines for tape recorder use: always bring a tape recorder just in case; go slow, normally not introducing the tape recorder until the second or third interview; and, watch for opportunities to record even small parts of interviews.

He notes that

> "It is possible to do good ethnography without a tape recorder; it is not possible to do good ethnography without rapport..." (Spradley 1979 p. 74)

I did not tape - or ask to tape - any interviews. In almost all cases, I was interviewing someone whom I had never met before. I felt that the presence of a tape recorder would prevent my building rapport, alter the conversations I had, and diminish my learning about the organization's culture. Note that

both Schein and Spradley, representing the clinical research and ethnographic perspectives respectively, would agree with this decision for an interviewee's first interview.

5.5.18 Interview Notes

Whether or not the interview is being taped, the researcher must still take notes. Spradley (1979 pp. 71-73) recommends two principles: First, the researcher should identify the language (organizational culture or researcher's culture) used for each entry in his or her notes. It is common to fall into using an amalgamated language but this distorts cultural meanings. Second, notes should be verbatim, without translations or distortions. A partial verbatim record is better than a more complete summary.

As soon as possible after an interview, notes should be revisited to fill in details and add things remembered. The final interview notes should be understandable to someone other than the researcher. Spradley also recommends keeping a journal in which the researcher's feelings and biases are recorded - remember the ethnographer is a researcher him or herself.

Thomas (1993 p. 91) recommends sending an abbreviated transcript or a summary to the interviewee to get clarification and prompt additional data. He admits this can be laborious, but says it keeps lines of communication open.

I took lengthy notes during interviews and tried to get direct quotes where I could. I often fell behind the conversation in my notes - though my catch-up time tended to encourage interviewees to elaborate on their last thoughts. I believe that I filtered concepts from my notes too much. If the conversation wandered from the Responsible Care topics I wanted to discuss, I tended to take fewer notes. Also, as I heard the same stories for the second or third time (from different people) I tended to take fewer notes. I suspect that I did use an amalgamated language in my notes and in hindsight I should not have. I have borne this in mind in my analysis of my results. I did not keep a journal of my feelings. I did not send summaries to my interviewees for clarification, though if I had had more time I would have liked to.

5.5.19 Knowing the Language

A criticism of the survey methodology is that the researcher cannot understand the responses until he or she knows that the questions mean in the language of the culture studied.

I believe this was not a significant issue in this thesis. Before I began conducting interviews, I had reviewed materials provided to me by each company, and by the CCPA. I had also previously worked in a similar industry. Thus I believe I knew at least some of the language before beginning interviews, and as with all ethnographic interviews, one of my tasks was to learn more of it.

5.5.20 Believability

Towards the end of my very last interview for this thesis, my interviewee asked me: "How do you know I'm not feeding you a load of bullshit?"

There are a number of ways in which the researcher (or anyone else) can be misled by the information interviewees tell him or her. Most obviously, people can lie. Because people tend to lie about things that matter most to them, people may lie about deeply-held cultural beliefs or assumptions, for a whole variety of reasons. People can also avoid issues that the researcher does not know to ask about. Interviewees can easily steer around items such as hidden personal failings, "rotten apples" within the organization, or collective secrets. Finally, interviewees can simply be wrong or misled themselves, and unwittingly pass on incorrect information. For example, people within a culture are sometimes totally unaware of certain aspects underlying many of their own activities. It was Kluckhohn who pointed out that "It would hardly be fish who discovered the existence of water."[8]

A distinction more subtle than simply "facts" vs. "lies" may be more useful. The researcher's ability to derive cultural assumptions from what

[8]This quote is referred to frequently in the organizational culture literature, usually without reference. It must be a taken-for-granted part of culture researchers' culture.

interviewees say depends of course upon how much he or she believes the directly observable "facts" he or she has found. These facts can be "presentational" or "operational." The ethnographer must be able to determine which are which, or else risk deriving faulty cultural concepts (Van Maanen 1983 p. 42). Van Maanen defines operational and presentational data as follows:

> "...operational data deal with observed activity (behavior per se) and presentational data deal with the appearances put forth by informants as these activities are talked about..." (Van Maanen 1983 p. 42)

Presentational data are:

> "...appearances informants strive to maintain (or enhance) in the eyes of the fieldworker, outsiders and strangers in general, work colleagues, close and intimate associates, and to varying degrees, themselves." (Van Maanen 1983 p. 42)

Van Maanen likens the difference between operational and presentational data to the difference between fact and fiction. He argues that the ethnographer must continually attend to keeping operational and presentational data separate.

> "..ethnography (and everyday life) is as much 'believing is seeing' as it is 'seeing is believing'... evaluating the believability of what one hears and sees is critical..." (Van Maanen 1983 p. 44)

Of course, the fact that members of the culture strive to maintain these appearances is part of the culture. But it is important not to interpret the appearances as reality unless they are.

Thomas points out that executives, who speak in public often, may be especially presentational:

> "...it is quite common to watch an executive mentally 'rewinding the tape' in search of an appropriate phrase or monologue that appears to accord to a particular question." (Thomas 1993 p. 89)

Both the companies I visited had already passed the Responsible Care compliance verification process. Thus both companies had already been subjected to scrutiny by interviewers with more sensitive "lie-detectors" than mine. Also, because I interviewed several people and checked for consistency, I can also discount the likelihood that I was told individual lies. I was either treated to a co-ordinated show, or I was told the truth.

I was told of a few personal failings, rotten apples and collective secrets (most of which do not appear in this thesis). This leads me to believe that the picture I was painted was at least partially accurate.

An initiative with as much emphasis on relations with the outside world as Responsible Care includes much presentational data. Plant managers and others speak to the public regularly. I tried continually to distinguish between operational and presentational data as suggested by Van Maanen. I also tried to spot people 'rewinding the tape.' I believe I heard some well-practiced schpiels on more than occasion; I also believe these were still instructive.

All in all, I must state that my gut feeling is that I was not told the whole truth, but that I was told most of it, and that I was never fed a "load of bullshit."

5.5.21 "Right" Answers

A problem with surveys is that respondents might think they are being tested in some way, and might try to provide "right" answers from Responsible Care documentation.

This is less of an issue in a personal interview, where there is opportunity to stress that it is individual opinions that are sought, but still happens. Most of the people I spoke to are well aware that Responsible Care prescribes certain ways they are supposed to behave, and sometimes refer to Responsible Care

documents when they are in doubt - including when being interviewed by a student. By and large, however, I think the one-on-one format, including probing follow-up questions, avoided the simple repetition of "right" answers.

5.5.22 Listing Artifacts

Schein recommends describing the organization's major cultural artifacts before trying to infer underlying assumptions. I did not make a deliberate effort to discuss artifacts with my interviewees but several were necessary to discuss before proceeding to a discussion of deeper beliefs, values and assumptions.

5.5.23 Probing for Taken-for-Granted Assumptions

According to Schein, deciphering a culture is a matter of surfacing assumptions that will not be too unfamiliar once they are uncovered. One of the reasons I dismissed surveys above was because this requires more probing than a survey can accomplish.

The heart of the ethnographic interview method is the art of drawing out the interviewee's cultural assumptions, or "background expectancies," from interview statements. Van Maanen describes this as

> "...perhaps the most difficult yet most interesting goal of the ethnographic enterprise...Even when dealing with directly observable behavior, it is sometimes quite difficult for an observer to grasp its contextual meaning to those whose behavior is being described." (Van Maanen 1983 pp. 41,42)

As an example, he describes a situation in which

> "...the meaning of 'call jumping' to an informant was self-evident and in no need of explanation while to me its meaning was almost totally obscured by my [initial] ignorance of police work." (Van Maanen 1983 p. 41)

In addition, the researcher may find it difficult to see anything more than what organization members can see and relate themselves:

> "...[the] fieldworker may find it difficult to generalize...from specific practices (operational data) without merely parroting back the normative abstractions (presentational data) used by members of the studied group to both describe and account for their behavior." (Van Maanen 1983 p. 44)

I found my one-pass interview schedule, in which I normally did not see the same person twice, and in which I did not revisit interviewees after having analyzed my interview notes, to be a real hindrance in attempting to ferret out cultural assumptions. I discuss this more in Chapter 7 (Conclusions). Nonetheless, I believe I was able to surface a number of cultural assumptions.

5.5.24 Determining Relevance

Schein's clinical research focuses in on the parts of an organizational culture relevant to a specific problem. By informing interviewees about my research purpose and by steering the interviews towards areas of Responsible Care cultural elements, I was able to focus my gathering of data about the companies' cultures without predetermining exactly which dimensions were relevant or irrelevant.

5.5.25 Avoiding Theories

As the researcher gathers data in the field, he or she inevitably starts to form hypotheses in his or her mind about the culture being studied. This is natural; it is how deeper concepts are elicited. If not careful, however, the researcher can fall into a trap where the only things that he or she observes and writes down in his or her notes are those that support these mental hypotheses. Miles (1983 p. 124) calls this "self-delusion."

Van Maanen (1983 p. 37) argues that it is part of human nature that:

> "we tend...to theorize well in advance of our facts thus allowing for the possibility that the facts that emerge from our studies are twisted to fit a given theory."

This issue was very relevant for this thesis, because I derived the list of cultural beliefs, values and assumptions that I looked for at companies from a cultural analysis of the Responsible Care text, and not from information gathered in my interviews. This analysis was very conducive to hypothesis forming. In the effort to avoid taking pre-conceived theories into my interviews, once I had determined the subject areas I wanted to cover, I did not look at the list of cultural beliefs, values and assumptions that I would eventually be analyzing my interview notes for.

5.5.26 Testing Hypotheses

In ethnography, each inference regarding a deeper concept is at first simply a hypothesis, which must then be tested over and over (in subsequent ethnographic interviews) before it is accepted (Spradley 1979 p. 8). For this thesis, travel and time considerations by-and-large prevented repeat interviews. Hypotheses were not tested over and over.

5.5.27 Peripheral Vision

The researcher should spend time discovering aspects of the organizational culture that he or she had not anticipated: "Peripheral vision, poking around in relevant places, a good dose of creativity - that is what makes good research, and always has, in all fields" (Mintzberg 1983 p. 109). "Ethnographic research is guided as much from drift as design..." (Van Maanen 1983 p. 38). Within the limited time available to me, I explored issues that caught my attention. Some appear in Chapter 6.

5.5.28 Miscellaneous

Interviewing depends on a cluster of interpersonal skills (Spradley 1979 p. 46): asking questions, listening instead of talking, taking a passive rather than an

assertive role, expressing verbal interest in the other person, showing interest by eye contact and other non-verbal means.

Spradley lists the following components of an ethnographic interview:

- ethnographic explanations
- ethnographic questions
- asymmetrical turn taking
- expression of interest in interviewee's world
- expression of ignorance of interviewee's culture
- repetition of same questions and endless clarification
- restatement of interviewee's terms
- incorporation of interviewee's terms into questions
- creation of hypothetical situations
- asking of friendly questions
- encouragement of expansion of every concept into more and more detail

The researcher should make it clear that it is the individual, not the position or the organization, who is being interviewed (Thomas 1993 p. 85). And questions can be phrased personally ("what do you do?") or culturally ("what do most people do?"). Either may be appropriate at different times.

Schein recommends systematically covering all of his problems of external adaptation and internal integration at some point.

5.6 Ethics

Mirvis (1985 p. 212) points out that "In some research disciplines, workers are encouraged to 'go underground,' and deception is accepted as simply one of the rules of the game." But ethnography is no such discipline. Spradley (1979 p. 34) presents the following ethical principles:

- consider interviewees first
- safeguard interviewees' rights, interests, and sensitivities
- communicate research objectives
- protect the privacy of interviewees
- don't exploit interviewees
- make reports available to interviewees

Different people I spoke to criticized colleagues, told me of activities of questionable legal status, or said things that portrayed their company or industry in a bad light. To protect the privacy and the interests of the individuals who were so candid with me, I do not provide summaries of my interviews in this thesis. Only individual quotes are given. I realize that this does not provide the reader with sufficient information to verify my analysis or my conclusions. I do not feel that the academic objectives of this thesis have been hindered by this decision. Fundamentally the reader must trust the integrity of myself, my supervisors and MIT.

Chapter 6

Analysis of Interviews for Responsible Care® Beliefs, Values and Assumptions

6.1 Analysis Procedure

Analysis of interview notes proceeded in a straightforward, albeit time-consuming, way. Using an enormous matrix (598 rows by 185 columns), I examined my interview notes to find evidence supporting or contradicting each of the Responsible Care cultural beliefs, values and assumptions identified in Chapter 4 (Tables 4.3 through 4.20). For each of the 185 Responsible Care beliefs, values or assumptions, I examined the evidence I had gathered and determined:

1) if I had sufficient evidence to form a hypothesis regarding the presence of the belief, value or assumption in ET's culture,

2) what that hypothesis should be,

3) if I had sufficient evidence to form a hypothesis regarding the presence of the belief, value or assumption in SM's culture, and

4) what that hypothesis should be.

Based upon my interview notes (and my memory), I drew inferences about the organizational cultures at ET and SM. As Spradley (1979 p. 8) has pointed out, "At first, each cultural inference is only a hypothesis about what people know. These hypotheses must be tested over and over..." The cultural inferences I drew about ET and SM were normally based upon just one

interview with each person, and were not tested over and over. Thus they are best thought of as hypotheses, not conclusions.

6.2 Analysis Results

Each of the following subsections (6.2.1 through 6.2.18) addresses one of the eighteen areas of Responsible Care culture, as given in section 4.3. This arbitrary categorization made writing this thesis tractable, but does occasionally obscure common threads that arise in different of the eighteen areas. Each subsection has two components: a summary table, and a discussion of hypotheses.

Each summary table lists all of the Responsible Care cultural beliefs, values or assumptions for that subsection (given in the corresponding table in section 4.3). For each one, it also provides a quick hint of the hypothesis (if any) that can be advanced regarding that belief, value or assumption at each of the two companies I visited.

Please bear in mind that generating hypotheses regarding whether a Responsible Care cultural belief, value or assumption is or is not present at a company is a much more complex process than can be captured in a table entry such as 'yes,' 'no,' 'not yet,' or 'in part.' For this reason, the summary tables include only the hypotheses about which I am most confident. Blank entries in these tables imply that I did not gather sufficient evidence to confidently generate a hypothesis regarding the particular belief, value or assumption. Some of the most interesting observations I made arose from too few interviews to report in my summary tables. Perhaps one of the most difficult aspects of writing this thesis was resisting the urge to hypothesize based on little gems of intriguing but unrepresentative information.

If I had done a perfect job of steering interview conversations through my list of Responsible Care beliefs, values and assumptions, then they would all be fully addressed - at least implicitly - in my interview notes. Time, attention to rapport, and my own inexperience prevented such perfection, however, and

some Responsible Care beliefs, values and assumptions remain incompletely explored.

I believe it is interesting to make a distinction between aspects of Responsible Care culture that are new to the chemical industry, and aspects that reflect pre-existing chemical industry culture. I think it is interesting to observe which aspects of each type were affirmed or contradicted at ET and SM. For this reason, in Tables 6.2.1 through 6.2.18 I have italicized Responsible Care beliefs, values and assumptions that I believe represent relatively new concepts for the chemical industry. I have no personal expertise nor body of knowledge to justify the distinctions I have made; the reader who rejects my qualifications to make such distinctions should ignore the italics.

The discussions that follow each summary table focus in on the beliefs, values and assumptions within that section for which I gathered the most - or the most interesting - data. Some of these discussions start with phrases like "I got the impression that..." or "People seemed to imply that..." I suspect that these phrases do not sound very convincing to the reader who wasn't there. These cultural inferences were based on people's conversations regarding general subject areas, instead of talk about specific actions, incidents or decisions. Even though they are difficult to report or explain convincingly, I believe that they are still valid.

6.2.1 Chemical Companies Within Society

Table 6.1 Chemical Companies and Society

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
The company is the basic autonomous unit of action. Things are controlled by each company.	yes	yes	
Chemical companies have the right to exist.	no	no	should exist, yes
Companies should consider long term effects.			
CCPA companies help each other in some matters.			in fact they do
All companies are subject to the same societal pressures.	yes	yes	regulation
Companies should all approach the management of chemicals similarly, and take similar positions on issues.		sort of	industry initiative
Companies' performance need not be consistent.			performance is not consistent
Companies are distinct from the public.	yes	yes	
Companies have a role in society to play.	yes	yes	
Companies are part of, and should be in harmony with, their communities.	not yet		beginning are there at ET
Companies have obligations to several stakeholders.	yes		
Stakeholders' views may differ from those of companies.	yes		
Companies should consult with, and understand the needs and concerns of, all stakeholders.			beginnings are there at ET
Companies must consider stakeholder concerns and needs. Stakeholder interests must be addressed.			some evidence at ET

The company is the basic autonomous unit of action

Everyone I spoke with seemed to focus their attention on company activities. For example, all plans, budgets and actions consider company activities only. The people I interviewed certainly took for granted that most important decisions are made at the company level. As interviewees spoke, I was often left with the impression that larger issues were interesting to them only insofar as they affect the company (either ET or SM). Sales managers at both companies displayed pride when speaking of their Responsible Care customer relations being ahead of the "rest of the industry."

Chemical companies have the right to exist

I found considerable concern at both companies that they might not survive if onerous regulation were to make them uncompetitive. Responsible Care was seen as a strategy for survival. Interviewees believed that companies should exist, that companies will fight hard to exist, but not that companies have the right to exist.

Companies' performance need not be consistent

As interviewees described different practices and events at different companies (customers, neighbours, etc.), they cannot help but acknowledge that companies' Responsible Care performance is not consistent. Some seemed to feel that it would be preferable if performance were consistent across companies; however others seemed to enjoy their leadership role.

Companies are distinct from the public

Interviewees' talk thoroughly reflected the assumption that those who work for chemical companies are very different from the general public, and vice versa. For several examples see the different assumptions people made about chemical companies capabilities, employees and the public (subsections 3, 12 and 13).

Companies have a role in society to play

Several people I spoke with at both companies cited contributions that their companies and the industry have made to society. Through Responsible Care they credited themselves with showing that voluntary initiatives can work. Winnett pointed to ET's participation in the development of Canadian Standards Association and International Standards Organization standards, as well as ET's objections (which were ignored) to plans for low-density housing in the vicinity of its Toronto plant due to safety concerns. People at both companies described with pride their consultations with community representatives. Law cited with approval ET's efforts during the design phase to "build a social foundation" for its recently-constructed plant at Edmonton.

Rutter at SM pointed with pride to the chemical industry's leadership of other industries in the area of responsible business practices. SM's Woods referred to the federal Conservative government's Green Plan, which mentioned Responsible Care as a model for other industries.

Companies are part of, and should be in harmony with, their communities

Interviewees at both companies acknowledged that they are supposed to be fully involved with their communities, but said that opening up to the community is difficult and does not come naturally. People spoke highly of the initial actions that have been taken. Law described ET's public consultations during the design of its Edmonton facility, as well as its decision to maintain the land outside the fence in such a way as to fit in the area. Carter said he was just warming to his visits to schools on behalf of SM when he was moved to another project. The belief that companies should be in harmony with their communities seemed to be beginning to penetrate the company cultures.

Companies have obligations to several stakeholders

The people I spoke with at both companies identified several stakeholders, such as unions, communities, society, shareholders, the public and government inspectors. Actually, ET plant manager Williams argued that "Just about everybody is a stakeholder if you think about it." People also seemed to acknowledge at least partial obligations towards stakeholders.

6.2.2 The Responsible Care Initiative

Table 6.2 The Responsible Care Initiative

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Responsible behaviour is a necessary part of doing business.	yes	yes	
The CCPA knows what actions are necessary to gain public and employee confidence.			
Responsible Care has clear intent, expectations, and meaning.		no	
Responsible Care is a manifestation of deeper ethics, values, beliefs, and attitudes.	not fully	not fully	also to avoid costs and regulation
More and tougher generally-understood standards for acceptable behaviour in the chemical industry are necessary.			
Companies should go beyond the literal requirements of the law, regulations, chemical lists, traditional definitions, even Codes of Practice.	yes	yes	
Responsible Care includes all activities, no matter how central or peripheral to the business, even those not traditionally thought of as risky, and even those proceeding on a small scale.	not fully	not fully	much more than before, not completely yet
Activities within and outside Canada are equally subject to Responsible Care.			
Responsible Care applies to all facilities.			
There are some limits to Responsible Care's applicability, e.g. small scale test marketing, foreign suppliers, community awareness for offices.			
Activities that cannot be done according to Responsible Care must be done at all.			not in the short term
Community awareness is desirable but not essential.	yes	yes	community awareness not in place yet

Responsible behaviour is a necessary part of doing business

The people I spoke to believed that Responsible Care is a necessary part of their business, though the purpose they had in mind seemed to be nowhere as altruistic as "to respond to and address public and community concerns, needs and expectations." Responsible Care was seen as necessary to ensure competitiveness, both directly and indirectly by avoiding regulation. Increased environmental, health and safety performance was seen as carrying a return on investment through avoided costs. SM's McNees said that

without Responsible Care, a company will put "more effort into patches and quick fixes, and that will hurt competitiveness." ET's Baker concurred: "The amount of resources you have to devote to spills is flabbergasting." More prevalently, it was seen as necessary to avoid accidents that can cause a regulatory reaction: "Mississauga-style incidents hurt." (ET's Cash) "Too much regulation and litigation is very costly." (ET's Nuse) 'Addressing public and community concerns, needs and expectations' seemed to be desirable only insofar as it would lead to a more favourable regulatory climate.

Responsible Care has clear intent, expectations and meaning

Most everyone I spoke to could articulate an intent and meaning of Responsible Care. But I would not characterize the intent, expectations and meaning of Responsible Care as clear, because I heard several different versions, from 'improve performance then go to the public to change their minds,' to 'avoid regulation,' to 'avoid costs associated with accidents.' There was also a feeling that the purpose of Responsible Care had evolved over time and that the definition of acceptable behaviour had also evolved, and would continue to evolve.

Ambiguity in the requirements and purpose of Responsible Care was seen as both good and bad. McNees of SM pointed out that on the one hand it makes implementation harder: "The clarity of purpose was not there, and that's difficult." But Baker of ET pointed out that on the other hand it allows standards of behaviour to change. Baker said that people at ET try to invoke Responsible Care when arguing for specific projects, but are really just using it to imply rightness:

> "People don't say 'In the good old days...' anymore. Now they say 'According to Responsible Care...' What they're really saying is 'What I think is best is...' Now people extend Responsible Care beyond its original boundaries. And that's good. Any new idea that's the right thing to do, people call it Responsible Care."

Woods of SM pointed out that when companies first signed on to Responsible Care, they had no idea what it would entail. Thus I hypothesize that the intent, expectations and meaning of Responsible Care are not clear at SM or ET.

Responsible Care is a manifestation of deeper ethics, values, beliefs, attitudes

ET plant manager Williams said that "Responsible Care is not a program, it's an initiative, a culture, with no start or end." At SM, the people I spoke with acknowledged that the deeper ethics, beliefs, values and attitudes of Responsible Care were not present at SM when it first signed on to the initiative. Cash of ET pointed out that there are also "very fundamental business interests at stake" (through avoided regulation) that can motivate responsible behaviour: "That's why business is in." At both companies, interviewees spoke of the Responsible Care "message," and said that it had not yet permeated every aspect of company operations, especially at the plant level. SM's Rutter said that plant workers have "the ethic," but don't tie it to the larger picture of Responsible Care.

At both companies, people cited with approval numerous examples of their company incurring costs despite their yielding virtually no return. For example, ET's Winnett said "We've spent $3.1 million on reinforcing the chlorine tanks. There's no payback there." The implication was that the companies took actions just because they thought it was the right thing to do, and interviewees approved. At SM, several people referred to morals and ethics in describing the effects of Responsible Care at the company.

It is very possible that Responsible Care practices were adopted for one reason - the largely self-serving motivation of avoided regulation, but that as they are increasingly practiced, they take root in the culture for other reasons. I hypothesize that in SM's management levels, Responsible Care is a manifestation of deeper ethics, values, beliefs and attitudes. At ET, the actions are taken, but they do not seem to have achieved "deeper ethics" status yet.

Companies should go beyond literal requirements

At both companies, it was clear that people believed in going beyond the literal requirements of the law or regulations. After all, most of Responsible Care is beyond law and previous common practice. ET's customer assessments, which are even beyond Responsible Care, are described by its employees with pride. McNees of SM refers to (unwritten) standards for acceptable Responsible Care practices as becoming more and more stringent all the time. Several examples of spending extra money on safety, environment or community relations, where strictly speaking the company could have avoided the expense, were quoted with approval by interviewees at ET. People at both companies spoke of wanting to do Responsible Care better than the competition.

Responsible Care includes all activities

People at both companies pointed out with approval that Responsible Care has them considering several things that they would never have otherwise considered. ET's Williams: "Responsible Care has triggered a lot of thought and action in areas where there's been no treading before." Interviewees mentioned attention to such not-traditionally-thought-of activities as office safety, sales, start-up, and land use. ET's Williams also pointed out that procedures help to ensure that Responsible Care is always considered.

Interviewees still thought of some activities as not relevant to Responsible Care, such as SM's suppliers' contaminated drums, or ET's non-regulatory raw materials, but from their standpoint it seemed that these days Responsible Care was relevant to just about everything. People at both companies seemed to assume that Responsible Care addresses a lot more activities than have traditionally been addressed, even if it did not yet assume that it addresses all activities.

Activities within and outside Canada are equally subject to Responsible Care

People at ET spoke of their site assessments at US customers with pride, supporting the assumption that Responsible Care applies within and outside

Canada. On the other hand, at SM, Emmert spoke of shipping expired product to its US parent in a way that seemed to assume that once the product left the country, it was no longer worth thinking about.

There are some limits to Responsible Care's applicability

At ET, there was definitely the feeling that there are limits to Responsible Care. Kavon spoke of "massaging" the customer business discontinuance policy because it was "too cavalier" with customers. Reed hinted that responsibility is in the eyes of the beholder: "Balancing the initiative is most difficult. Different people have different levels of safety." He also spoke of being "careful not to overkill." Winnett felt that the communication of 'worst-case scenarios' to the public was beyond Responsible Care: "Nowhere in the blue book does it say 'worst-case scenario.'" But, with regard to what is actually written in the 'blue book,' V.P. Nuse affirmed: "...there's nothing in Responsible Care that shouldn't be there."

Activities that cannot be done according to Responsible Care must be done

Interviewees did not seem to believe that activities should be ceased if Responsible Care implementation proves difficult, at least not in the short term. People felt that companies should improve as quickly as they can, and that companies had been improving as quickly as they could. Carter argued that products that SM drops will simply be made and sold by another company. Thus in his mind, shutting down activities that - though not up to the standards of Responsible Care - are safer than usual for that activity, may actually defeat Responsible Care's purposes.

6.2.3 Chemical Companies' Current Status and Capabilities

Table 6.3 Current Status and Capabilities

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Some companies would be inclined to behave irresponsibly were it not for Responsible Care.	yes	yes	
Not all companies would or could behave responsibly without industry support.	yes	yes	
Companies' performance is not yet up to the standards of Responsible Care.		yes	
Past company actions may have been unacceptable.	yes	yes	
The industry must improve, and in a timely manner.	yes	yes	"timely" only at ET
Ongoing progress must be reported to the CCPA.			
Companies only have to do what's practicable.	not fully	not fully	
Collectively, CCPA companies have the expertise necessary to behave responsibly.	yes		ET feels it has the expertise itself
Generally, companies control their products, uses, processes, equipment, services and facilities, though sometimes not releases or risks.	yes		
Companies are generally capable of doing the things demanded of them by Responsible Care.	yes	yes	with difficulty
Companies can communicate Responsible Care to others and assist them.			
Companies do need help from others, especially in dealing with emergencies.	no		
Companies can be trusted to make difficult judgement calls.	yes	yes	calls have to be made, with or without trust

Companies only have to do what's practicable

At both companies there was conflicting evidence regarding the belief that companies only have to do what's practicable for Responsible Care. At ET there was controversy over how far to take the responsibility to ensure proper customer handling of chemicals. Some felt Responsible Care had been taken too far, while others (those who took things that far) would clearly disagree. At SM, Woods spoke of pushing improvement even though it was becoming harder and harder, while Carter set the clear limit of improving as fast as economically practicable, arguing "better that we stay in business and improve as fast as economically practical. Someone else will make it if we

don't." My sense was that at SM, the assumption was that SM can only do what's practical, but the belief was that it should try its best.

Collectively, companies have the expertise to behave responsibly

Interviewees at ET displayed clear optimism that they could figure out how to do the things required by Responsible Care themselves. At SM, on the other hand, McNees admitted: "We learned as we went. We didn't really know what we were doing."

Companies can communicate Responsible Care to others and assist them

There was uncertainty surrounding the belief that companies can communicate Responsible Care to others and assist them with it. ET felt that its customers were happy with Responsible Care, but admitted communicating with the community was difficult. SM had to bully some of its customers into participating in Responsible Care assessments.

Companies need help from others, especially in dealing with emergencies

ET interviewees never spoke of needing help from others, whether concerning emergencies or anything else. This can probably be attributed to senior V.P. Nuse's leadership style. He told me the story of how in 1989, when he asked his managers if they could achieve Responsible Care compliance by 1992, they answered 'We'll need help.' His answer to them: "No, we're going to provide help. We're going to become leaders."

Companies can be trusted to make difficult judgement calls

Interviewees at both companies cited with pride several examples of difficult judgement calls they and their companies had had to make. For example, Winnett pointed to 70 acres adjacent to ET's Toronto site that the company could sell for a half-million dollars an acre, but that ET has refused to sell. SM's McNees described a decision to stop producing a product that was already on backorder, in order to more fully investigate a runaway polymerization (the investigation was not strictly necessary, just cautious).

He pointed out that "The plant didn't complain. These things [Responsible Care decisions] are very well established."

My impression was that Responsible Care's assumption that companies can be trusted to make difficult judgement calls was replaced with the assumption that companies really have no choice but to make difficult judgement calls, but that they do a better and better job of it each time. SM's Carter: "It's not the easiest thing to do; for example, choosing more expensive carriers, or turning business away because the customer looks shady, especially when you're paid on commission. Putting your money where your mouth is is difficult."

6.2.4 Management for Responsible Care

Table 6.4 Responsible Care Management

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Senior management commitment to Responsible Care is important.	yes	yes	"true" internal commitment
Acceptance or adoption of Responsible Care are insufficient without implementation and performance of specific practices.	yes	yes	
Clear assignment of Responsible Care responsibilities is necessary.			line responsibilities, not a single leader
Responsible Care must be part of planning and business processes and operations.	yes	yes	
Management systems are necessary, Activities should be "procedurized."	yes		
Writing policies, standards and procedures down makes them more effective and responsible.	yes		
Programs should be kept active and up-to-date; they should change over time.	yes	yes	
Programs, plans, procedures, policies and standards should be tested and audited regularly.			external verifications praised
Responsible Care programs are not always perfect at first; sometimes they need correction.	yes	yes	
Companies must improve continuously.	yes	yes	
Chemical companies will never be perfect.			
What might be "satisfactory" today will not be satisfactory in future.			
Changes in company activities can cause new hazards or risks. They should be recorded and managed.			

Senior management commitment to Responsible Care is important

At both companies, people said that senior management commitment made the difference, made Responsible Care happen. It is important to note that the commitment they were referring to is "true" commitment, felt internally within the company. They also spoke of "lip service," which could take the form of an official commitment, but lip service should not be confused with "true" internal commitment.

Implementation and performance of specific practices is necessary

People at both companies took for granted that without implementation and performance of specific practices, Responsible Care would amount to little more than lip service, and would not accomplish its objectives.

Responsible Care must be part of planning and management processes

Interviewees at both companies pointed to the incorporation of Responsible Care into planning and management processes as good. Kavon spoke with pride of how in ET's reorganization of the sales force, the first question being addressed was how to handle Responsible Care. Baker believed in his attempts to create Responsible Care initiatives that could not be perceived by employees as "just another program." Similarly at SM, Rutter stressed the necessity of making Responsible Care part of line functions. McNees: "It should be natural to the business." Emmert approved of SM's decision to change the way its sales people were compensated because the old compensation scheme conflicted with Responsible Care.

Management systems are necessary; activities should be procedurized

Several interviewees were actively working on procedures. They reflected a belief in procedurizing activities to slow them down and control them. ET plant manager Williams: "Responsible Care slows things down, but that's what you want to do, so that no one fucks up." On the other hand, he said that there was little in Responsible Care that was actually new, rather

"Responsible Care is really just the formalization and continuous improvement of the procedures that were in place." ET's Cash described sessions at which ET managers "kick around hypothetical scenarios so that policy doesn't have to be made up on the spot. That's the worst time to make policy." When asked, people at ET said that their companies had avoided becoming too bureaucratic.

Writing policies, standards and procedures down makes them more effective

Similarly, people at ET seemed to support the idea of writing everything down. They said that it was difficult sometimes, but that it was part of the accepted process of procedurizing manuals, job descriptions, goals, records, etc. One exception was ET's minimization of the paper trail following discovery of a potential regulatory infraction at a customer's site. "Written" included computer-based systems.

Responsible care programs are not always perfect at first

Interviewees at both companies said they found holes in their Responsible Care efforts thanks to verifications, unfortunate incidents, and ordinary learning during implementation. People such as SM's McNees said that a lot of learning is taking place along the way, and that sometimes it takes a few tries to get things right. Recall McNees' "We learned as we went." People believed that they learn from their mistakes. Thus they believed that Responsible Care efforts are not always perfect at first and need correction. ET's Kavon pointed out that ET's business discontinuance policy had been revised about ten times: "That's the beauty of Responsible Care. You can spend hours changing and revising - you don't have to get it right the first time... Responsible Care is a learning process."

Companies must improve continuously

People at both companies believed in continuous improvement. President Woods of SM and Senior V. P. Nuse of ET both saw Responsible Care as consistent with total quality management. They were able to quote with approval many planned and actual performance improvements.

What might be satisfactory today will not be in future

I saw some evidence of the belief that what is satisfactory today may no longer be satisfactory in future. I think primarily most efforts are still focused on trying to get up to the standards people define as satisfactory for today. Companies are still catching up. But SM's McNees did mention that the standards being used for the CCPA's Responsible Care compliance verifications seemed to be getting more stringent with time, and ET's Baker said that people were starting to expand their conception of Responsible Care to include new practices. He also said that they "try to do something new every year to keep the thing going."

6.2.5 Chemical Companies' Effects on Others

Table 6.5 Companies' Effects on Others

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Companies affect others through their actions and decisions.	yes		
Companies should think about how their actions and decisions affect others.	yes		
Companies should try to characterize how they affect others.	yes		
Many operations could be hazardous or risky to the public or the environment. Many are inherently hazardous or risky.	yes	yes	

Companies' decisions and actions affect others

When people at ET described the company's incidents at its Toronto plant, its consultations with the community of Edmonton, and its rerouting of carriers around the town of Kingsville, there was no doubt in their minds that company decisions and actions affect others.

Companies should think about, and characterize, how they affect others

ET's George pointed out that Responsible Care forced people at ET to think about how the company affects others when reacting to its Toronto incidents. ET also uses risk assessments to characterize how it affects others.

Many activities could be hazardous or risky; many are inherently so.

When people at ET spoke about the incidents that occurred at Toronto, it was clear that they believed that their company's activities can be hazardous and risky. Their presentation of non-zero risk assessment results also showed this belief. Emmert cited SM's procedures for sales samples carried in salespeople's cars as evidence that SM believes that even seemingly trivial activities can be risky. People at both companies also spoke of some of the risks of their company's operations in terms that revealed their belief in the inherent riskiness of some activities.

6.2.6 Chemicals

Table 6.6 Chemicals

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Chemical compounds are born of R&D and proceed through test marketing to manufacturing.			SM undertakes no R&D in Canada
Chemicals have linear lives: they are manufactured, distributed and used, then they become wastes.			
New applications for chemicals can arise.			
Chemicals are inherently hazardous and can harm humans and/or the environment.			each chemical is different
Hazards and risks are part of a chemical's character. Chemical products are not complete without hazard and risk information.			

Chemicals are inherently hazardous

Some interviewees at both companies did not seem to subscribe to the belief that chemicals are inherently hazardous. This issue tended to arise in discussions of the issue of blanket bans of chlorine compounds. Some people believed instead that all chemicals are different: some are hazardous and need management; others don't. They believed that chemicals' hazard properties can be characterized and thus chemicals should not all be treated alike. For example, SM president Woods praised an agreement with governments that promised "no blanket bans; we will look at individual chemicals."

Notably, ET senior V. P. Nuse acknowledged that "Chlorine is a product that deserves the attention" it has received.

6.2.7 Hazards, Risks and Truth

Table 6.7 Hazards, Risks and Truth

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Some hazards and risks are worse than others.	yes	yes	
Risks are at least approximately quantifiable, meaningful, and worth measuring and controlling.	yes		
Risk does not have to be eliminated. Some risks are acceptable.	yes		
Effects on humans and the environment are knowable.			
Potential hazards and potential impacts are as important as actual hazards and impacts.	in part		within limits
Companies should evaluate potential and actual hazards and risks as early as possible.			
Not all information on hazards and risks is available.			
Hazards and risks can change with time, and should be evaluated regularly.			
Truth is established by science and experts.			
Knowledge and understanding change constantly.			
Companies must continually work to improve their understanding, knowing that complete understanding is unlikely.			

Some hazards and risks are worse than others

When people at either company spoke of risk, they spoke in inherently comparative terms, for example: 'We're just as risky as airplanes,' or 'We chose hydrochloric acid instead of chlorine even though there's more in-plant risk.' Clearly people believed that some risks are worse than others.

Risks are quantifiable, meaningful, and worth measuring and controlling

ET had quantitative risk assessments performed on its plants. It was clear that both Winnett and Baker respected the quantitative results of these assessments. Winnett implied that quantitative risk assessment results may be used as a decision criterion in choosing between different processes: "I'm doing a QRA [quantitative risk assessment] for chlorine even though we don't use it, because one day someone might suggest it."

On the other hand, Winnett objected to the use of 'worst-case scenarios' in risk assessment. He argued that they were not meaningful and that 'most likely scenarios' were more appropriate. I believe this to be the proverbial exception that proves the rule that he believes most risk data are meaningful.

Risk need not be eliminated; some are acceptable

ET's Cash summarized it well when he said: "There are many things you can do to reduce risk, but you can't eliminate it." In fact, he approved of the trend towards ET providing carriers (instead of ET's customers), thereby taking on more risk, because it allowed ET to better control the risks involved: "The carrier risk is ours. But we can control it." And Law pointed approvingly to ET's decision to take on more in-plant risk at Edmonton for the sake of community relations. As I spoke to several people at both companies about communicating risk to the public, it seemed quite clear to me that they assumed that simply eliminating the risks was not an option. I was left with the impression that managing risks is a fundamental competence of the chemical industry. Thus people believed that some risks are acceptable.

Potential hazards and impacts are as important as actual hazards and impacts

Winnett approved a quantitative risk assessment for a potential design change, and spoke of the risk ramifications of different potential transport and storage alternatives. His rejection of 'worst-case scenario' risk data, however, implied that he saw limits to just how 'potential' hazards should be in order to be taken seriously.

6.2.8 Understanding and Managing Chemical Risks

Table 6.8 Understanding, Managing Risks

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Chemicals, chemical products, and their uses must be understood and managed.			
Chemicals' associated hazards and risks must be understood and managed.			
Chemicals and products must be managed throughout their life cycles. Companies have some responsibility for all points in chemical life cycles.	in part	in part	
Companies know about their chemicals, products and services and can advise customers.			
Companies know about the wastes associated with their products.			
Companies must protect people and the environment from their chemicals, products, processes and operations.			lack of evidence is puzzling
Companies don't want to hurt society.			"
Companies must not pose unacceptable risks.			"
Companies must ensure risks and effects are acceptable to stakeholders.			"
Effects, hazards, risks, injuries and damages should be reduced and minimized.	yes		community concerns may take precedence
Effects, hazards, risks can be controlled.	yes		
Human factors must be considered in risk reduction.			
The impacts, potential emergencies, hazards, handling and disposal of chemicals should be considered as early as possible.			

Companies share responsibility for chemicals throughout their life cycles

ET's Baker explained that the company had not undertaken life-cycle analyses yet, partly because ET's processes' raw materials are fairly benign. However, as several at ET described their efforts to require responsible use of products by customers, assess customers, and change transportation routes, it was clear that they accepted some responsibility for other steps in the life cycles of ET's chemicals.

Several at SM told me the story of a customer who had received contaminated drums. It was determined that the source of contamination was actually at SM's drum supplier. Emmert chastised the sales organization for passing blame along and not taking responsibility vis-à-vis the customer. (She issued a credit note to the customer over the sales department's heads: "Even if it's technically our customer's responsibility, we incur the cost.") Woods was disappointed that no-one had thought about the potential environmental impacts of the problem, but were instead worrying about blame and liability. This story left me with the impression that different people at SM had different beliefs about how much responsibility SM shares for other steps in the life cycles of its products.

Effects, hazards, risks, injuries and damages should be reduced

ET has undertaken several projects to reduce hazards or risks. Such engineering projects were actually not mentioned much by interviewees. ET's George pointed out that "A plant full of engineers will naturally focus first on the hardware. Responsible Care forces that community concerns be looked at too." Thus it was community relations that people spoke about to a researcher who asked about Responsible Care. The technical effort to reduce risk was taken for granted.

Law's approval of ET's decision to use hydrochloric acid instead of chlorine at the Edmonton facility is interesting. For this decision did not minimize risk (at least in a technical sense), but it did address stakeholder concerns. Law's approval would seem to suggest internalization of some of the deeper values

of Responsible Care regarding stakeholder concerns - even though it apparently contradicts the initiative's stated belief in minimizing risks.

Human factors must be considered in risk reduction

Human factors were not mentioned much, but Woods of SM offered one shining piece of evidence in support of the importance of human factors when he described the increasing difficulty of implementing Responsible Care now that implementors are "really trying to climb inside people's heads."

6.2.9 Chemical Emergencies

Table 6.9 Chemical Emergencies

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Emergencies can happen, and can happen anywhere.	yes	yes	
Emergencies will always happen; they cannot be totally eliminated.	yes		
Chemicals are especially important in emergency situations.		yes	
Companies should prepare for accidents.	yes		
Companies should consider compensating people dislocated by company emergencies.			
The number and consequences of incidents can be reduced (incidents can be prevented).	yes	yes	
Health and safety performance can be meaningfully measured.	yes		
Occupational safety will be an issue for the long term.			

Emergencies can happen and can happen anywhere

There had been a sufficient number of accidents at locations "close" to ET and SM, such as neighbours and customers, even recently, that it was very evident in people's minds that emergencies can happen and can happen anywhere. In addition, people at ET believed they knew from experiences at Toronto, and from risk assessment results, how accidents could happen to ET.

Emergencies will always happen; they cannot be totally eliminated

The assumption that emergencies will always happen (and can't ever be completely eliminated) has probably existed in the chemical industry for years. It certainly seemed implicit in everyone's talk. George's approval of ET's efforts to improve emergency response at its Toronto plant (after two emergencies in 1994) showed an acceptance that more emergencies will happen.

Chemicals are especially important in emergency situations

SM's Emmert told the story of an explosion at a customer's site. People at SM contacted the customer to determine if any of SM's chemicals were involved. It turned out that none were, nonetheless the story shows the belief that SM's chemicals could be important to the emergency situation.

Companies should prepare for accidents

As a logical extension of the "accidents happen" assumption, interviewees at ET believed that companies should prepare for accidents. George described ET's actions after its accidents at Toronto, citing not only attempts to avoid accidents, but also preparation to deal with the next accident: "If it weren't for Responsible Care continuous improvement, we might not have done so much after the June incident." And Law spoke approvingly of ET's emergency drills at Edmonton in preparation for emergencies.

The number and consequences of incidents can be reduced

The declining number of safety incidents at both companies had everyone convinced that safety can be improved. Engineering work as well as procedures and human factors were seen as capable of improving safety.

Health and safety performance can be meaningfully measured

Most interviewees seemed to believe that improvements in safety numbers represented true improvements in safety. (Only SM's Woods added the caveat that "Performance has improved, to the extent that we're measuring it.") Thus safety numbers were seen as meaningful. This assumption may have been partially externally imposed by the attention paid by the public and governments to the number of reportable incidents ("That's all anyone looks at," said Baker). But people believed, and were proud of, their safety numbers.

6.2.10 Normal Chemical Operations

Table 6.10 Normal Chemical Operations

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Chemical facilities and hazardous waste sites tend to have finite lives.			
Some adverse effects develop only after facilities are closed. Companies must protect against future latent environmental effects.			
Companies know the effects, hazards and risks of their operations.	yes		
Companies can determine which effluents and emissions should be monitored or controlled.			

6.2.11 Chemical Wastes

Table 6.11 Chemical Wastes

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Non-hazardous waste is not worthy of as much concern as hazardous waste.			
Companies should classify waste as hazardous or non-hazardous based on their own knowledge, not regulatory lists.			
Companies are encouraged to apply the same principles to non-hazardous waste as they do to hazardous waste.			
Hazardous wastes must be managed throughout chemical and chemical product life cycles.			
Companies should look continuously for sources of waste, as these can change.			
There is a hierarchy of hazardous waste management options (see Chapter 2 for details). Companies should look for opportunities to move up the hierarchy as early as possible and continuously.			
Hazardous waste management and disposal technology improves continuously.			
Companies should participate in efforts to improve hazardous waste management technology.			
Hazardous waste treatment and disposal facilities are desirable. Companies should promote them.			
Land should be usable after a hazardous waste treatment or disposal site is decommissioned.			
Companies should identify, study and characterize previously used treatment or disposal sites.			
Hazardous waste generation should be recorded.			

I gathered very little data concerning cultural attitudes towards wastes. Baker described ET's waste reduction efforts, which included efforts to reduce non-hazardous emissions. People at both ET and SM cited instances of redesign, reduction and reuse, but also still pointed to scrubber and containment projects with pride. ET's Baker's statement that "It makes no sense to reduce for the sake of reducing" showed his disbelief in Responsible Care's hazardous waste management hierarchy, which professes inherent superiority of elimination and reduction, recycling, or reuse over other alternatives.

6.2.12 Chemical Company Employees

Table 6.12 Chemical Company Employees

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Employee behaviour will not necessarily simply reflect company initiatives.	yes	yes	
The work environment is important to monitor.			
Employees do not have to be isolated from risk.	yes		
Companies must not pose unacceptable risks to employees, and must protect them.			
Employees deserve information about hazards and risks and should feel that they know them.			
Employee confidence in company activities is desirable.			
Employees do not know hazards, the law, or how to behave responsibly without information and training.	yes	yes	
Employees can understand risk assessment information.			
Companies should inform and train employees in hazards, the law, standards and emergency response.	yes	yes	
Employees may not behave as trained to; they should be assessed and re-trained as necessary.	yes	yes	implicitly
Individuals have freedom of action at companies and can affect outcomes. They can help or hinder Responsible Care.	yes	yes	
All employees must be involved in Responsible Care responsibilities.	yes	yes	
Individual efforts deserve support and recognition.		yes	
Responsible Care is good for employee morale and pride.	yes	yes	
Employees can affect community perceptions. Companies should encourage them to speak out.		yes	

Employees will not necessarily simply reflect company initiatives

Interviewees clearly believed that employees are different from the companies they purportedly serve. They spoke of employees affecting outcomes; some helping Responsible Care, some hindering it. Several spoke of the need to encourage and train employees in the hopes of securing their service to Responsible Care. ET plant manager Williams summed up the view from the front lines:

> "A certain percent of the population [employees] are naysayers: anything from the company must be bad, must be a plot. No amount of education will help. Then there are the fence-sitters. Then there are the people who believe it's [Responsible Care is] right."

Others at ET also pointed to the union-business relationship as a source of employee independence: "At first, the union looks at it [Responsible Care] as 'something new for management to screw us with.'" (ET's Cash)

Employees need not be isolated from risk

Underlying interviewees' descriptions of efforts to improve safety for employees and others was the acceptance that employees may be exposed to risks greater than zero. In fact, Law pointed with pride to ET's decision to take on more in-plant risk at Edmonton for the sake of community concerns.

Employees do not behave responsibly without information and training

At both companies, Responsible Care champions and people in charge of Responsible Care training repeatedly implied that employees do not know what Responsible Care is and means unless it is drilled into their heads over and over: "...just keep hammering away until people realize all the things they're doing are really Responsible Care" (ET's Williams). This indoctrination was described as difficult and as requiring perseverance, though ET's Varennes plant manager Thompson said it was a little easier in the case of new employees: "New people have never done anything else." Plant managers and others also said that plant employees have difficulty seeing how what they do fits into a bigger picture.

Emmert pointed out an interesting exception at SM. To be hired as a customer service representative, she said, these days one must have a knowledge of Responsible Care. Thus the new employee brings Responsible Care knowledge to his or her job.

Individuals affect outcomes and can help or hinder Responsible Care

Interviewees overwhelmingly believed that individuals affect outcomes at chemical companies. This was why they felt that employees must be trained, empowered and motivated. Recall ET's Williams' description of the procedurization of activities as slowing things down so that "no one fucks up." SM's Carter praised strong senior management commitment as another way to limit negative individual decisions. SM's president himself admitted that "It will take some time for sales to internalize Responsible Care."

Individuals deserve support and recognition

At SM, people spoke a lot about supporting employees with resources, organization, encouragement and senior management back-up. Support for individuals was seen as necessary to ensure appropriate individual actions. Carter clearly felt that this had been achieved at SM:

> "It's [Responsible Care is] comfortable. In any moral or ethical compromise, I have the authority to make the right decision and I feel comfortable that management will back me up."

Responsible Care is good for employee morale and pride

Several saw Responsible Care as empowering people, making them feel good about where they work and what they do. Apparently morale was not always so good. ET's Nuse and Winnett described Responsible Care as providing an opportunity for people within the industry to do what they (had presumably always) wanted to do. Winnett: "Responsible Care has provided a vehicle for doing things that people wanted to do." Nuse credited Responsible Care with creating "a tremendous pride in the industry, that was waning." SM's Carter gushed: "It's morally good. It's righteous. It's great. It was a lot of fun working on it... Responsible Care breeds happier people."

Employees can affect community perceptions

Especially at SM, interviewees expressed the belief that employees who feel good about their work become ambassadors. Emmert said that Responsible Care has "allowed people to promote SM to the public and promote the safety of the industry. Ten years ago, people couldn't respond to the criticisms." Both ET and SM spoke with pride of sending employees out to the community. It was assumed that their enthusiasm could affect the public.

6.2.13 Communities Around Facilities, and the Public

Table 6.13 Communities and the Public

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Communities around facilities and along transportation routes deserve more attention than the general public does.			focusing on communities
Companies want community to have confidence in them. They want to be proud of their standing with communities and other businesses.	yes	yes	to get favourable regulatory climate
Doing Responsible Care increases a company's standing with its community. If communities understand company activities, they will perceive the company more favourably.	yes	yes	
Companies and communities can help each other, including with their images.			
Public perception and confidence is important and arises from responsible management using systems.	yes	yes	no mention of mgmt. systems
Communities have rights, responsibilities, concerns, needs, resources and interests.			
Community interests are sufficiently homogeneous to be represented by organizations or individuals.	in part		
Community interests and representatives change over time.			
Some community members have concerns. Some concerns are "legitimate;" others are not.	yes		
Companies can and should understand community rights, concerns and needs. Citizens and interest groups are worth listening to.	not yet		beginnings at ET
Companies should cooperate, coordinate and work with communities.	yes		
Companies should be open with public, telling it what they are doing if it asks. Companies should prepare to answer questions.	not yet	not yet	
Trade secrets are important to protect.			

Unauthorized access to facilities threatens safety.			
Communities and the public do not have to be isolated from risk.	yes	yes	
Communities have the need and right to know the hazards and risks presented to them by chemicals and transportation; and corresponding safeguards.	not yet	not yet	
Members of communities and the general public are generally unaware and ignorant of chemicals.	yes	yes	
Companies should develop information to regularly provide unsolicited to the community.	not fully	not fully	it's happening, but some are hesitant
Communities want to understand and be proud of companies.		yes	
New areas of public concern arise over time and can grow into major issues. Public demands change continually.			

Communities deserve more attention than the general public

The distinction between communities around facilities (and along transportation routes) and the general public was present in interviewees talk, but not strongly. It seemed that people focused all efforts towards communities. Interviewees saw the public at large as influenced by the opinions of local communities. I got the impression that it was not so much that interviewees believed that the public deserves less attention; rather that their efforts had up to that point been focused primarily towards the community, and so it was the community that they spoke of.

Companies want community confidence and standing

Interviewees believed that community confidence in the activities of their companies was desirable. They saw community confidence as a key to good public opinion, and good public opinion as a prerequisite for a favourable regulatory climate. People seemed interested in their company's standing in the community fundamentally for the purpose of avoiding onerous regulations, rather than because of any inherent desire to please the community. ET's Cash: "We want to bring the public around so we don't get regulated into the ground, basically." People spoke approvingly of ET's actions after incidents at its Toronto plant and of employee visits to the community. Thus they took community confidence seriously.

Doing Responsible Care increases companies' standing with communities

People such as ET's Nuse and SM's Carter outlined their belief that once members of the community know about Responsible Care and their company's practices, they will become confident in the company. Carter said the two community members on SM's compliance verification teams were "blown away." He said they "called lots of community people [who had seen an SM display at a community event] and received glowing reports."

Public confidence is important and arises from responsible management

Public perception was seen as important because it was seen as driving regulation. However, interviewees believed that public relations or advertising would not sway a skeptical public, but rather that only evidence of responsible management practices would. People expressed dismay that public perception had not yet improved; I took this as evidence that they valued public perception.

Community interests are sufficiently homogeneous to be represented

People at ET believed that seeking community representatives was a worthwhile endeavour, but cautioned that the community may not be easily represented. Law seemed to feel that in the design of the Edmonton plant, the community was adequately represented; on the other hand, Toronto plant manager Williams described his community as having "such a diversity of agendas," that a community advisory panel may not adequately represent the community.

Companies should understand community rights, concerns and needs
Communities are worth listening to
Be open with the public, telling it what the company is doing
Develop information to provide unsolicited to the community
Communities have the need and right to know hazards and risks

Interviewees at both ET and SM were candid about the difficulties of instilling the Responsible Care community awareness culture at their companies. The

story was similar for several Responsible Care cultural elements, such as "companies should understand community rights, concerns and needs," "communities are worth listening to," "be open with the public, telling it what the company is doing," and "develop information to provide unsolicited to the community."

Interviewees pointed out that the natural tendency of chemical companies was not to deal with the community, but argued that people were learning. ET plant manager Williams pointed out traditional chemical industry symbolism: "...fences, barbed wire, 'KEEP OUT.' No care crossed the fences either way. Now we invite people in. We never used to ten years ago." ET's Winnett: "It's difficult for industry to talk to the public." People at ET spoke highly of its several open houses during the design of its Edmonton facility and its addressing of community concerns after its incidents at Toronto. But Law described some of the objections at the time: design people saw open houses as "more opportunity to get left-field questions. If you poke at the public, you'll find one of them who isn't happy." People said that in general, employees were still scared of the public and still needed encouragement. SM's Carter: "We want to tell them we're a dangerous plant, but we don't want to scare the hell out of them."

Interviewees said entrepreneurial plants saw no need to share information, and design engineers saw community involvement as an unnecessary interference and complication. ET's Williams spoke of the need to "condition the local authorities before going to the public" with risk information. There did seem to be a recognition that companies should (or have to) do community awareness, but it was clear that people weren't fully comfortable doing it yet.

Companies should cooperate, coordinate and work with communities

Winnett and Williams of ET spoke with pride of their efforts to cooperate with community governments and agencies before communicating the results of the Toronto plant risk assessment to the community. Law pointed to cooperative efforts at Edmonton and Cash mentioned cooperating with a request from the town of Kingsville to divert carriers around the community.

The feeling at ET was that the company should cooperate and work with communities.

Communities and the public need not be isolated from risk

In general, interviewees believed that risk cannot be eliminated (see subsection 6.2.7), and specifically seemed to take it for granted that communities and the public do not have to be isolated from risk. I took the attention paid to risk communication as evidence that no one seriously thought communities would ever face zero risk.

Communities have the need and right to know hazards and risks

The belief that communities have the right to know the hazards and risks posed to them by companies seemed to have only partially penetrated the cultures at ET and SM. Winnett objected to the suggestion that the community needed to know 'worst-case scenario' data from ET's Toronto plant risk assessment, but nonetheless he seemed to accept that ET had to communicate the information anyway. ET's Edmonton design team thought community consultation was excessive, and yet they did it anyway. At SM, Carter described an evolution in attitudes towards providing information to the community at their Sarnia plant, but admitted that "We haven't *broadcast* it [the risk associated with our plant] even now. We'd tell someone who asked."

I hypothesize that the belief that communities have the need and right to know hazards, risks and safeguards is not quite yet embedded in the culture at ET or SM, but that Responsible Care is making people think about it.

Members of communities and the public are ignorant of chemicals

Interviewees believed that the general public knows very little about chemicals, doesn't understand risk, is unduly afraid, and is prone to knee-jerk reactions. SM's Carter: "We're still scared of the public's low level of education. People don't realize what goes into shampoo, what it takes to make food..." He said that in his dealings with the public at schools and

community events, he was "shocked by the level of ignorance... The general public's knowledge of things is crappy." ET's Winnett argued that the public doesn't understand 'worst-case scenario' risk assessment results. Baker questioned how to communicate 'worst-case scenario' risks to the public knowing that "People will go nuts!"

Companies should develop information to provide to the community

SM's Carter spoke glowingly about visits to community schools to educate people about chemicals and risks. The design of ET's Edmonton facility, which I have referred to several times already, involved the provision of much unsolicited information. ET's Law believed that "We're proactive about letting people know about our problems. We don't believe in hiding." People at both companies showed me information they had used at community events to raise awareness. At both companies, people spoke of ensuring that their information is perceived as credible, and not as advertising.

6.2.14 Other Parties (e.g. Contractors, Suppliers, Distributors, Customers, etc.)

Table 6.14 Other Parties

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Other parties are handling company products.			
Companies are partly responsible for ensuring that other parties behave responsibly, including policing them, within limits.	yes		
The actions of many different parties can affect safety.	yes		
Other parties are generally held to a subset of Responsible Care standards.	yes		
Other parties are still fundamentally responsible for their actions.	yes	not fully	SM takes on extra responsibilities
Other parties are only held to Responsible Care standards where company products are involved.			
Customers do not have to be isolated from risk; but companies must not pose unacceptable risks.			risky products mean risk for customer by definition

Other parties' confidence is desirable. Responsible Care will increase companies' standings with other parties.	in part	in part	desirable, yes; will increase standings, no consensus
Other parties may not behave as responsibly as they should.	yes	yes	
Other parties might not know all hazards and risks.			
Companies generally know a lot more than other parties.	yes	yes	
Companies should carefully select the other parties they do business with.	yes	yes	
Other parties can change their behaviour.			
Companies should cooperate, coordinate, and work with other parties and nudge them into responsible behaviour.	yes		
Companies would jeopardize sales for the sake of Responsible Care.	not fully	not fully	sales people tend to disagree
Other parties deserve information on hazards and risks (even potential new customers).			
Companies can police the actions of other parties, but only to a certain extent.	yes		
Companies must verify that other parties are behaving responsibly, but only to a certain extent.	yes		

Other parties are still fundamentally responsible for their actions

Sales and marketing people spoke as if customers and others were fundamentally responsible for their behaviour. But at SM, Emmert spoke very highly of times when SM had taken on financial responsibilities even though it was technically not responsible. Cash pointed out that ET may also be taking on new responsibilities, by being so strict with its carrier requirements that it normally now provides the carriers (instead of its customers doing so). It seemed to me that some people's conceptions of their companies' responsibilities had broadened even beyond Responsible Care's intentions.

Customers do not have to be isolated from risk

As a result of the belief that some chemicals and products are risky, people almost by definition assumed that their customers - who buy these products - do not have to be isolated from risk.

Responsible Care will increase companies' standings with other parties

Interviewees at ET said that site assessments had been well received by their customers. They cannot have been all that well received, however, because Reed called for more a careful "balancing" of Responsible Care, and Kavon explained how they had "massaged" their business discontinuance policy because its "initial approach was too cavalier." Clearly everyone believed that customer confidence was desirable, but they were divided over how zealous Responsible Care practices would affect ET's standing with customers.

Other parties may not behave as responsibly as they should

Interviewees described several instances of irresponsible behaviour by several different other parties. For example, Winnett told the story of ET's Varennes plant, which stopped sending solid waste to a provincially-regulated dump because it found a hazardous contaminant in the waste, only to have the dump ask ET why it bothered, given the tiny chances that anyone would ever find out. SM's Claggett said that he tries to convince his customers to fill out assessment surveys "using the 'right' arguments, but for the ma & pa's it usually comes down to 'do this or we'll suspend business.'" When I pressed ET's Cash, he admitted "I guess the customer isn't always right." The people I spoke to clearly had learned to assume that other parties may not be as responsible as they should be.

Companies would jeopardize sales for the sake of Responsible Care

People at both companies spoke with determination about how they had put customers on probation. Unlike at ET, McNees at SM said that SM had even lost sales due to Responsible Care. He said the lost sales did not go over well with SM's parent company. And ET's Reed said that "With customers, we have to be careful not to go too far." Similarly, ET's Kavon warned: "You have to be realistic about things such as discontinuing business with customers." He also pointed out that customer verification goes against a salesperson's instincts: "You just want to peddle." I hypothesized that some at SM and ET were willing to jeopardize sales for the sake of Responsible Care, but that these values had not yet permeated the companies' cultures.

Interestingly, though neither company had yet to make a sale based solely on its responsibility, Cash at ET, and Rutter and Claggett at SM, looked upon customer auditing and training as a value-added service that one day might enable them to charge more for their products. This might have been a way of reconciling Responsible Care values with the traditional belief that sales should not be jeopardized.

Companies can police the actions of other parties, but only to a certain extent

After their experiences checking and pressuring customers and other parties into taking responsible actions, people at ET believed that they could police others. But in their calls for 'balance' and 'massaging,' I saw that they also believed that they could only go so far in doing so.

Companies must verify other parties' behaviour, to a certain extent

Especially at ET, people were very proud of their assessment protocols. In fact, Cash worried that this expertise was concentrated in one individual, implying that it was too important to leave so vulnerable Again, people hoped that assessment would become a value-added service, or competitive advantage, for their company.

6.2.15 Emergency Response Agencies

Table 6.15 Emergency Response Agencies

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Emergency response agencies may not know all they need to handle chemical emergencies.			
Chemical companies have information, expertise, equipment and media relations skills that would be useful to first responders.			
Emergency response agencies deserve more information than the public. The onus is on companies to provide such information.	yes		
Authorities can help companies with emergency response. Companies should cooperate.	yes		no mention of authorities helping
In emergencies, companies are more generous with their people and possessions than normally.			

Emergency response agencies deserve more information than the public

Winnett and Williams of ET both accepted that emergency response agencies deserve more information than the public as they described how ET has shared its Toronto plant risk assessment information with local authorities (recall Williams' "condition the local authorities before going to the public"), but is only slowly determining how to share the same information with the community. It is also important to note that the agencies themselves have asked ET not to "go too quickly" to the public with the information.

6.2.16 Governments

Table 6.16 Governments and Regulation

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
The government plays an important role in society.	yes	yes	implicitly
Public policies and regulation can legitimately govern chemical companies' activities. Some regulation is necessary.	no	no	
Laws and regulations can be met or exceeded, in letter or in spirit. They are not always met.	yes		laws are not always met
Regulations are always changing. But they should not change so fast as to cause disorder.			
Government decisions should recognize the views of everyone who is affected.	in part		should recognize companies' views
Current distribution public policies, standards and regulations are out of touch.			
Governments need help. Companies should proactively participate, assisting and influencing public policies, standards and regulations.			assisting governments is in companies' best interests
Companies should advocate to governments. They should encourage their employees to do likewise.			
Governments should emphasize prevention and industry proaction in their policy agendas.			
Voluntary action ("self-regulation") is preferable to regulation. It is important to demonstrate this.	yes	yes	
The government deserves a say in determining voluntary industry actions.			Memoranda of Understanding with governments praised
Companies should tell governments what they know about old waste disposal sites.			

Governments play an important role in society

Interviewees did not specifically address the importance of governments in society, but based on their fear of regulation and their enthusiasm for Memoranda of Understanding (see below), I hypothesized that they assumed that governments do play an important role in society, in a positive (as opposed to normative) sense.

Regulation of the industry is legitimate and necessary

The people I spoke with rejected regulation more categorically than any other Responsible Care cultural belief, value or assumption. Interviewees believed that regulations were undesirable. They saw regulations as the result of government overreaction, as costly, onerous, bureaucratic, inefficient and ineffective, as treating symptoms only, as putting the industry at a competitive disadvantage, in short, as "trampling the business" (SM's Rutter). ET's Cash was most blunt:

> "Typically governments overreact. Onerous regulation doesn't really achieve what it's supposed to do, and it's costly as hell... All the EPA regulations [which exports to the US must meet] provide us nothing. For example, by the EPA, chlorine in water is a pesticide, but in a pulp mill it's not."

No one suggested that existing regulations should be ignored, but it was clear that interviewees believed that a world with less regulation would be a better world.

In fact, I learned that if ET finds a regulatory violation on a customer's site during an assessment, ET's policy is to minimize the paper trail and inform the customer only (not authorities), despite the potential legal liabilities this discovery exposes them to.

Government decisions should recognize the views of all affected

Conversations about relations with governments during regulatory development and negotiation of Memoranda of Understanding demonstrated that interviewees clearly believed that government decisions should recognize the views of chemical companies. No mention was made regarding recognizing the views of others.

Voluntary action is preferable to regulation; this should be demonstrated

I found widespread agreement that voluntary action, or self-regulation, is preferable to government regulation. ET's Reed: "We can do a better job than governments." Voluntary actions were believed to have bought the chemical industry a tremendous amount of credibility with governments. ET senior V.P. Nuse said that Responsible Care "has to a large extent convinced government that we are serious." SM president Woods:

> "At the industry level, Responsible Care has had a tremendous impact upon relations between the CCPA and the federal and provincial governments. It has built up credibility... [federal Minister of the Environment] Sheila Copps herself is fully supportive of MOU's [Memoranda of Understanding] and the CCPA's approach on chlorine."

In fact, ET's Baker boasted: "We don't even have to lobby. The government will give us a copy of the draft... It will ask the company what it should do."

6.2.17 The Environment

Table 6.17 The Environment

Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
Environment will be an issue for the long term.			
The environment does not have to be isolated from risk, but companies must not pose unacceptable risks to the environment.			
Companies can determine which areas are more environmentally sensitive than others.			

6.2.18 The CCPA

Table 6.18 The CCPA			
Responsible Care Cultural Belief, Value or Assumption	Is it Reflected in the Culture at: *(blank means insufficient data)*		
	ET?	SM?	Comments
The CCPA represents companies to society and raises awareness.			
Companies have obligations to the CCPA.			
The CCPA helps companies. Companies should cooperate, coordinate, and work with the CCPA.			

The CCPA represents companies to society and raises awareness

Interviewees seemed pleased with the CCPA's efforts to negotiate Memoranda of Understanding with governments. ET's Nuse also praised the wisdom of the Responsible Care founders for recognizing the effect that industry voluntary actions would have on regulators.

Companies have obligations to the CCPA

There was some hint that other companies were not happy with the aggressive role of the CCPA. ET and SM, on the other hand, seemed pleased with the efforts of the CCPA to make others behave responsibly. They said that they would do most of what they do anyway, even without the CCPA, but not everything.

Chapter 7

Conclusions

7.1 Purpose

This thesis set out to answer the question:

> **How would one assess if Responsible Care were part of the organizational culture of a chemical company?**

so that future researchers might be able to answer the question:

> **Do the cultures of chemical companies reflect Responsible Care?**

After brief overviews of both the Responsible Care initiative (Chapter 2) and the organizational culture literature (Chapter 3), I analyzed Responsible Care for its implied culture (Chapter 4). Then, using the literature on organizational culture research, I devised a methodology for determining if the organizational culture of a chemical company did in fact reflect the culture of Responsible Care (Chapter 5). Finally, I applied this methodology at two Canadian chemical companies and analyzed the results I obtained (Chapter 6).

Thus I am in a position to draw two types of conclusions, corresponding to the two research questions presented above. In section 7.2, I present conclusions concerning the success of my methodology for assessing if Responsible Care is part of organizational cultures. In section 7.3, I offer

preliminary conclusions concerning whether the cultures of ET and SM reflect Responsible Care.

In section 7.4 I offer some creative leaps, generalizing well beyond my data.

7.2 Assessing Organizational Cultures

Now that I have finished this thesis, and only now, I feel qualified to do it. The purpose of this section is to pass on some of my learning to the next poor Responsible Care culture researcher, so that he or she may avoid my mistakes, and may instead find new ones of his or her own.

7.2.1 Recommended (Modified) Methodology

As a result of my experience in doing this thesis, I recommend the following revised methodology for Responsible Care culture research:

- Limit the study to a dozen or two cultural beliefs, values and assumptions.
- Try to get as unbiased a sample of companies as possible.
- Describe the study as a study of the subject area (e.g. community relations), not of Responsible Care culture per se.
- Schedule two rounds of interviews of about an hour each with people in all different functions of the company, at all different levels, including both Responsible Care champions, people who seldom deal with Responsible Care, and new hires if possible.
- Research the major actions, incidents and decisions the company has made relevant to the subject area (perhaps the first couple of interviews can be used for this purpose).

- Bring someone else along for the express purpose of taking notes; take very prolific notes, and clearly marked whose language is being used (interviewer or interviewee). Do not tape record.

- Steer interview conversations around the cultural beliefs, values and assumptions to be studied. Use the company's major actions, incidents and decisions where necessary to stimulate discussion.

- Allow enough time between the first and second rounds to fully analyze the first round's notes in detail.

- At each person's second interview, probe specifically into questions that arose during the analysis of his or her first interview, including why some issues never arose. Questions can be more explicit in probing for cultural beliefs, values and assumptions.

The following sections explain my reasons for making such recommendations.

7.2.2 Limit the Study's Breadth

The reader who has already slogged through Chapters 4 and 6 has probably already anticipated my most significant conclusion regarding my methodology: too much breadth, not enough depth! Responsible Care is a very broad initiative, including literally hundreds of implied behaviours and beliefs. I really had no idea what I was getting into when I decided to look for the cultural implications of Responsible Care (nor did many of the chemical executives who signed onto the initiative know what they were getting into). Unfortunately the sheer volume of cultural beliefs, values and assumptions I was looking for prevented me from investigating each one in sufficient depth in my analysis (recommendations aimed at greater depth are presented in subsection 7.2.8). It also meant that each story I was told seemed relevant to several different Responsible Care beliefs, values and assumptions - and each probably was. It would have been better to study a much smaller set of cultural beliefs, values and assumptions, for example, only those pertaining to communities, or only those regarding risk.

7.2.3 Sample Bias

By going through the Canadian Chemical Producers' Association (CCPA) to contact companies to study, I guaranteed myself a biased sample of companies. It is unlikely that the CCPA referred me to companies with cultures that reject Responsible Care. They also did not refer me to the companies widely known for their Responsible Care leadership (I do not know why not). It is important to remember that the companies I visited were self-selected: they volunteered.

A biased sample was not a serious problem for this thesis, because my aim was largely to try out my methodology, refine it, and gather some preliminary data about Responsible Care and chemical company cultures. And anyone with a sample size of two would be hard-pressed to avoid bias. But in any serious attempt to determine the level of penetration of Responsible Care into the cultures of chemical companies, more attention should be paid to company selection.

A more subtle form of bias resulted from my mode of entry into individual companies. Because I was researching Responsible Care, I was always welcomed into the company by a "Responsible Care champion." It would be this person who would introduce me to other people. Anyone who met me would form pre-conceived notions about the things I was there to hear, based on my research topic and who had introduced me. Perhaps if sales managers had introduced me as someone studying the impacts of environmental initiatives on revenues, I might have been told different stories with different slants, even in response to the same questions.

In addition, the Responsible Care champions would make recommendations to me regarding whom to speak to. Without enough time to speak to everyone, I followed their advice most of the time. This meant that I spoke mostly to people who had been fairly heavily involved with some aspect of Responsible Care. These people can offer many more insight into Responsible Care than others at the company, but they may not offer a representative picture of the company as a whole. And again, it is unlikely

(though not impossible) that I would be sent to speak to someone who despised Responsible Care.

7.2.4 Description of Study

Sometimes I was introduced to interviewees as a researcher "sort of doing his own verification of Responsible Care." In these cases, I found it took me much longer to move the conversation beyond presentational data to deeper cultural beliefs, because my introduction had raised public relations flags in my interviewees' heads. If I had had a better pretext for being at the company's site, people's pre-conceived notions and tendency to provide "presentational data" (appearances people strive to maintain) might have been reduced, and I might have been able to get closer to cultural beliefs, values and assumptions faster.

In my case, because I was studying the whole Responsible Care initiative, I had little choice but to introduce myself as someone interested in the Responsible Care culture. But for someone focusing on a narrower set of beliefs, values and assumptions (as I recommend above), I would recommend introducing oneself as someone interested in that particular subject (say, employee relations), rather than someone interested in the culture per se. Of course, the new pretext cannot be deceptive or incorrect, but it might be phrased so as to elicit fewer 'stock' responses. The researcher should still be allowed to ask probing questions about the culture; they would still be relevant to study of the subject itself.

7.2.5 Interview Several People Across the Company

Based on the sixteen people I spoke to, I conclude that at this point in Responsible Care's history, assuming cultural homogeneity within chemical companies would be inappropriate. Different people held very different beliefs, values and assumptions in different subject areas of Responsible Care.

To try to circumvent the problems of a biased selection of interviewees and heterogeneous cultures, I recommend interviewing more people at each company. I especially recommend talking to more people who are less

directly involved in Responsible Care management, for example plant-level employees or financial people. It is likely that conversations with these people would be shorter and more difficult. "So tell me about Responsible Care," would no longer work as an interview question; more crafty questions would have to be developed, such as "Do you ever have to deal with the community? What's it like?"

7.2.6 Actions, Incidents and Decisions

Motivated by the presumption that only deep changes in a company's culture can approach permanence (see section 4.1), in this thesis I looked only for the 'deeper' levels of culture: beliefs, values and assumptions. However, concentrating exclusively on 'deeper' culture is less possible than I had envisaged. I found that beliefs, values and assumptions were relatively easily deduced from the ways that interviewees spoke about things, but they still had to have something to talk about. Actions, incidents or decisions taken by the company in the recent past were not only indicative of company beliefs in themselves, but the explanations my interviewees offered for them were rich with cultural beliefs, values and assumptions. But because I intended to focus on 'deeper' levels of culture, I had not deliberately collected stories of such actions, incidents or decisions. Some arose naturally in interviews, and I used them subsequently to get interviewees talking about such culture-rich subjects. The astute reader may have noted that my analysis of the cultures at ET and SM (in Chapter 6) was based on the way interviewees described and explained a relatively small number of actions, incidents and decisions. If I had known more, I might have elicited more culture-rich explanations. In future, I would recommend spending some time gathering as many of these "artifacts" of culture before proceeding to elicit deeper levels of culture through interviews.

In addition, I found that some cultural artifacts can replace deeper cultural assumptions. Consider the following example. In a company where the number of accidents is not measured, a valid cultural assumption might be that the number of accidents could be reduced. People might just assume this is possible. So probing to find out if people believe that the number of accidents can be reduced would be a reasonable research exercise. On the

other hand, in a company where the number of accidents has been measured for years and the number has been steadily declining, the numbers speak for themselves. The researcher who has studied the company's artifacts will know this and will be able to move right away to probing other cultural assumptions such as "Is the way accidents are counted valid?" or "Do you think you'll reach a point where the number of accidents will no longer be reducible?"

Of course, one should not become over-reliant upon artifacts. During my analysis I often had to stop myself from jumping to conclusions such as: "They consulted the community at Edmonton; they *must* believe the community has a right to know." Just because an action was taken does not mean that it was taken for reasons the researcher understands. The action does not itself tell culture. But the researcher should ask interviewees to explain the action - cultural insight will probably ensue.

I also found that while I could sometimes determine cultural beliefs, values and assumptions from people's talk around general subject areas (instead of talk about specific actions, incidents or decisions), such inferences were difficult for me to report or explain convincingly. My descriptions of such inferences in this thesis tend to start with phrases like "I got the impression that..." or "People seemed to imply that..." These statements cannot be very convincing to the reader who wasn't there. Inferences based upon explanations of specific incidents are both easier for me to explain, and more convincing to the reader.

7.2.7 Taking Notes

I found that during interviews I fell so far behind on my note-taking that I was continuously writing. This was both good and bad. On one hand, it prevented me from steering the conversation or asking clarification or probing questions as much as I would have liked to. On the other hand, it also prevented me from hypothesizing on the spot and unwittingly biasing my notes.

I also felt that I did not take as complete notes as I would have wanted to. Too many notes, not enough notes: clearly a problem! It is the practice of some management consultants to bring a second person to interviews, whose primary purpose is simply to take notes. Unfortunately this option was not available to me due to travel costs, but I would recommend it be tried where possible. Of course, the second person would make rapport-building slightly more difficult, but probably not unduly so.

The optimal short-run solution would be a hidden tape recorder. Tapes could be destroyed as soon as transcribed. However, I doubt that the short term benefits of a better research project would outweigh the long term harm of distrust between industry and academia were this practice to be found out.

7.2.8 Probe at a Second Interview for More Depth

When the problem of having such a large number of beliefs, values and assumptions to investigate was combined with the problem of having all interviews scheduled close together to minimize travel costs, I felt like I was just scratching the surface of the real story of Responsible Care and the cultures at ET and SM.

In the realm of Responsible Care, a shallow study is a dangerous one. Responsible Care explicitly promotes communication to audiences outside companies. Thus it involves much of Van Maanen's "presentational data," that is, information that has been designed for public consumption and may or may not reflect reality. In the context of Responsible Care, presentational data abounds. The culture researcher must delve sufficiently deep to get beyond the presentational data. By spreading my research attention out over so many beliefs, values and assumptions, over such a short period of time, I believe I came dangerously close to gathering little more than presentational data in my interviews.

All in all, I do believe what I was told (and what I present in this thesis), but there is one episode that nags at the back of my mind: one of my interviewees told me that he used to work in the same group as some of the people I had already interviewed, and he found the group to be *so unethical*

that he would never work with it again. I had detected no tremendous evil in my conversations with members of this group, and in fact, some of their quotes supporting the idea that Responsible Care is reflected in their company's culture appear in Chapter 6. It is possible that the group has changed, it is possible that my informant was disgruntled and not truthful, but it is also possible that my methodology did not penetrate the group's veneer of presentational data. Thus I recommend future studies of this type focus in on a narrower set of cultural beliefs, values and assumptions and investigate them more deeply.

I think the cultures of companies could be investigated significantly more deeply by introducing a second round of interviews (with the same people) into my methodology. This second round should take place after a significant cultural analysis of the first interviews has been performed. In the second interview, the interviewer would test hypotheses (such as those presented in Chapter 6) derived from interviewees' comments in their first interview. Questions could take forms such as: "You said 'Risk training for employees is good.' Is that because employees deserve risk information?" This second interview would be much more focused that the first, and the interviewer would pre-determine the dimensions to be studied much more. The interview could even include direct cultural questions, so long as they were derived from, and used language from, the interviewee's own first interview.

The interviewer could also attempt to cover ground that was somehow missed in the first interview, or probe to find out why certain subjects did not come up. Spradley and Schein both recommend approaches such as this in interviews subsequent to the first; the lesson is: more than one interview per person is required.

7.2.9 Subtle Distinctions

Several of the cultural beliefs, values and assumptions I derived from Responsible Care tended to come in clusters of similar but slightly different concepts. For example, consider: employees *deserve* risk information; employees *can understand* risk information; and managers should *tell* employees risk information. Each of these has a distinct meaning, and the

distinction could in some cases be important. One could imagine a manager who believed he *should tell* his employees information to cover his behind, but did not actually believe they *deserved* the information; one could also imagine a manager who believed her employees *deserved* the information, but believed they *should* find it themselves.

But in practice, these distinctions become very difficult to distinguish. If an interviewee says that risk training for employees is a good thing, is it because he or she thinks employees deserve the training, because he or she thinks the company should train the employees, or both? The best way for the researcher to make this determination is to ask "Why is it a good thing?" But too much such interruption disrupts the conversation and can also hurt rapport. Or, as in my case, the researcher may be too busy frantically taking notes to perceive the need to jump in. A second interview with the same person could offer the opportunity to probe so as to be able to make subtle distinctions.

7.2.10 Criterion for Cultural Presence

A final problem with my methodology is that I establish no criterion for 'cultural presence.' Say seven of ten people interviewed seem to confirm a cultural assumption. Is that assumption in the company culture? What if nine confirm it and one contradicts it? I do not feel qualified to establish any such rules; I doubt anyone could.

7.3 Is Responsible Care Reflected in the Cultures at ET and SM?

Tables 7.1 and 7.2 summarize the hypotheses of Tables 6.1 through 6.18. Table 7.1 lists the Responsible-Care-implied beliefs, values and assumptions that I hypothesize to be supported, and those that I hypothesize to be contradicted, by ET's organizational culture. Table 7.2 does likewise for SM.

Note that if a Responsible Care belief, value or assumption does not appear in one of these tables, it could be because I did not gather sufficient information to determine the status of the particular belief, value or assumption vis-à-vis

Table 7.1 Responsible Care Beliefs, Values and Assumptions at ET

SUPPORTED AT ET	SORT OF / IN PART / NOT YET / NOT FULLY	CONTRADICTED AT ET
Chemical Companies and Society		
The company is the basic autonomous unit of action. Things are controlled by each company. *All companies are subject to the same societal pressures.* Companies are distinct from the public. *Companies have a role in society to play.* *Companies have obligations to several stakeholders.* Stakeholders' views may differ from those of companies.	*Companies are part of, and should be in harmony with, their communities.*	Chemical companies have the right to exist.
The Responsible Care Initiative		
Responsible behaviour is a necessary part of doing business. *Companies should go beyond the literal requirements of the law, regulations, chemical lists, traditional definitions, even Codes of Practice.* Community awareness is desirable but not essential.	*Responsible Care is a manifestation of deeper ethics, values, beliefs, and attitudes.* *Responsible Care includes all activities, no matter how central or peripheral to the business, even those not traditionally thought of as risky, and even those proceeding on a small scale.*	

Table 7.1 Responsible Care Beliefs, Values and Assumptions at ET

SUPPORTED AT ET	SORT OF / IN PART / NOT YET / NOT FULLY	CONTRADICTED AT ET
Chemical Companies' Current Status and Capabilities		
Some companies would be inclined to behave irresponsibly were it not for Responsible Care.	Companies only have to do what's practicable.	*Companies do need help from others, especially in dealing with emergencies.*
Not all companies would or could behave responsibly without industry support.		
Past company actions may have been unacceptable. The industry must improve, and in a timely manner.		
Collectively, CCPA companies have the expertise necessary to behave responsibly.		
Generally, companies control their products, uses, processes, equipment, services and facilities, though sometimes not releases or risks.		
Companies are generally capable of doing the things demanded of them by Responsible Care.		
Companies can be trusted to make difficult judgement calls.		

Table 7.1 Responsible Care Beliefs, Values and Assumptions at ET

SUPPORTED AT ET	SORT OF / IN PART / NOT YET / NOT FULLY	CONTRADICTED AT ET
Responsible Care Management		
Senior management commitment to Responsible Care is important.		
Acceptance or adoption of Responsible Care are insufficient without implementation and performance of specific practices.		
Responsible Care must be part of planning and business processes and operations.		
Management systems are necessary, Activities should be "procedurized."		
Writing policies, standards and procedures down makes them more effective and responsible.		
Programs should be kept active and up-to-date; they should change over time.		
Responsible Care programs are not always perfect at first; sometimes they need correction.		
Companies must improve continuously.		
Companies' Effects on Others		
Companies affect others through their actions and decisions.		
Companies should think about how their actions and decisions affect others.		
Companies should try to characterize how they affect others.		
Many operations could be hazardous or risky to the public or the environment. Many are inherently hazardous or risky.		

Table 7.1 Responsible Care Beliefs, Values and Assumptions at ET

SUPPORTED AT ET	SORT OF / IN PART / NOT YET / NOT FULLY	CONTRADICTED AT ET
Hazards, Risks and Truth		
Some hazards and risks are worse than others. Risks are at least approximately quantifiable, meaningful, and worth measuring and controlling. Risk does not have to be eliminated. Some risks are acceptable.	Potential hazards and potential impacts are as important as actual hazards and impacts.	
Understanding and Managing Chemical Risks		
Effects, hazards, risks, injuries and damages should be reduced and minimized. Effects, hazards, risks can be controlled.	*Chemicals and products must be managed throughout their life cycles. Companies have some responsibility for all points in chemical life cycles.*	
Chemical Emergencies		
Emergencies can happen, and can happen anywhere. Emergencies will always happen; they cannot be totally eliminated. Companies should prepare for accidents. The number and consequences of incidents can be reduced (incidents can be prevented). Health and safety performance can be meaningfully measured.		

Table 7.1 Responsible Care Beliefs, Values and Assumptions at ET

SUPPORTED AT ET	SORT OF / IN PART / NOT YET / NOT FULLY	CONTRADICTED AT ET
Normal Chemical Operations		
Companies know the effects, hazards and risks of their operations.		
Chemical Company Employees		
Employee behaviour will not necessarily simply reflect company initiatives.		
Employees do not have to be isolated from risk.		
Employees do not know hazards, the law, or how to behave responsibly without information and training.		
Companies should inform and train employees in hazards, the law, standards and emergency response.		
Employees may not behave as trained to; they should be assessed and re-trained as necessary.		
Individuals have freedom of action at companies and can affect outcomes. They can help or hinder Responsible Care.		
All employees must be involved in Responsible Care responsibilities.		
Responsible Care is good for employee morale and pride.		

Table 7.1 Responsible Care Beliefs, Values and Assumptions at ET

SUPPORTED AT ET	SORT OF / IN PART / NOT YET / NOT FULLY	CONTRADICTED AT ET
Communities Around Facilities and the Public		
Companies want community to have confidence in them. They want to be proud of their standing with communities and other businesses.	Community interests are sufficiently homogeneous to be represented by organizations or individuals.	
Doing Responsible Care increases a company's standing with its community. If communities understand company activities, they will perceive the company more favourably.	*Companies should develop information to regularly provide unsolicited to the community.*	
Public perception and confidence is important and arises from responsible management using systems.	*Companies can and should understand community rights, concerns and needs. Citizens and interest groups are worth listening to.*	
Some community members have concerns. Some concerns are "legitimate;" others are not.	*Companies should be open with public, telling it what they are doing if it asks. Companies should prepare to answer questions.*	
Companies should cooperate, coordinate and work with communities.	*Communities have the need and right to know the hazards and risks presented to them by chemicals and transportation; and corresponding safeguards.*	
Communities and the public do not have to be isolated from risk.		
Members of communities and the general public are generally unaware and ignorant of chemicals.		

Table 7.1 Responsible Care Beliefs, Values and Assumptions at ET

SUPPORTED AT ET	SORT OF / IN PART / NOT YET / NOT FULLY	CONTRADICTED AT ET
Other Parties (e.g. Contractors, Suppliers, Distributors, Customers)		
Companies are partly responsible for ensuring that other parties behave responsibly, including policing them, within limits.	*Other parties' confidence is desirable. Responsible Care will increase companies' standings with other parties.*	
The actions of many different parties can affect safety.	*Companies would jeopardize sales for the sake of Responsible Care.*	
Other parties are generally held to a subset of Responsible Care standards.		
Other parties are still fundamentally responsible for their actions.		
Other parties may not behave as responsibly as they should.		
Companies generally know a lot more than other parties.		
Companies should carefully select the other parties they do business with.		
Companies should cooperate, coordinate, and work with other parties and nudge them into responsible behaviour.		
Companies can police the actions of other parties, but only to a certain extent.		
Companies must verify that other parties are behaving responsibly, but only to a certain extent.		
Emergency Response Agencies		
Emergency response agencies deserve more information than the public. The onus is on companies to provide such information.		
Companies should cooperate with emergency response authorities.		
Governments		

Table 7.1 Responsible Care Beliefs, Values and Assumptions at ET

SUPPORTED AT ET	SORT OF / IN PART / NOT YET / NOT FULLY	CONTRADICTED AT ET
The government plays an important role in society. Laws and regulations are not always met. *Voluntary action ("self-regulation") is preferable to regulation. It is important to demonstrate this.*	*Government decisions should recognize the views of everyone who is affected.*	*Public policies and regulation can legitimately govern chemical companies' activities. Some regulation is necessary.*

Table 7.2 Responsible Care Beliefs, Values and Assumptions at SM

SUPPORTED AT SM	SORT OF / IN PART / NOT YET / NOT FULLY	CONTRADICTED AT SM
Chemical Companies and Society		
The company is the basic autonomous unit of action. Things are controlled by each company. *All companies are subject to the same societal pressures.* Companies are distinct from the public. *Companies have a role in society to play.*	*Companies should all approach the management of chemicals similarly, and take similar positions on issues.*	Chemical companies have the right to exist.
The Responsible Care Initiative		
Responsible behaviour is a necessary part of doing business. *Companies should go beyond the literal requirements of the law, regulations, chemical lists, traditional definitions, even Codes of Practice.* Community awareness is desirable but not essential.	*Responsible Care is a manifestation of deeper ethics, values, beliefs, and attitudes.* *Responsible Care includes all activities, no matter how central or peripheral to the business, even those not traditionally thought of as risky, and even those proceeding on a small scale.*	*Responsible Care has clear intent, expectations, and meaning.*
Chemical Companies' Current Status and Capabilities		
Some companies would be inclined to behave irresponsibly were it not for Responsible Care. Not all companies would or could behave responsibly without industry support. *Companies' performance is not yet up to the standards of Responsible Care.* *Past company actions may have been unacceptable.* *The industry must improve.* Companies are generally capable of doing the things demanded of them by Responsible Care. Companies can be trusted to make difficult judgement calls.	Companies only have to do what's practicable.	

Table 7.2 Responsible Care Beliefs, Values and Assumptions at SM

SUPPORTED AT SM	SORT OF / IN PART / NOT YET / NOT FULLY	CONTRADICTED AT SM
Responsible Care Management		
Senior management commitment to Responsible Care is important. *Acceptance or adoption of Responsible Care are insufficient without implementation and performance of specific practices.* *Responsible Care must be part of planning and business processes and operations.* *Programs should be kept active and up-to-date; they should change over time.* *Responsible Care programs are not always perfect at first; sometimes they need correction.* *Companies must improve continuously.*		
Companies' Effects on Others		
Many operations could be hazardous or risky to the public or the environment. Many are inherently hazardous or risky.		
Hazards, Risks and Truth		
Some hazards and risks are worse than others.		
Understanding and Managing Chemical Risks		
	Chemicals and products must be managed throughout their life cycles. Companies have some responsibility for all points in chemical life cycles.	

Table 7.2 Responsible Care Beliefs, Values and Assumptions at SM

SUPPORTED AT SM	SORT OF / IN PART / NOT YET / NOT FULLY	CONTRADICTED AT SM
Chemical Emergencies		
Emergencies can happen, and can happen anywhere.		
Chemicals are especially important in emergency situations.		
The number and consequences of incidents can be reduced (incidents can be prevented).		
Chemical Company Employees		
Employee behaviour will not necessarily simply reflect company initiatives.		
Employees do not know hazards, the law, or how to behave responsibly without information and training.		
Companies should inform and train employees in hazards, the law, standards and emergency response.		
Employees may not behave as trained to; they should be assessed and re-trained as necessary.		
Individuals have freedom of action at companies and can affect outcomes. They can help or hinder Responsible Care.		
All employees must be involved in Responsible Care responsibilities.		
Individual efforts deserve support and recognition.		
Responsible Care is good for employee morale and pride.		
Employees can affect community perceptions. Companies should encourage them to speak out.		

Table 7.2 Responsible Care Beliefs, Values and Assumptions at SM

SUPPORTED AT SM	SORT OF / IN PART / NOT YET / NOT FULLY	CONTRADICTED AT SM
Communities Around Facilities and the Public		
Companies want community to have confidence in them. They want to be proud of their standing with communities and other businesses. *Doing Responsible Care increases a company's standing with its community. If communities understand company activities, they will perceive the company more favourably.* *Public perception and confidence is important and arises from responsible management using systems.* Communities and the public do not have to be isolated from risk. Members of communities and the general public are generally unaware and ignorant of chemicals. *Communities want to understand and be proud of companies.*	*Companies should develop information to regularly provide unsolicited to the community.* *Companies should be open with public, telling it what they are doing if it asks. Companies should prepare to answer questions.* *Communities have the need and right to know the hazards and risks presented to them by chemicals and transportation; and corresponding safeguards.*	
Other Parties (e.g. Contractors, Suppliers, Distributors, Customers)		
Other parties may not behave as responsibly as they should. Companies generally know a lot more than other parties. *Companies should carefully select the other parties they do business with.*	*Other parties' confidence is desirable. Responsible Care will increase companies' standings with other parties.* Other parties are still fundamentally responsible for their actions. *Companies would jeopardize sales for the sake of Responsible Care.*	
Governments		
The government plays an important role in society. *Voluntary action ("self-regulation") is preferable to regulation. It is important to demonstrate this.*		*Public policies and regulation can legitimately govern chemical companies' activities. Some regulation is necessary.*

the company's culture; or it could be because the company's culture neither supports nor contradicts it. Because I spent more time at ET and interviewed more people, I was able to generate more hypotheses regarding ET's culture than regarding SM's culture. Comparison between the two companies is meaningless except in the cases of beliefs, values and assumptions for which I was able to generate hypotheses at both companies. As explained in section 6.2, the italics in Tables 7.1 and 7.2 reflect my unsupported distinction between beliefs, values and assumptions that are probably new to the industry, versus those that were probably already present.

The first thing that can be said about Tables 7.1 and 7.2 is that far more Responsible Care beliefs, values and assumptions were supported at ET and SM than were partially-supported or contradicted. In fact, only three were contradicted at each of the two companies. It is safe to conclude that the organizational cultures at ET and SM do not contradict much of Responsible Care.

Based on the hypotheses listed in Tables 7.1 and 7.2, I draw the following preliminary conclusions about the organizational cultures at ET and SM.

Chemical Companies and Society

The cultures at both companies reject the assumption that the companies have a right to exist. Furthermore, both company cultures acknowledge that they are part of a larger society, which can impose regulation upon them. ET's culture acknowledges obligations to several different stakeholders, some of whom may hold views quite different from the company's. Some people at ET are beginning to believe that the company should seek harmony with its stakeholders, especially the communities in which it operates, though this feeling has yet to take root in ET's culture.

The Responsible Care Initiative

Both companies' cultures accept Responsible Care as a necessary strategy to avoid regulation. Both believe in moving beyond the traditional boundaries and definitions provided in laws, regulations, traditional practices, and even

Responsible Care Codes of Practices. At both companies, people assume that Responsible Care thinking applies to a much broader range of company activities than they ever assumed before, but there are still some activities they think of as irrelevant to Responsible Care.

The culture at SM rejects the idea that Responsible Care has a clear intent or meaning, though some see its vagueness as an advantage. At both companies there is some evidence that Responsible Care reflects people's deeper values about what is "right," however, right or wrong, Responsible Care also serves some hard-headed self-interested purposes.

Chemical Companies' Current Status and Capabilities

Both companies' cultures admit that at least some companies would be inclined to behave irresponsibly without Responsible Care, that past actions may have been unacceptable, and that the industry's behaviour must improve. But they see themselves as possessing the capabilities and judgement necessary for improvements. In fact, ET rejects the idea of needing help from anyone. At both companies, some people are moving away from assuming they can only do the "practicable," and are beginning to take more risks. This makes others uneasy.

Responsible Care Management

The cultures of both companies accept many of Responsible Care's management prescriptions. Of course, several of these are not exclusive to Responsible Care. People believe that senior management commitment Responsible Care is critical, that it must be accounted for in planning and business processes, that specific practices are necessary to back up Responsible Care ideals, and that programs may need correction and revision and so should be kept active and up to date. They also believe that companies' Responsible Care performance should improve continuously. ET's culture includes Responsible Care's call to "procedurize" everything in written policies, standards, procedures and management systems.

Companies' Effects on Others

The culture at both companies accepts that company operations are hazardous and risky. People at ET also feel that they should think about, and attempt to characterize, the ways in which their company affects others.

Hazards, Risks and Truth

Both companies' cultures believe that different risks can be compared. At ET, the belief is that risks can be quantified and - though they need not be eliminated - they are worth measuring and controlling.

Understanding and Managing Chemical Risks

Both ET's culture and SM's culture partially accept responsibility for company chemicals or products at points in their life cycles where the company would not be legally responsible. But this type of thinking has not fully taken root in either company's culture. ET's culture affirms that risks can be controlled and should be reduced.

Chemical Emergencies

Both companies' cultures suggest that chemical emergencies could happen to their companies, but also believe that the number and consequences of incidents can be reduced through prevention efforts. At ET, people also believe that a certain number of emergencies are inevitable, and thus that the company should prepare to deal with them.

Chemical Company Employees

According to the cultures at both ET and SM, employees would not know how to behave responsibly without information and training, and therefore the companies should provide such training. People also believe that their company should assess employees to determine if training has been successful.

Both cultures also assume that individuals may not necessarily reflect company initiatives, but can instead choose their actions. They can help or hinder Responsible Care. For this reason, both cultures believe all employees must be involved in Responsible Care.

People at both companies believe that Responsible Care is good for employee morale and pride.

Communities and the Public

Several Responsible Care beliefs, values and assumptions concerning communities and the public are present in the ET and SM cultures, while several others are only beginning to penetrate them. People at both companies assume that companies want the confidence of communities and the public, and that Responsible Care practices will increase companies' standing with communities. They also believe that members of communities and the public are generally ignorant of chemicals and their business.

The cultures at both companies are beginning to reflect the idea that communities have the need and right to know hazards and risks presented to them by company activities, and therefore that companies should not only openly answer public questions, but also seek out the community to provide it information unsolicited. These beliefs do not come naturally, however, and they have not yet taken hold in the companies' cultures.

People at SM assume that community members want to understand their company. ET's culture assumes that some members of the public have concerns, and that believes that ET should cooperate and work with communities. The belief that ET can and should understand community concerns and needs is beginning to infiltrate the ET culture.

Other Parties (e.g. Contractors, Suppliers, Distributors, Customers)

People at both companies are culturally predisposed to assume that they generally know a lot more about managing chemicals and risks than the

other parties they do business with, and that therefore they should select these other parties carefully.

At both companies there is division over whether doing Responsible Care will increase company standing with other parties. Both company cultures are moving towards the idea of jeopardizing sales for the sake of practicing Responsible Care, and both have experienced cultural backlash against this.

Interestingly, at SM, some even challenge the traditional cultural assumption that other parties are responsible for their own behaviour: they approve of SM assuming new responsibilities.

ET's culture holds that other parties can affect safety, and therefore should be held to a subset of Responsible Care standards. And though it assumes these parties are fundamentally responsible for their actions, it believes that ET shares some responsibility for ensuring responsible behaviour from these parties. Thus people at ET believe in verifying, cooperating with, nudging, and if necessary, suspending business with other parties to ensure responsible behaviour.

Emergency Response Agencies

The culture at ET assumes that emergency response agencies should be cooperated with and deserve more information about company activities than the public does.

Governments

At both companies, people acknowledge that the government plays an important role in society, but their culture rejects outright any suggestion that regulation is desirable. Regulation is seen as undesirable. Voluntary industry initiatives are seen as preferable to government regulation.

At ET, people believe that government decisions should recognize the views of the industry.

One interviewee told me that

> "All the good stuff is thoroughly inculcated,"

while another told me that

> "The last 3,000 years of history have not been washed away in ten years."

(these quotes are deliberately unreferenced)

I conclude that large parts of the Responsible Care culture are reflected in the organizational cultures of both ET and SM. Some of the less-traditional components of Responsible Care culture are beginning to become part of the organizational cultures at ET and SM, but have not taken root yet. Only Responsible Care's respect for regulation seems strongly at odds with the organizational cultures of both companies.

7.4 Creative Leaps

> "The second step in induction is the *creative leap*. Selye cites a list of 'intellectual immoralities' published by a well-known physiology department. Number 4 reads 'Generalizing beyond one's data.' He quotes approvingly a commentator who asked whether it would not have been more correct to word Number 4: 'Not generalizing beyond one's data.' The fact is that there would be no interesting hypothesis to test if no one ever generalized beyond his or her data. Every theory requires that creative leap, however small, that breaking away from the expected to describe something new." (Mintzberg, 1983, p. 109)

The purpose of this thesis was to develop and test a methodology to use in investigating if Responsible Care is reflected in the organizational cultures of chemical companies. It is hoped that this methodology may prove useful in working towards answers to larger questions, such as: Is Responsible Care changing the chemical industry? Is Responsible Care working? Is

Responsible Care better than regulation? There is nothing in this thesis that can even pretend to answer these questions, but I cannot resist. Permit me to generalize beyond my data:

* * *

Responsible Care is explicitly cultural. Its authors and champions describe it not as a set of practices or requirements, but as "an ethic, an attitude, a way of thinking..." They often talk about "doing the right thing." And yet just what exactly the "right thing" is is hardly explicit. SM President Woods told me (and others confirmed) that when executives first signed onto Responsible Care, they really had no idea what it meant. But, he said, "Now they know what it means." Do they? I am not so sure.

I spoke to twenty-one different people at the three companies I visited, and although I did not keep track, I suspect I heard at least ten different explanations of Responsible Care. Responsible Care is a program to avoid accidents and the extra costs they entail; Responsible Care is a system to gain better control of employees so that they do not make disastrous mistakes; Responsible Care is a credo that gets the company playing an active role in the community; Responsible Care is a CCPA initiative that allows smaller companies to establish leadership roles and gain recognition within the industry; Responsible Care is a calculated strategy to avoid regulation that would trample the industry; Responsible Care is a new image around which companies sell themselves and their products; Responsible Care is a culture for "doing the right thing" - **Responsible Care is all things to all people.**

And do not think that the text of the initiative offers clarification. It covers everything. It took me three weeks to boil its thirty-seven pages down to some 185 cultural beliefs, values and assumptions. And some of these 185 beliefs, values and assumptions seem to contradict one another. Consider ET's decision to take on more in-plant risk at Edmonton because the community was more comfortable with hydrochloric acid than chlorine. Addressing stakeholder concerns, yes. Minimizing risks? Protecting employees? *Well...*

Things that are all things to all people are usually dismissed as fluff: nice idea, no real results. How could anyone actually know what they are expected to do? But Responsible Care is producing results. Emissions *are* lower; safety accidents *are* less frequent; company employees *are* visiting their communities; governments *are* impressed. Why is Responsible Care working?

* * *

Free trade was coming, public opinion was horrible and the threat of new regulation was rearing its ugly head. Senior management in the chemical industry saw nothing but doom in the crystal ball and decided it needed to turn public opinion around to forestall onerous regulation. It was either astute enough or broke enough to shun advertising and seek some way of attacking the root of the problem.

> *"Look. The root of the problem is that the public doesn't understand. They never hear the word 'chemical' without hearing the word 'toxic' first. They hear that we've had a spill and they get these knee-jerk reactions. Never mind that it's the same stuff that's in their shampoo. Next thing we know we've got regulation."*

> *"No, the root of the problem is that we keep having spills. We need to stop having spills. If we improve our performance, the public will respect us."*

Improve performance, demonstrate the new ways to the public, and it would no longer clamour for regulation. But how to improve performance?

Somebody, somewhere, fell upon the idea of **management systems**:

> *"Procedurize everything. Almost like writing our own regs. But let each company write its own regs."*

It must have seemed very comprehensive and very nonspecific. All that had to be done was to create a whole bunch of management systems. Granted,

that wouldn't be that easy, but presumably it wouldn't affect business too much.

Responsible Care requires the establishment of some fairly specific management systems. It does not say what should be in those management systems, but it is quite specific about what topics they must address, and what they must accomplish. Consider: seventy different chemical companies are each told to come up with a written procedure to provide their customers 'that information which they believe to be vital to the health and safety of end-users' of their products.

On the surface of it, this seems quite benign. There are no stipulations as to what the procedure has to prescribe. What executive would object? But something funny happens when you give people the power to create their own management systems. They start thinking about "doing the right thing;" or at least some of them do, not because they think it increases shareholder value, but because their eight-year-olds have been asking them about chemicals. And so some pretty rigorous management systems get written - not everywhere, but at one or two companies.

Now, in addition to management systems, somebody else, somewhere else, also fell upon the idea of **Responsible Care executive seminars**.

Consider what happens when several months later, several executives from different companies meet at a CCPA meeting to compare notes on how their Responsible Care implementation is proceeding. One executive describes his company's mediocre procedure. Another, whose responsible underling has a curious eight-year-old, describes a much more rigorous procedure. The end-user-safety-information procedure begins to become a source of executive pride. A third executive - whose company hasn't really taken this all that seriously - begs off until the next meeting, returns home and the next morning demands a more rigorous procedure from his underlings, whether they have eight-year-olds or not.

And thus the standards for the seemingly benign end-user-safety-information procedure rise.

Now, a third somebody, somewhere else again, fell upon the idea of **compliance verification**. Every CCPA company will at some point have a verification team, consisting of enthusiastic individuals from other chemical companies, come through and verify its management systems. They will then write a report, which the company is supposed to share with the public, on the company's management systems. The question is, will they think that the company is "doing the right thing?" Remember, Responsible Care is all things to all people...

Through wisdom or through luck, the founders of Responsible Care created something that would snowball.

Note that the continuous improvement mechanism that I suggest is at work within the Canadian chemical industry could only continue to work so long as there were people within the industry who sought to increase standards of behaviour (people with eight-year-olds, if you will).

***

But Responsible Care management systems are more than just betting chips in an industry-wide game of one-upmanship. They are also practiced. At first they are merely cultural artifacts. Observable and concrete, they could be gone tomorrow as fast as they appeared yesterday. But as they are used more and more, and as they are perceived to work for the company (i.e. to solve problems), their implicit beliefs, values and assumptions may slowly become ingrained in the company culture. It matters little if a community awareness program was originally written to stave off regulation, if it implies that community concerns are worth responding to, then that is the belief that will ingrain itself in the culture. Motivation may not affect eventual culture.

***

The organizational cultures of chemical companies are changing. New beliefs, values and assumptions are externally "suggested" by Responsible Care. Responsible Care standards are not static, but are changing with time. The wants and needs of governments and society in general are changing.

The organizational cultures of chemical companies are also fragmented. The external forces of change interface with specific individuals within companies. Different individuals within chemical companies are exposed to different beliefs, values and assumptions. Some individuals have never heard of Responsible Care. Others participated in the drafting of the Codes.

Students of organizational culture could find no better research grounds than the chemical companies of Canada.

Appendix A

Table A1: Sentence-by-Sentence Analysis of the Responsible Care® Text for Cultural Beliefs, Values and Assumptions

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
INTRODUCTION	
The CCPA's Responsible Care initiatives result from our members' desire to be, and be seen as, a responsible industry within Canadian society.	Our image in society matters. We don't want to hurt society. We are a part of Canadian society.
The member companies of The Canadian Chemical Producers' Association are formally committed, as a condition of membership, to the "Statement of Responsible Care and Guiding Principles" which brings with it specific moral obligations regarding the responsible management of chemicals and chemical products.	Our business involves moral issues. Our chemicals and products require management.
The Responsible Care initiatives are designed to reduce the public's perception that it has been unwillingly put at risk by the industry, and ensure that the industry shows it can voluntarily put measures into place for the effective management of chemicals, chemical products and processes.	The public's perception matters. Us & them: we are not part of "the public." Companies should behave as an industry. It's important that we do this on a voluntary basis. Our chemicals, products and processes require management.
The theme "Responsible Care: A Total Commitment" signifies commitment to the responsible management of the total life cycle of our products; from the very beginning in the laboratory, to the very end at ultimate disposal or destruction.	Our products have finite lives. Our products tend to start in the lab. Our products need to be managed. Our products need to be managed throughout their life cycles. We have some responsibility for the effects of our products at points in their life cycles where we do not own them.
It signifies the commitment of our full membership without exception and implies a broad commitment by our employees.	We should do all this. Our employees are not quite the same as us - they do not have exactly the same commitments either.
The codes apply to Canadian member company operations inside and outside Canada.	We sometimes treat issues inside and outside Canada differently, but not in this case. What we do outside Canada matters.
Member companies are also expected to work with customers, transporters, distributors and other parties in the application of these codes to their operations.	We do Responsible Care to meet expectations of some sort. Customers, transporters, distributors and others are equals to be worked *with*. Customers, transporters, distributors and others need improvement.
Every activity developed by the association for its membership is within the aims of the guiding principles.	The CCPA is making us do Responsible Care, but we let it.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
This document details the various initiatives of the CCPA to help each member company fulfill its formal commitment towards Responsible Care.	We need help from CCPA in doing this We spoke first, now we have to fulfill our pledges.
STATEMENT OF POLICY ON RESPONSIBLE CARE	
PREAMBLE.	
Canadian chemical producers encourage the responsible development, introduction, manufacture, transportation, storage, handling, distribution, use and ultimate disposal of chemicals and chemical products so as to minimize adverse effects on human health and well-being and on the environment i.e.: Canadian chemical producers encourage "Responsible Care".	We "encourage," we don't actually control: development, introduction, manufacture, transport, storage, handling, distribution, use and ultimate disposal. Chemicals and chemical products have linear lives. Chemicals and chemical products adversely affect human health & well being and the environment. We should try to minimize effects on human health & well being and the environment. Effects on human health & well being are knowable. Effects on the environment are knowable.
STATEMENT OF COMMITMENT	
The Canadian chemical industry is committed to taking every practical precaution towards ensuring that its products do not present an unacceptable level of risk to its employees, customers, the public or the environment.	Employees, customers, public and the environment matter. Employees, customers, public and the environment do not have to be isolated from risk. Our products present risks to employees, customers, the public and the environment. It is our responsibility to try to ensure these risks are acceptable (to whom?). We only have to do what's practical. We take precautions; we don't cleanup.
The most senior executive responsible for chemical operations in each member company of The Canadian Chemical Producers' Association has formally accepted these principles and endorsement of the principles and codes of practice is a condition of membership.	Senior management matters. Not everyone would do this on their own.
STRATEGY	

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
The chemical industry recognizes that a degree of government regulation in combination with the self-initiated actions of industry is required to ensure a sufficiently comprehensive, timely and orderly advance toward the goal of protecting the health and well-being of Canadians and their environment.	We are not now protecting the health and well-being of Canadians and their environment. It is our goal to protect health and well-being of Canadians and the environment. The advance towards the goal should be timely. We need some pushes from government. We might miss things without government. Order is good. The advance towards the goal should be orderly.
It supports the development of equitable and attainable standards.	Standards must be fair and realistic.
Within this framework, industry believes that the best way to achieve this goal is to:	Companies should all agree/speak with one voice. Companies all have the same political opinions.
a) ensure that guidelines and regulations established by government with respect to the potential hazards of chemicals are based on scientifically supported data and/or expert opinion;	Truth is established by science and experts. Regulations should follow truth. Expert's opinions are more important. Regulations have in the past not always been based on truth.
b) ensure that guidelines and regulations are realistic in terms of societal cost/ benefit considerations; and	Cost/benefit is a valid consideration for regulations. Some things are unrealistic i.e. unachievable. We cannot dominate our environment - there are some things we can't do.
c) ensure that the justified confidentiality of information, particularly that affecting the competitiveness of companies, is appropriately preserved.	Information can be legitimately owned. Not all such claims are justified - there are limits to property rights. Companies' competitiveness is very important.
Canadian chemical producers are committed to develop and implement plans, programs and communications within industry and in conjunction with governments, regulatory agencies, other resource groups and affected parties to promote the principle of "Responsible Care".	We will/should work with governments and others Governments and others are worthy of working with. We need to do work to get to "Responsible Care" - it is not being done (fully) now.
GUIDING PRINCIPLES	
Each member company of The Canadian Chemical Producers' Association has subscribed to the following guiding principles:	Companies are the basic unit of action.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
• ensure that its operations do not present an unacceptable level of risk to employees, customers, the public or the environment	Employees, customers, the public and the environment matter. We have to consider employees, customers, the public and the environment. We must not pose unacceptable risks to employees, customers, the public or the environment. Some risks are acceptable. Some are not.
• provide relevant information on the hazards of chemicals to its customers, urging them to use and dispose of products in a safe manner, and make such information available to the public on request	The public deserves information on chemical hazards. Chemicals are hazardous. Customers deserve information on hazards. Customers might not be safe. We can't force customers to be safe. Some information is not relevant. We should be open with the public. The onus is on the public to ask for information; it is not on us to provide it unsolicited. Safe use and disposal of chemicals is fundamentally the customers' responsibility, although we will try to influence them.
• make Responsible Care an early and integral part of the planning process leading to new products, processes or plants	Responsible Care should become part of our process. Responsible Care has not been part of our process up until now.
• increase the emphasis on the understanding of existing products and their uses and ensure that a high level of understanding of new products and their potential hazards is achieved prior to and throughout commercial development	New products have potential hazards. Potential hazards should be understood early. We develop new products. We should understand our products and their uses. We should understand our products and their uses more than we used to. Complete understanding is either not possible or not desirable. Understanding is something you have to work at. Potential hazards can change during development.
• comply with all legal requirements which affect its operations and products	The law is important. The law affects us. We submit to the law.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
• be responsive and sensitive to legitimate community concerns	Some concerns are legitimate. Some are not. The community has concerns. Community concerns matter. We should try to understand community concerns. We should react to community concerns. We are voluntarily not dominating our environment.
• work actively with and assist governments and selected organizations to foster and encourage equitable and attainable standards.	Work *with* governments. Reasonable standards are desirable. Life is cooperative. Governments need help to make fair and realistic standards. Standards must be achievable. We have a right to exist.
PUBLIC POLICY DEVELOPMENT	
As expressed in the Statement of Policy on Responsible Care we recognize that achievement of the responsible management of chemicals must include a combination of self-initiated actions and a degree of government regulation.	We do not manage chemicals responsibly yet. To manage chemicals responsibly, some government regulation is necessary. We have to work to get to where we manage chemicals responsibly.
It is the belief of this association that such regulation should be the result of consultation which recognizes the views of all affected stakeholders.	Everyone who is affected deserves a say in the development of regulation. There are stakeholders other than us. All stakeholders' views have at least some legitimacy. We feel our views can compete with other views. Others' views may be different than ours. Government decisions should recognize the views of different groups. Political opinion is fragmented in society.
To this end, the association has participated in a variety of consultative efforts in conjunction with government, labour, private interest groups and other business sectors.	Labour, interest groups, other business sectors are affected stakeholders. Our association represents us. We've been playing the consultation game. Our environment likes to consult.
It strongly supports the continuation of this process at all levels of government and will continue to promote these views.	We push consultation; others are less enthusiastic

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
Many of the initiatives undertaken by the association in response to public concerns are actions which the public expects the industry to take.	We have done good things before. The public expects things of us. We give the public what they want. The public is a stakeholder.
The association will work with government to develop voluntary actions which will accomplish desired objectives without regulation.	Voluntary action is preferable to regulation. The government has/deserves a say in our voluntary actions We can do what the public wants without regulation.
RESPONSIBLE MANAGEMENT OF CHEMICALS	
The Responsible Care codes of practice have been developed by specialized task forces comprised of representatives of member companies who are experts in the area governed by the concerned code.	Collectively at least, CCPA companies have the expertise necessary to determine what action is necessary.
The codes span the complete life cycle of chemicals from original development through to use and ultimate disposal or destruction.	The entire life cycle of chemicals is worthy of attention.
The task forces have consulted widely inside and outside the association in order to ensure consistency in achieving the goals of the guiding principles.	We should all do this consistently. There are external experts whose opinions we trust. Not everyone must be consulted: widely is enough. The guiding principles' goals have not yet been achieved.
OBJECTIVES	
• A consistent approach throughout the CCPA membership in the responsible management of chemicals based on the Responsible Care codes of practice.	All CCPA members should approach the management of chemicals similarly. Diverse approaches would be bad. Non-members don't matter. Other members might not otherwise behave the same as us. This would be bad. No mention of consistent performance.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
• CCPA confidence that it can speak externally regarding the responsible nature of its membership.	The CCPA is not sure that all its members are responsible. The CCPA should be confident of this. CCPA represents members externally. CCPA should represent members externally. CCPA is a stakeholder. CCPA does not speak externally about individual members. It speaks about them as a group. Present behaviour is important. Past is not mentioned.
PROGRAM ELEMENTS	
Each of the codes of practice consists of the following elements:	
• a code statement which defines what is expected of a member company	Member companies have obligations to the CCPA. Non-members don't. All member companies are subject to the same expectations.
• criteria by which the company can evaluate progress and results including identification of the areas, frequency and the means by which progress reports can be made to the association	Companies must improve. Companies must report their progress to the CCPA. CCPA determines what to report on & how often. Companies should check up on themselves. No one else will directly check up on companies. 'Frequency' implies ongoing progress reports.
• implementation assistance which includes seminars, printed materials and references on external resources	CCPA helps companies. The CCPA should help companies to meet its expectations. Some resources external to the company (maybe to CCPA) may be necessary to accomplish implementation. Some companies don't know how to do Responsible Care.
COMMUNITY RIGHT TO KNOW POLICY	

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
The Canadian Chemical Producers' Association recognizes the need and right of the public to know the risks associated with the operations and products present in or transported through communities.	The public has a right to know the risks companies' products present it. Operations are risky. Products are risky. Transportation is risky. The public needs to know risks we present. The public has a right to know about communities (not other areas? e.g. uninhabited areas?) No definition of the public. Risks, not hazards. Information for the public should be digested first?
This is explicitly expressed in the CCPA's guiding principles of Responsible Care.	
Member companies will:	
• ensure that operations do not present an unacceptable level of risk to employees, customers, public or the environment	*See Guiding Principles.*
• provide relevant information on the hazards of chemicals to customers, urging them to use and dispose of products in a safe manner, and make such information available to the public on request	*See Guiding Principles.*
• be responsive and sensitive to legitimate community concerns	*See Guiding Principles.*
PRINCIPLES OF A COMMUNITY RIGHT-TO-KNOW POLICY	
1. The community is entitled to the same type of health and safety information as an employee.	The community should be treated the same as an employee. We care for the community as much as for our employees. The community is a stakeholder. Our employees are stakeholders. The community and our employees want to know health & safety information. The community would not know health & safety information if we didn't tell it.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
2. Provision of information to the public must recognize the need to protect legitimate trade secrets.	We control information. It is ours to give. We have trade secrets. Some are "legitimate." Some are not. We can't always tell the public everything. Our competitiveness is more important than telling the public everything. We have to protect our trade secrets. The release of certain information would hurt us.
3. Accurate hazard information shall always be provided regardless of trade secrets.	Information can be accurate. Information about hazards is different than other information. For hazard information, telling the public is more important than our competitiveness. People will not use this information to significantly hurt us, or, if they do, we don't mind.
4. Citizens around CCPA member company fixed facilities have a right to know the health, safety and environmental risks associated with the manufacture, distribution, transportation of products, and the corresponding safeguards.	Citizens around facilities are entitled to more than other citizens. Manufacturing is risky. Distribution is risky. Transportation is risky. Safeguards should be taken to counter specific risks. Citizens deserve to know risks. Citizens deserve to know safeguards.
5. Communities along major transportation routes have a right of access to member companies' information on the risks associated with the products and the volume ranges of goods transported, and the accompanying safeguards.	Communities along transportation routes are entitled to more information than others. These communities have the right to access to what we know about risks. These communities have the right to access the volumes we transport through them. These communities have the right to access to the safeguards we take. The onus is on these communities to ask for the information; we don't have to provide it otherwise. These communities can't necessarily share the information. It is our information. (Community not defined.) It is humans that matter; no one has access to this information for uninhabited areas.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
6. Member companies will communicate to emergency response agencies the nature, volume and location of materials on the premises.	What we have on our premises is private information, except for emergency response agencies. Emergency response agencies deserve more information than the public or communities. The onus is on us to tell emergency response agencies this information. "Materials" (and their nature, volume and location) can be important in emergency situations. Companies are not dominant players in the cases of emergencies. Other agencies are important. We have a responsibility to help emergency response agencies.
SUMMARY OF THE CODES OF PRACTICE	
All codes have as their underlying theme the protection of people and the environment through the responsible management of chemicals, chemical products, processes and operations.	We should protect people from chemicals, products, processes and operations. We should protect the environment from chemicals, products, processes and operations. Chemicals, products, processes and operations need to be managed. It is possible to manage chemicals, products, processes and operations so that people and the environment are protected. We can do it.
Like the guiding principles, they reflect an ethic, an attitude, a method of thinking about the way in which member companies do business and their role in society.	All Codes & guiding principles are manifestations of a deeper set of beliefs, an attitude, a system of thinking. The *way* we do business is important (not just results). Companies should think about their role in society. Companies are a part of society, not separate. Companies have a role in society to play.
COMMUNITY AWARENESS & EMERGENCY RESPONSE CODE OF PRACTICE (CAER) **RESEARCH AND DEVELOPMENT CODE OF PRACTICE** **MANUFACTURING**	*These sections are just summaries of the Codes.* *See the Codes themselves.*

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
CODE OF PRACTICE **TRANSPORTATION CODE OF PRACTICE**	
TRANSCAER	
This is a program supporting the transportation code of practice.	
It is aimed at reducing the number of transportation incidents and their impact.	Some transportation incidents will always happen. Transportation incidents will always have some impact. The number of incidents can be reduced. Their impact can be reduced.
A key element of the program is the Transportation Emergency Assistance Program (TEAP) which is a co-operative national effort under which skilled personnel from one of a number of regional centres can respond within hours to a chemical transportation emergency anywhere in Canada.	Reaction to transportation emergencies is important. Help from others is needed in transportation emergencies. Incidents anywhere in Canada are important. Incidents elsewhere are less important? We can't help for incidents elsewhere?
TRANSCAER also recognizes the public's right to have information regarding the movement of chemicals and chemical products through their communities in a manner that is consistent with the association's "Community Right-to-know" policy.	The public has a right to know about communities (not other areas e.g. uninhabited areas) The public has the right to information about our transportation activities.
DISTRIBUTION CODE OF PRACTICE **HAZARDOUS WASTE MANAGEMENT CODE OF PRACTICE** **DELBRIDGE PANEL**	
This is a community advisory panel comprising a cross-section of interest groups and concerned citizens with interests in health, ethics and the environment.	A diversity of opinions is useful. Citizens are worth listening to. Interest groups are worth listening to.
The panel meets regularly throughout the year to discuss and evaluate matters on which the CCPA seeks comment and advice, and which the panel identifies as requiring a response from the industry.	Outside evaluation of CCPA actions is useful. Sometimes the industry must respond to an issue. Outside demands for responses are important.
The panel extensively reviewed the codes of practice before their formal presentation to the membership.	Outside evaluation is useful. Consultation regarding works in progress is useful.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
It is expected to review future CCPA activities and identify emerging areas of concern before they become major public issues.	We try to anticipate outside reaction to our activities. We try to get on top of issues before they become big issues in the public's eye. New areas of concern arise over time. It's bad for us to be unaware of major public issues. Major public issues grow out of emerging areas of concern. It would be good if we could anticipate the future.
CHEMICAL REFERRAL CENTRE	
This centre, operated by the CCPA, is a non-emergency system designed to help the public gain access to information on chemicals.	We should help the public gain information about chemicals. The public may be ignorant about chemicals. The public may need help getting information.
By calling a toll-free telephone number, callers can find the name or names of manufacturers of chemical products, and the telephone number and name of an individual from whom information can be obtained.	Companies are the final disseminators of information regarding chemical products. We only provide this service for chemical products; processes or wastes are different. We don't have to provide this kind of service for processes or wastes. People should be given the name of the person to talk to. We are not ashamed to give out our employees names. They take responsibility for the information they provide. Insignificant numbers of people will abuse this service.
The service operates Monday to Friday, 8:00 am to 7:00 pm (EST).	We don't have to provide this service all the time.
The telephone number is:	
1 -800-267-6666	People should not have to pay for this service.
PREAMBLE	
OBJECTIVE	
The codes of practice were developed to address and give substance to the guiding principles contained in the "Statement of Policy on Responsible Care" and the commitment made to Responsible Care and its guiding principles by the chief executive officer or senior chemical executive of each member company.	The Statement of Policy is not substantive enough. The commitment of senior management requires substance. 'Substance' is good. 'Substance' is defined as practices taken.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
The adoption and implementation of these codes by each member company reflects a renewed commitment to Responsible Care and its guiding principles by the chief executive officer or senior chemical executive.	Implementing is different than adoption. Senior management has reaffirmed its commitment (had it waned?). Senior management commitment is important. A company's actions are a test of the senior manager's commitment. Senior managers control their companies.
The code conformance process, including auditing and evaluation of policies, standards and procedures within an agreed milestone timetable, involves a further commitment.	Conformance is not part of the first commitment; a new commitment will be required. Auditing is necessary to ensure conformance. The time at which action is taken is important (timetables are required). Responsible Care implementation can be discretized into milestones.
IMPLICATIONS	
The successful adoption and implementation of these codes of practice have a number of implications for member companies, their employees, and those with whom they have business relationships.	Adoption and implementation can be successful or not. If the company has been affected, then adoption and implementation of these codes has been successful. If employees are affected, then adoption and implementation has been successful. If other businesses (in relationships) are affected, then adoption and implementation has been successful. What we do affects our employees. What we do affects those with whom we have business relationships.
The codes, like the guiding principles, reflect an ethic, an attitude, a method of thinking about the way in which member companies do business and their role in society.	*Exact repetition of text used in "Summary of the Codes of Practice."*

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
In particular, they address the reality that corporate values must emphasize a long term commitment to community and occupational health and safety and to environmental protection.	Our values have to have long term commitment to community. Our values have to have long term commitment to occupational health and safety. Our values have to have long term commitment to environmental protection. We have to think about the long term. Community will be around for the long term. We will be around for the long term. Environmental protection will be an issue for the long term. Occupational safety will be an issue for the long term. The values that matter are corporate values (maybe because all employees reflect corporate values?). We have to make our long term commitments known.
Indeed, the codes do not contain static requirements which, once met, never change.	Static requirements are bad. What's good enough today will not be good enough in the future. Change is necessary. The future will be different than today.
Rather, they necessitate continuous performance improvement in an environment of changing knowledge and regulation.	The codes require constant improvement. Knowledge is always changing. Knowledge comes from external sources. Regulation is always changing. Regulation is beyond our control, or, it would always change if we controlled it, too. New knowledge changes our ability or desire to perform. New regulations change our ability or desire to perform. Our performance must improve.
The codes encompass member company operations both: inside and outside Canada.	Operations inside and outside Canada should not be treated differently. Companies control their operations (inside & outside Canada).
They include both existing and new chemical products, uses, processes, equipment, services and facilities.	Existing and new products, uses, processes, equipment, services and facilities are all worthy of concern. Companies control products, uses, processes, equipment, services and facilities.
"New" may derive from research and development, purchase or acquisition.	Products, uses, processes, equipment, services and facilities can be owned and sold.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
Each requires consideration of the codes both in making decisions and then in integrating new development or acquisitions into operations.	New development and acquisitions get integrated into existing operations. The integration of new development or acquisitions into operations can have important effects.
Code requirements must be integrated into corporate planning across each member company at all levels.	Companies plan their actions. Companies plan actions at different levels. Companies must consider Codes when planning. Planning is important.
Similarly, code requirements must be integrated into member company operations.	Codes must be part of operations.
Each code addresses specific activities within a member company.	Things companies do internally are the focus of attention.
The responsibilities for code implementation and compliance must be clearly assigned.	Specific people must take responsibilities. Things get done if specific people are clearly responsible. Compliance must be checked by specific people.
Beyond these designated responsibilities, successful code implementation and compliance requires everyone from the board of directors and senior management on down to think and act in ways that enhance rather than work at cross purposes with efforts to meet code requirements.	Board of directors and senior management are 'higher' than the rest of the organization. Things aren't successful unless everyone acts appropriately. People can work towards or at cross-purposes to initiatives. Individuals affect outcomes at companies. Individuals have some freedom of action at companies.
To facilitate this, there must be a supportive working environment.	People should support one another at work. Results are better if people support one another. People are more likely to work towards Code implementation if they are supported.
Compliance with these codes is everybody's job.	Everyone should worry about complying. Everyone can affect compliance. Everyone is involved.
The company's responsibility extends to its suppliers, transporters, distributors, other contractors and customers.	Companies are responsible for the actions of others. Companies can affect the actions of suppliers, transporters, distributors, contractors and customers; companies are strong in the marketplace. Suppliers, transporters, distributors, contractors, customers might be less responsible than us. We can police others.
Some of these such as certain transporters and distributors, are partners in Responsible Care.	We trust some transporters and distributors more than some of the others.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
The codes, as they relate to these other parties, are not meant to relieve them of taking on their own responsibilities, but, instead, to motivate them to take them more seriously.	These other parties are still responsible for their actions. We need to nudge them. They are not taking their actions seriously enough.
Within the limits of due diligence, the member companies are required to satisfy themselves that their products are being handled by these other parties in accordance with the codes of practice.	We are responsible for policing other parties, within limits. We can only go so far in policing others. These other parties are handling our products. We have to check that our products are handled properly. They are our products. These other parties might not handle our products properly.
The company's responsibility also extends to the communities in which it operates.	Companies have responsibilities to several stakeholders. Companies have responsibilities to communities in which they operate, not to other communities.
This reflects the implicit social contract that member companies have with society in general and involved communities in particular, to behave ethically and responsibly.	Companies have a social contract with society. Companies have obligations to society. Society has obligations to companies. Companies have particular obligations to communities around them. These communities have particular obligations to the companies in them. Companies are obliged to society and communities to behave at certain ethical standards. Companies are obliged to society and communities to behave responsibly. Companies can behave unethically. Companies can behave irresponsibly. Companies choose how they behave.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
The codes require a commitment to "know all laws and regulations concerning operations, and meet or exceed them in letter and in spirit".	Laws and regulations can be met in letter or in spirit. Companies choose whether to meet laws and regulations. Companies choose whether to meet laws and regulations in spirit. Laws and regulations can be exceeded. Companies choose whether to exceed laws and regulations. Companies choose whether to know all laws and regulations. Laws and regulations are not always met. Laws and regulations are not always known. If companies commit to do something, they are more likely to do it than if they don't commit. Laws and regulations are worthy of respect.
To meet only the letter of the law falls short of the intention of these codes.	These Codes are meant to go beyond the law. These Codes have intentions as well as exact meanings. Companies should comply with the "intention" of these codes, not just their exact meanings.
This is not "self-regulation".	"Self-regulation" is good. "Self-regulation" is better than external regulation. "Self-regulation" is what we're trying to accomplish.
Self-regulation requires member companies to meet all laws and regulations in spirit or exceed them.	"Self-regulation" includes going beyond actual regulation and laws.
To achieve this demands ethical thinking, decision-making and performance.	Companies will require ethical thinking to achieve "self-regulation". Performance must be ethical as well as thinking.
In order to meet the code requirements of "to protect" or "to minimize" the concerns and needs of all the stakeholders must be understood and addressed.	Protection can only happen if stakeholders are addressed. Minimization can only happen if stakeholders are addressed. Protection is not just a technical concept. Minimization is not just a technical concept. Concerns of all stakeholders should be understood. Needs of all stakeholders should be understood. Concerns of all stakeholders should be addressed. Needs of all stakeholders should be addressed.
"Stakeholders" is intended to include, but not be limited to, the public-at-large, customers, contractors, employees and any other people on company sites.	Our stakeholders are (at least): the public, customers, contractors, employees and anyone else onsite. Other stakeholders may arise/exist. The CCPA has some say in telling us who our stakeholders are.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
Therefore, decisions affecting people and the environment must reflect these concerns and needs, and an understanding and adoption of values of health, safety and environmental protection.	Only decisions affecting people and the environment must consider stakeholders. Some decisions affect people and the environment. Stakeholder concerns and needs have to be considered sometimes. Health, safety and environmental protection must be understood for decisions affecting people and the environment. Health, safety and environmental protection "values" must be adopted for decisions affecting people and the environment. We should address concerns and needs of stakeholders.
This is the case whether decisions are made by company personnel acting alone or in consultation with affected stakeholders.	Decisions can be taken by individuals acting alone. Decisions taken alone must still reflect concerns of stakeholders. Concerns of stakeholders can be reflected without consultation. All decisions are subject to the same standards.
Member company performance must also reflect these concerns, needs and values.	Decisions and performance are not necessarily the same thing. Somehow we must ensure that performance meets needs, addresses concerns, and reflects values.
This is ethical thinking, decision-making and performance.	
This is meeting the spirit of the law or exceeding it, both in letter and in spirit.	
In adopting Responsible Care and these codes of practice, member companies and all of their people are accepting an important and demanding set of responsibilities.	People can act independently. Companies should accept these demanding responsibilities. Individuals should accept these demanding responsibilities. "Responsible Care" is important. "Responsible Care" is demanding.
However, in fulfilling these obligations, member companies derive significant benefits.	"Responsible Care" is good for us. The benefits come from doing "Responsible Care," not just accepting/adopting it.
Collectively, they succeed in their goals of self-regulation and public confidence in the industry.	Self-regulation is what we want. We want public confidence. Public opinion matters to us. We have to do this together.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
Individually, each member increases its standing in the community in which it operates and with those with whom it does business.	A company's standing in the community is important. Doing Responsible Care will increase the company's standing in the community. A company's standing with those it does business with is important. Doing Responsible Care will increase a company's standing with those it does business with. Community perceptions of companies are specific to each company. Other company's perceptions are specific to each company. Companies' standings in other communities are less important (or are not a function of individual company actions).
It experiences increased employee satisfaction and morale.	Employees like doing Responsible Care. It makes them feel good about their jobs.
Member companies and their people can be justly proud of their efforts and commitment.	Companies' people are separate from the companies. One can be proud while the other is not. Company efforts and commitment deserve recognition. Individual efforts and commitment deserve recognition. Companies like to feel pride. Individuals like to feel pride.
It makes them leaders.	Doing Responsible Care makes the company a leader. Doing Responsible Care makes individuals leaders.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
COMMUNITY AWARENESS AND EMERGENCY RESPONSE CODE OF PRACTICE	
PURPOSE	
The member companies of The Canadian Chemical Producers' Association (CCPA) are committed, as a condition of membership, to the policy of "Responsible Care".	Responsible Care is part of what gets us membership. There is something called "Responsible Care." It has an understood meaning.
This code governs member company actions in meeting the guiding principles of that policy as they relate to community understanding and protection.	Companies are the fundamental unit of action. The CCPA can tell companies what actions to take.
Practice of this code is intended to result in:	These Codes are designed with specific results in mind. Achievement of these results is not guaranteed.
• a harmonious understanding of each other's rights, responsibilities, concerns, needs, resources and mutual benefits;	Companies should be in harmony with communities. Communities have rights, responsibilities, concerns, needs, and resources. Communities' rights, responsibilities, concerns, needs and resources are homogenous. We can understand community rights, responsibilities, concerns, needs and resources. Companies have rights, responsibilities, concerns, needs and resources. Communities can understand our rights, responsibilities, concerns, needs and resources. The community will want to understand us. Companies and communities can help each other to gain mutual benefits.

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• a cooperative sharing of these in joint plans and actions which will inform and protect the community and the company and protect the environment;	We should cooperate with the community. We should share our rights, responsibilities, concerns, needs and resources with the community. They should share their rights, responsibilities, concerns, needs and resources with us. We should plan action with the community jointly. We should act with the community jointly. Our joint actions should inform the community. Our joint actions should protect the environment. The community should help to inform itself. The community should help to protect the environment. Our joint actions should protect the community. The community should help to protect itself. Cooperation is better than confrontation.
• the confidence of the community and employees and other people on site that they know the hazards and associated risks of company operations that could have an impact on them and that they and the environment are protected from these hazards:	Community confidence that they know hazards and risks is important. Community confidence that they are protected from hazards and risks is important. Community confidence that the environment is protected from hazards and risks is important. Employee confidence that they know, are protected, and that the environment is protected; from hazards and risks is important. Hazards and risks are different. Risks are associated with hazards. Some company operations could not have an impact on the community. Some could. Some company operations could not have an impact on employees. Some could. We want communities, employees and others to have confidence in us. People who are not onsite or in the communities around us do not matter.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
• a company/community image which can be projected with pride to wider communities.	Companies' and communities' images are tied to one another. How we get along with our community will be judged by "wider" communities. Our community is not "wide." We might want to boast to wider communities. We want to be proud of our relationship with the community. The community will want to boast to wider communities. The community wants to be proud of its relationship with us. Image is what to project to wider audiences.
GUIDING PRINCIPLES	
The regular principles of this code as they reflect those of the "Statement of Policy on Responsible Care" are:	This Code is part of the package.
i) Know the community concerns and respond sensitively to them;	*See Guiding Principles.*
ii) Provide information about the hazards and associated risks of chemicals, chemical products and operations to employees, other people on site and those in the community who have an interest;	
iii) Manage operations in a manner which protect people and the environment from hazards;	
iv) Know the laws and regulations concerning community right-to-know and community emergency response, and meet or exceed them in letter and in spirit;	
v) Apply this code to existing, modified and new chemicals, chemical products, processes, equipment and facilities;	
vi) Work actively to assist governments in developing public policies, legislation and regulations governing community awareness and emergency response.	
CODE OF PRACTICE	
1. General	

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Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
Each member company research and development, manufacturing, distribution and waste management site shall have an active community awareness and emergency response program.	All R&D, manufacturing, distribution and waste management sites must be concerned with community awareness and emergency response. Any of these sites could have an emergency. These sites are all significant to the community. All these sites have communities. Offices do not need to worry about emergencies. Offices do not have communities. We can't worry about other companies' sites.
The site manager has the primary responsibility to generate, implement, field-test, audit and update this program, including its written policies and procedures.	Site manager is in charge of community awareness. Site manager is in charge of emergency response. Others also share responsibility. Community awareness and emergency response programs have to be tested and audited. Community awareness and emergency response practices change. The site plan must update its program. The site manager can generate her own program.
This program shall meet or exceed all applicable laws and regulations in letter and in spirit.	*Repetition of text used in "Preamble: Implications.".*
Each member company site shall have training criteria commensurate with CAER program requirements, conduct regular performance assessments and maintain employee competence.	Training is done at the site level. Employees need training to do CAER. Some training is adequate. Other training is not. Employees need to be assessed to determine if their performance is up to scratch. Things learned at training are forgotten unless maintained.
Each member company shall work actively, alone or through selected organizations, and, if possible, in consultation with affected stakeholders, to assist governments in developing public policies, legislation and regulations governing community awareness and emergency response.	Governments are worth assisting. Companies should take the initiative in assisting governments. Companies can decide whether to work alone or through an organization in assisting governments. Companies should consult other affected stakeholders if they can. Public policies, legislation, and regulations could legitimately govern community awareness and emergency response. What the government does is important.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
Some site activities shall be restricted if they cannot be performed in compliance with the emergency response.	Some things shouldn't be done unless emergency response is provided for. Community awareness is not so important that the site shouldn't operate without it. Companies can be trusted to restrict their activities if appropriate. Activities are either in compliance with this Code or not.
2. Community awareness	
There shall be an active community awareness program, consistent with the CCPA's community right-to-know policy which:	Community awareness can be active or inactive. Companies must keep their community awareness active.
2.1 identifies and updates a listing of organizations and people which represent community interests;	Community interests are sufficiently homogeneous to be represented by organizations or people. Organizations in the community change. People in the community change. The community has interests. The company can determine who represents community interests.
2.2 identifies and updates a listing of community rights, responsibilities, concerns, needs and resources;	The company can identify community rights, responsibilities, concerns, needs and resources. The community has rights, responsibilities, concerns, needs and resources.
2.3 develops information for both responsive and proactive communication with the community;	The company should respond to the community with information. The company should provide information unsolicited to the community. The company should develop appropriate information that it does not have. The company should rely on information in communicating with the community. The company is a source of information useful to the community.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
2.4 includes a regular process of communication with the community;	The company should communicate regularly with the community. The community may have new things to say over time. The company may have new things to say over time. The company might otherwise communicate just once.
2.5 identifies and trains company participants for this communication process;	Some people are more appropriate for communication than others. People need training to communicate with the community. Communicating with the community is a skill that is learned. Not everyone at the company can or should communicate with the community.
2.6 provides a system to measure and assess program activities and results.	Communicating to the community has a purpose. The purpose may or may not be achieved by communicating. The achievement of the purpose can be measured.
3. Emergency response	
There shall be an up-to-date, operational emergency assistance plan which	Emergency assistance plans get stale; not ours. Some emergency assistance plans are not operational.
3.1 is based on a site specific risk assessment, which identifies and evaluates on a regular basis those situations where company materials, processes or equipment could have an impact on site and/or on the community in the event of an emergency;	Risk is a useful measure of emergency potential. Risks differ for different sites. Risks change over time. We should worry about company materials, processes or equipment impacting the site or the community if an emergency happens. Emergencies happen. Different emergency situations can be evaluated. Potential impacts are worth considering.
3.2 provides information from this assessment on hazards and associated risks to employees, other people on site and those in the community who have an interest:	Employees, others onsite, and some in the community can understand information from risk assessments. Not everyone in the community is interested. The onus is on those in the community with an interest to ask for the information; the onus is not on the company. Employees, others onsite, and those in the community who ask, deserve hazard and risk information.

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Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
3.3 is based upon an emergency plan framework developed by site management to both address such emergency situations and to assist authorities in emergency response planning for neighbouring industry and the community;	The site should assist authorities in planning emergency response for neighbouring industry and the community. The site has something to offer authorities in this effort that they will find useful. The site should consider itself as part of an overall area including neighbouring industry and the community. Site management has the expertise to develop an emergency plan framework. Neighbouring industry may not have emergency planning as advanced. Authorities may not have an integrated emergency response framework.
3.4 requires active participation, cooperation and coordination by company personnel with local officials and the media during development and communication of the plan to the community;	The company should cooperate with local officials. Efforts of the company and local officials should be coordinated. The company should cooperate with the media in communicating its plan to the community. Local officials may be able to help with developing the plan. The plan is communicated *to* the community in a one-way process. The community could not assist in developing the plan.
3.5 integrates the company's emergency response plan with those of industrial neighbours and the community into a community emergency response plan;	The community should include the site in its emergency response thinking. The company is part of the community. The company should think about potential emergencies at other industrial sites.
3.6 is communicated regularly, in its key elements, to the community in a manner which recognizes its right-to-know, in order to gain its cooperation and support;	We want community cooperation. We want community support. The community doesn't need to know details. The community needs to have the emergency plan repeated to it regularly.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
3.7 in an emergency makes available to first responders and the community company expertise and specialized equipment and materials;	We have expertise useful to first responders. We have equipment and materials useful to first responders. These are ours, normally we don't offer them to first responders. In an emergency, we are more generous with our possessions than normally. First responders act on behalf of the community.
3.8 is sensitive to and provides for evaluation with appropriate authorities of the need for immediate and short term assistance for persons who are dislocated by a company site emergency;	People may be dislocated because of an emergency of ours. People may need money because of an emergency of ours. We might not compensate all such claims. We might compensate some. Authorities can help us determine which claims we will compensate. We should provide immediate help to those deserving. Long term dislocations are not our financial responsibility. An emergency is ours. It is owned by us.
3.9 is documented, field tested, audited and updated at least annually.	Writing emergency response down makes it work better. Testing makes emergency response work better. Emergency response plans need to be updated annually. Circumstances change. Emergency response plans should be audited annually.
RESEARCH AND DEVELOPMENT CODE OF PRACTICE	
PURPOSE	
The member companies of The Canadian Chemical Producers' Association (CCPA) are committed, as a condition of membership, to the policy of "Responsible Care".	*Exact repetition of text used in the Purpose of the Community Awareness and Emergency Response Code.*
This code governs member company actions in meeting the guiding principles of that policy as they relate to all aspects of the research and development, and initial use of new chemicals, chemical products, processes and equipment, as well as the development of new applications for existing chemicals and chemical products.	New applications of existing products/chemicals are just as worthy of attention as new products/chemicals. R&D and initial use are worthy of attention.
"Research and Development" means technical work of an investigative nature which occurs at all stages of development of new chemicals, chemical products, processes, equipment and uses.	Technical work is different than other work.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
It extends from initial approval of scientific research, through experimental development to the first full-scale operation of the process, or production of the chemical or chemical product and its introduction to the market.	Companies control their research and development paths in this linear manner.
It is equally applicable when some of the stages are omitted; for example, experimental process change or development done on a full-scale plant, which is often not categorized as research.	CCPA's definition of R&D includes things companies often don't. The obligation extends beyond traditional definitions.
Practice of this code is intended to result in:	*Exact repetition of text used in the CAER Code.*
• the protection of people and the environment through responsible management of all research and development operations, and the introduction of new chemicals, chemical products, processes, equipment and uses that minimize risk to people and the environment;	R&D could endanger people and the environment. R&D can be managed. Risk to people and the environment should be should be minimized. New chemicals, products, processes, equipment and uses are risky. New chemicals, products, processes, equipment and uses can be managed responsibly or not.
• the assurance that the management systems necessary for responsible research and development operations are in place and functioning effectively;	R&D can only be responsible if management systems are used. Management systems don't always function effectively.
• public and employee confidence in research and development as a result of the effectiveness of the above.	The public and employees become confident of R&D if it is managed responsibly using systems. Public confidence in R&D is desirable. Employee confidence in R&D is desirable. The CCPA has correctly determined what it will take to get public and employee confidence in R&D.
GUIDING PRINCIPLES	
The guiding principles of this code as they reflect those of the Statement of Policy on Responsible Care are:	
i) make Responsible Care an early and integral part of the planning process leading to new chemicals, chemical products, processes, equipment or uses.	*See Guiding Principles.*

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
ii) increase the understanding of the hazards and associated risks of existing chemicals, chemical products, processes, equipment and their uses, and ensure that a thorough level of understanding of new chemicals, chemical products, processes, equipment and their uses and their potential hazards is achieved prior to and throughout commercial development.	
iii) manage research and development operations in a manner which protects people and the environment from hazards	
iv) provide information about the hazards and associated risks of new chemicals, chemical products, processes and uses to customers, enabling them to use these and manage associated wastes in a responsible manner.	
v) provide information about the hazards and associated risks of research and development operations to employees and other people on site, to contract laboratories, and to those in the community who have an interest.	
vi) know the laws and regulations applicable to research and development, and meet or exceed them in letter and in spirit.	
vii) be sensitive and responsive to community concerns about research and development operations.	
viii) work actively to assist governments in developing public policies, legislation and regulations governing research and development operations.	
CODE OF PRACTICE	
1. General	
Each member company shall have written policies, protocols and methodologies which govern all aspects of the research and development of new chemicals, chemical products, processes, equipment and uses.	Writing down policies, protocols and methodologies is good.

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Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
Responsibility shall be clearly defined for generating, implementing, auditing and updating them, and for taking corrective action.	Clear assignment of responsibility is important. R&D policies, protocols and methodologies need to be audited. R&D policies, protocols and methodologies should change over time.
These policies, protocols and methodologies shall meet or exceed all applicable laws and regulations in letter and in spirit.	*Repetition of text used in the General section of the Community Awareness and Emergency Response Code.*
Each member company shall have hiring standards and training criteria commensurate with responsible research and development requirements, take action to maintain employees competence and include code compliance in regular performance assessments.	*Repetition of text used in the General section of the CAER Code, and:* Employees need training to do responsible R&D.
The manager of a research and development site shall adhere to the requirements of the CAER code of practice.	
Each member company shall site stand-alone facilities in a manner that conforms to the applicable requirements of section 3 of the manufacturing code of practice.	Stand-alone R&D facilities require more attention than other R&D facilities.
Each member company shall put in place security procedures and systems which protect the facilities and address possible security threats.	Security of R&D facilities is important. Unauthorized access to R&D facilities is a serious threat. Some companies wouldn't be secure otherwise. We expect security threats, or we expect they would be serious.
Each member company shall work actively, alone or through selected organizations, and, if possible, in consultation with other affected stakeholders, to assist governments in developing public policies, legislation and regulations governing research and development operations.	*Repetition of text used in the General section of the CAER Code, and:* Public policies, legislation, and regulations could legitimately govern research and development.
Each member company engaged in research and development agrees that the responsibility and accountability for adhering to this code will be clearly assigned.	Clear assignment of responsibilities and accountability is important.
Research and development operations will not occur unless they can be done in accordance with this code.	R&D not in accordance is unacceptable and not done. Some ways R&D used to be done is unacceptable.
2. R & D project approval	

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
Prior to initiating and R 8 D project, every member company conducting research and development of new chemicals and chemical products, processes, equipment or applications shall require that:	Some issues have to be considered even before an R&D project is started.
2.1 protocols and methodology are in place to ensure that health, safety and environmental hazards are identified and evaluated as early as possible, and standards for operations are defined.	R&D personnel cannot address health, safety and environmental hazards ad hoc; protocols, methodology and standards are required. The earlier hazards are identified the better. Standards for operations can be defined at the R&D stage. Some health, safety and environmental hazards are worse than others.
This procedure applies not only to the research phase but also to pilot plant operations, manufacturing and marketing as they progress.	Protocols, methodology and standards must be carried through successive stages of new ideas' lives.
Particular attention is given early to long-term health and environmental effects related to chemicals, chemical products, processes and new uses and the management of associated wastes;	Long term health and environmental effects are worthy of special attention. Long term health and environmental effects are at least partially knowable at the R&D stage. The company should pay attention to long term effects. Wastes may present long term effects. Wastes should be considered at the R&D stage.
2.2 periodic reviews and checkpoints are established which dictate project continuance or termination dependent on performance versus such standards:	Whether a project should continue or not should be decided according to pre-determined standards. It is appropriate for R&D projects to be killed for health, safety or environment reasons. The state of an R&D project is knowable.
2.3 potential applications are defined and analyzed for hazards both initially and as work proceeds;	Different product applications deserve the company's attention. The company should look for hazards associated with all possible uses of products. Applications can change as more knowledge is gathered. Hazards can change as more knowledge is gathered. Hazard analysis should be ongoing.
2.4 the above principles apply wherever the work is done, including plants or contract laboratories.	The same standards apply at R&D facilities, plants and outsiders' labs. The company controls hazard analysis, protocols, methodologies and standards at contract labs.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
3. Good laboratory practice	Laboratory practice can be good or bad.
Member companies undertaking product, process or application research and development, whether performed in-house or by contract laboratories, shall establish written policies and standards to ensure good laboratory practice.	Written policies and standards can ensure good practices. The company controls policies and standards at contract labs.
These shall cover:	
3.1 general laboratory health and safety;	General standards for labs exist.
3.2 hazard identification and communication, including regular employee training and education;	Hazards must be communicated to employees. Employees might not know hazards. Employees need to be reminded of hazards regularly. Employees need to be trained to deal with hazards.
3.3 proper management of laboratory waste;	Lab waste can be managed properly or improperly. Lab waste is significant.
3.4 documentation and reporting of results in a scientifically accurate and ethical manner;	Documenting and reporting of results has Responsible Care implications. "Scientific" accuracy exists (not the same as "accuracy"?). Reporting of results is an ethical issue. Results must be documented, reported.
3.5 preparation of a data package on every new chemical, chemical product, process and application which clearly identifies potential hazards, including those of associated wastes.	A new product or application is not complete without hazard information. Potential hazards (not just hazards) are important to know and document. Hazards of associated wastes are as important as other hazards.
Laboratory practice shall be audited and updated on a regular basis.	Lab practice must be audited. Good lab practice can change over time. Lab practice should be up-to-date.
4. Transfer to manufacturing	

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
Every member company transferring a new chemical or chemical product, a new process of new equipment from research and development to manufacturing shall ensure that:	Companies have distinct R&D and manufacturing areas. R&D and manufacturing tend not to work on the same project at the same time. Transfers of responsibility need to be well-managed.
4.1 hazard and operability studies, or their equivalent, are an integral part of the design process;	Design must consider hazards and operability. Exact design methods are up to the company.
4.2 standards for health and safety and environmental protection in the new process are clearly spelled out, and that it is the responsibility of the process design team to achieve them;	Design must meet health, safety and environmental standards. Pre-determined standards are more appropriate for design than economic tradeoffs or optimization. The achievement of standards is a design issue (i.e. not operations or maintenance).
4.3 all operators are fully trained in the new or revised process before start-up, including procedures to be followed in an emergency;	Operators can be fully trained in something the company has not yet done. Revised processes require as much attention as new processes. Potential emergencies should be covered in training. Some training is not up to scratch (not "fully"). Start-up involves hazards.
4.4 material safety data sheets (MSDS) are available for all input, in-process and output materials, and proper procedures for packaging, handling and disposing of these materials, including by-products, are clearly identified;	Materials are not complete without their MSDS's. Materials occurring in-process are as worthy of attention as inputs or outputs. Thought should be given to handling and disposal before a material is produced or acquired. Procedures must be clearly spelled out.
4.5 the above principles are applied also to pilot or less than commercial scale plants, except that in this case certain standards e.g. those for durability of the process equipment, may be less rigorous.	
5. Market introduction	

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
Every member company introducing a new chemical, chemical product, process or application to the marketplace shall:	
5.1 ensure that the requirements of all relevant legal and government regulations are met or exceeded in letter and in spirit;	*Repetition of text used in the General section of this Code.*
5.2 educate employees and contract personnel to ensure responsible product handling and transportation;	Employees and contract personnel need to be educated to handle and transport products properly. Products can be handled and transported properly or improperly. The company knows how to handle and transport properly. Employees will handle and transport the way they have been educated to.
5.3 provide potential customers with information about hazards and associated risks, and assistance to ensure responsible handling, use and waste management, including reduction/recycling/recovery/reuse opportunities where feasible;	A product is not complete without information about its hazards and associated risks. Potential customers need to be informed of hazards and risks. Customers need to be assisted in handling, use and waste management. The company knows more about the product than the customer. The company knows about reduction/recycling/recovery/reuse opportunities for the customer. The company will want to assist the customer to use less of the company's product. Reduction/recycling/recovery/reuse is not always feasible.
5.4 subsequently check back to confirm that customers are following responsible handling, use and waste management practices.	The company can judge the customer's handling, use and waste management practices. The company can check back on a customer after the sale. The customer might not be following responsible practices.
Each member company shall require, with due diligence, that customers follow responsible handling, use and waste management practice, if special requirements are determined to apply;	In special cases, the customer must follow responsible practices. Customers do not usually have to follow responsible practices.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
5.5 ensure that even for small-scale test marketing, the first three items in section 5 up to and including "waste management' in item three are in place before proceeding.	Small scale test marketing is also worthy of attention. Small scale test marketing is not worthy of as much attention. Reduction/recycling/recovery/reuse is not a worry for small scale test marketing. Checking customers is not important for small scale test marketing.
MANUFACTURING CODE OF PRACTICE	
PURPOSE	
The member companies of The Canadian Chemical Producers' Association (CCPA) are committed, as a condition of membership, to the policy of "Responsible Care".	*Repetition of text used in the Purpose of the Research and Development Code.*
This code governs member company actions in meeting the guiding principles of that policy as they relate to all aspects of the commercial production of chemicals and chemical products by the member company and toll manufacturers.	Manufacturing done by toll manufacturers is just as important to consider as the company's manufacturing.
Practice of this code is intended to result in:	*Exact repetition of text used in the R&D Code.*
• the protection of people and the environment through the responsible management of all facilities and materials during manufacturing;	Facilities and materials used during manufacturing could threaten people and the environment.
• the assurance that the management systems necessary for the responsible operation of the manufacturing site are in place and are functioning effectively;	Manufacturing can only be responsible if management systems are used. Management systems don't always function effectively.
• the confidence of the community and employees and other people on site that they know the manufacturing hazards and associated risks that could have an impact on them and that they and the environment are protected from these hazards.	*Almost exact repetition of text used in the Purpose section of the Community Awareness and Emergency Response Code.*
GUIDING PRINCIPLES	
The guiding principles of this code as they reflect those of the "Statement of Policy on Responsible Care" are:	

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
i) manufacture chemicals and chemical products in a manner which protects people and the environment from hazards;	*See Guiding Principles.*
ii) provide information about the hazards and associated risks of on-site chemicals, chemical products, processes and equipment to employees, other people on site, and toll manufacturers, and to those in the community who have an interest;	
iii) make Responsible Care an early and integral part of the planning process leading to new chemicals, chemical products, process, equipment or facilities;	
iv) apply this code to existing, modified, and new chemicals, chemical products, processes, equipment and facilities;	
v) know the laws and regulations concerning manufacturing, and meet or exceed them in letter and in spirit;	
vi) be sensitive and responsive to community concerns about manufacturing operations;	
vii) work actively to assist governments in developing public policies, legislation and regulations governing the manufacture of chemicals and chemical products.	
CODE OF PRACTICE	
1. General	
Each member company shall have written policies, standards and procedures which govern all aspects of the manufacture of chemicals and chemical products.	Writing down policies, standards and procedures makes manufacturing more responsible.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
Responsibility shall be clearly defined for generating, implementing, auditing, and updating them, and for taking corrective action.	Clear assignment of responsibility is important. Manufacturing policies, standards and procedures need to be audited. Manufacturing policies, standards and procedures should change over time. Corrective action is sometimes necessary. Someone should be clearly responsible for taking corrective action.
These policies, standards and procedures shall meet or exceed all applicable laws and regulations in letter and in spirit.	*Repetition of text used in the General section of the Research and Development Code.*
Each member company site shall have hiring standards and training criteria commensurate with responsible manufacturing requirements, conduct regular performance assessments, take action to maintain employee competence, and ensure with due diligence the equivalent performance from contractors working within the plant environment.	*Repetition of text used in the General section of the Research and Development Code, and:* Employees need training to manufacture responsibly. Contractors in the plant should perform the same as company employees. The company should check up on contractors' performance. Contractors might not perform as well as employees. The company only has to go so far in checking up on contractors' performance.
Each member company shall ensure with due diligence that toll manufacturers meet the guiding principles of this code in contracted operations performed for member companies.	Toll manufacturers have to follow the principles of this code for members' chemicals. Companies should check toll manufacturers, up to limits.
Toll manufacturers shall be provided with information about hazards and risks associated with contracted operations.	Toll manufacturers deserve information about hazards and risks associated with contracted operations. Toll manufacturers might not know hazards and risks otherwise.
Each member company shall work actively, alone or through selected organizations, and, if possible, in consultation with affected stakeholders, to assist governments in developing public policies, legislation and regulations governing the manufacture of chemicals and chemical products.	*Repetition of text used in the General section of the R&D Code, and:* Public policies, legislation, and regulations could legitimately govern the manufacture of chemicals and chemical products.
Chemicals and chemical products will not be manufactured unless this can be done in accordance with this code.	Manufacturing not in accordance with this Code is unacceptable and not done.
2. Employee, community and environmental protection	

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
Each member company shall have management systems in place to protect the safety and health of its employees and other people on site, the community and the environment from any harmful effects of its materials and operations.	Company materials and operations may harm employees, others onsite, the community or the environment. Management systems can protect employees, others onsite, the community and the environment from harm. Management controls harms. Companies know the harmful effects of their materials and operations.
The member company shall	
2.1 identify and evaluate on a regular basis potential safety, health and environmental hazards and associated risks, and work to minimize these risks through hazard elimination, engineering controls, procedures, education and the use of personal protective equipment;	The company looks for potential hazards and risks. The company evaluates hazards and risks. The company tries to minimize risks using several techniques, strategies. Risk is a good variable to try to control. Human behavior affects risks. Technology can control risks.
2.2 monitor its safety and health performance as well as the working environment with the objective of identifying and minimizing actual or potential occupational health and safety problems;	Safety and health performance are measurable. Potential occupational health and safety problems are as important as actual problems. Companies have occupational, health and safety problems (potential ones, at least). The work environment is different than the ambient environment. The work environment is worthy of monitoring. Safety and health performance numbers are meaningful.
2.3 prepare an emergency plan which addresses potential emergencies on and around the site which involve the company's materials or processes and assist the appropriate authorities in developing and communication an emergency response plan for the community(*);	*See Community Awareness and Emergency Response Code.*
2.4 provide information to employees, other people on site and interested people in the community about the materials handled, processes and equipment, related hazards and associated risks and the procedures for their control, and respond to community and public concerns (*);	*See Community Awareness and Emergency Response Code.*

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
2.5 be aware of all effluents and emissions to the environment, monitor those for which it is necessary, and implement plans for their control when necessary.	All effluents and emissions to the environment can be known. The company can determine which effluents and emissions should be monitored. We can determine which effluents and emissions should be controlled. We should know what we put into the environment.
Develop and maintain plans and procedures to minimize the effects of accidental spills or emissions;	Accidental spills & emissions happen. Accidents are better handled by plans and procedures than ad hoc. The company can know how to handle spills and emissions. Plans and procedures need to be maintained.
2.6 minimize the generation of waste materials through reduction, recycling, recover and/or reuse.	*See Hazardous Waste Management Code.*
Waste shall be managed in an environmentally sound manner.	
Where hazardous waste elimination or reduction through treatment or destruction is not practicable, these wastes must be contained in a secure manner and monitored (refer to the hazardous waste management code of practice for further details);	
2.7 assess the environmental impact when a facility is closed or demolished and take action to protect people and the environment.	Future environmental impacts are knowable. The company should protect against environmental impacts that take place after a facility is no longer operating. Such impacts need only be assessed when the facility is closed, not before. Closing facilities or demolishing them can have environmental impacts or can harm people.
(*) (refer to the code of practice on community awareness and emergency response to (CAER) for further details)	
3. Design and construction of facilities	
Each member company shall have written policies, standards and procedures for siting, design, construction and commissioning of new facilities.	Writing down policies, standards and procedures makes siting, design, construction and commissioning more responsible.
The member company shall:	

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Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
3.1 perform and document a hazard analysis and risk assessment during the design stage of any facility, and act to minimize and control any hazardous situations:	Hazards and risks can be determined before facilities are designed. All facilities can have hazards and risks. Design modifications can minimize or control hazards. Minimization or control of hazards is sufficient.
3.2 establish site selection criteria which minimize any adverse impact on the community, the environment, industrial neighbours, utilities, and transportation routes;	Site location can adversely affect community, environment, other industries, utilities, and transportation routes. We should worry about how we affect community and environment. We should worry about how we affect industrial neighbours, utilities and transportation routes (even though others are also paid to run these entities). We should think about adverse impacts beforehand. Adverse impacts can be anticipated in advance.
3.3 establish and implement criteria for buffer zone requirements for new or existing sites;	Our sites should be isolated from the rest of society. Our sites are inherently dangerous? Our sites would menace society were they too close?
3.4 incorporate in the design, measures which will minimize the effects on people and the environment which could remain or develop after closure or demolition of facilities;	We should think about effects on people and the environment after a facility's useful life is over. Our facilities have finite lives. All effects manifested after closure or demolition are bad. Post-closure effects are a function of design. Design can minimize post-closure effects. Post-closure effects can be anticipated long in advance. Some effects develop only after the closure of a facility. Our facilities can threaten people or the environment even after they are demolished.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
3.5 develop, implement and audit safety standards which protect employees, construction personnel, the public and the environment during construction, commissioning and start-up;	Construction, commissioning and start-up can pose safety problems to employees. Safety standards need to be audited to be effective. Construction, commissioning and start-up can pose safety problems to the public and/or the environment. It is our responsibility to protect our employees. It is our responsibility to protect the public and the environment. Construction, commissioning and start-up are worthy of concern even though they take place relatively quickly.
3.6 recognize the CCPA's community right-to-know policy by providing information to all interested people at the planning stage of new facilities and by responding to their concerns.	Some people will be interested in new facilities. The onus is on people to state their interest and their concerns, not on the company to seek them out. The flow of information in new facility design is primarily outward from the company to people, not the reverse.
4. Operations	
Each member company shall have written operating, engineering and maintenance procedures which specify conditions for the responsible operation of any facility during normal or abnormal circumstance.	Writing procedures down is good. Procedures for abnormal circumstances should also be written down. Correct procedures for all circumstances can be known in advance. Facilities can be operated responsibly or irresponsibly.
The member company shall:	
4.1 perform and document a regular hazard analysis and risk assessment of the operating facility and take action to minimize identified risk;	Hazards and risks can change over time. Documenting hazard analyses and risk assessments is necessary. Risk is meaningful and worth minimizing. It is likely that risk will always be present.
4.2 have written and up-to-date procedures which cover all phases of operation, including start-up and shutdown;	Procedures for operation change with time.

Text from Responsible Care: A Total Commitment	Underlying Beliefs, Values and Cultural Assumptions
4.3 have written and up-to-date procedures which protect personnel during the maintenance of the facilities;	Maintenance can harm personnel. Procedures can protect personnel. Maintenance procedures can change over time. We should protect maintenance personnel by "procedurizing" their activities.
4.4 take action to prevent injury, damage and harm to people and the environment from explosion, fire or uncontrolled releases;	Explosions, fires and uncontrolled releases can happen. Injury and damages from explosions, fires and uncontrolled releases can be prevented. Environmental damage from explosions, fires and uncontrolled releases can be prevented. Sometimes we can't control our releases.
4.5 have a management system to control and record changes and modifications to equipment, processes, materials and associated computer hardware and software;	Changes to equipment, processes, materials, hardware and software can lead to problems. Recording changes can reduce problems. Controlling changes can reduce problems.
4.6 institute security procedures and systems which protect the facilities and address possible security threats;	*Repetition of text used in the General section of the Research and Development Code, and:* Security of manufacturing facilities is important. Unauthorized access to manufacturing facilities is a threat.
4.7 maintain systems and procedures to minimize risks to safety, health and the environment during the handling and storage of all materials used and produced;	Handling and storage pose risks to health, safety and the environment. Systems and procedures can minimize these risks.
4.8 audit and update these procedures on regular basis.	Auditing these systems makes them work better.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
TRANSPORTATION CODE OF PRACTICE	
PURPOSE	
The member companies of The Canadian Chemical Producers' Association (CCPA) are committed, as a condition of membership to the policy of "Responsible Care".	*Exact repetition of text used in the Purpose of the Manufacturing Code.*
This code governs member company actions in meeting the guiding principles of that policy as they relate to all aspects of the transportation of chemicals and chemical products, including hazardous wastes, by all modes from their source to their destination.	Transportation is the company's concern for all modes from source to destination. Transportation of hazardous waste is the company's concern.
Practice of this code is intended to result in:	
• continuous improvement in safety, and reduction of accidents which can result in injury to people and to the environment during the transportation cycle;	Safety can be improved. Improving safety will be slow; the best we can to is to continuously improve. No level of safety is satisfactory; we must continuously improve. Accidents cannot be eliminated.
• effective emergency response to transportation accidents which minimizes injury to people and damage to the environment;	Response to transportation accidents can be effective or not. Accidents create injury to people and damage the environment. Effective emergency response can minimize injury and damage.
• the assurance that the management systems necessary for responsible transportation activities are in place and are functioning effectively;	Transportation can only be responsible if management systems are used. Management systems don't always function effectively.
• cooperation with the transportation industry in reducing risks associated with the carriage of chemicals;	Transportation risks are not fully under our control. Carrying chemicals is inherently risky. We must work with the transportation industry. The transportation industry is worth working with.

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Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
• public, employee and transporter confidence in the transportation of chemicals and chemical products as a result of the effectiveness of the above.	The public and employees become confident of chemical transportation if it is managed responsibly using systems. Public confidence in chemical transportation is desirable. Employee confidence in chemical transportation is desirable. Transporter confidence in chemical transportation is desirable. The CCPA has correctly determined what it will take to get public, employee and transporter confidence in transportation.
GUIDING PRINCIPLES	
The guiding principles of this code as they reflect those of the "Statement of Policy on Responsible Care: are:	
i) transport chemicals and chemical products in a manner which minimizes risk of injury to the general population along transportation routes, persons involved in the transportation cycle, and the environment;	*See Guiding Principles.*
ii) provide information about the hazards and associated risks of chemicals and chemical products and their control in transportation emergencies, to transporters, first responders and to people potentially exposed shall be updated periodically and be readily available in the event of an emergency;	
iii) make Responsible Care an early and integral part of the planning of new product introduction, the design of new facilities or the significant modification of existing facilities;	
iv) know the laws and regulations concerning all phases of transportation, including the response to transportation emergencies, and meet or exceed them in letter and in spirit;	
v) be sensitive and responsive to community concerns about the transportation of chemicals;	
vi) assist the transportation industry in meeting this code of practice as it applies to their operations;	

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Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
vii) work actively to assist governments in developing public policies, legislation and regulations governing the transportation of chemicals and chemical products.	
CODE OF PRACTICE	
1. General	
Each member company shall have written policies, standards and procedures which govern all aspects of the transportation of chemicals and chemical products, including hazardous wastes.	Writing down policies, standards and procedures makes transportation of chemicals, chemical products and hazardous wastes more responsible.
Responsibility shall be clearly defined for generating, implementing, auditing, and updating them, and for taking corrective action.	Clear assignment of responsibility is important. Transportation policies, standards and procedures need to be audited. Transportation policies, standards and procedures should change over time. Corrective action is sometimes necessary. Someone should be clearly responsible for taking corrective action.
These policies, standards and procedures shall meet or exceed all applicable laws and regulations in letter and in spirit.	*Repetition of text used in the General section of the Manufacturing Code.*
Each member company site shall identify and evaluate on a regular basis the hazards and associated risks to people and the environment from the transportation cycle, and provide information about these hazards and associated risks to employees and transporters.	Transporters deserve information about transportation hazards and risks. Transporters might not know about transportation hazards and risks. Employees deserve information about transportation hazards and risks. Employees might not know about transportation hazards and risks. We know about transportation hazards and risks. Transportation hazards and risks are site specific. The "transportation cycle" is broader than just "transportation."
Each member company shall work actively, alone or through selected organizations, and, if possible, in consultation with other affected stakeholders, to assist governments in developing public policies, legislation and regulations governing the transportation of chemicals.	*Repetition of text used in the General section of the Manufacturing Code, and:* Public policies, legislation, and regulations could legitimately govern the transportation of chemicals.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
Chemicals will not be shipped unless this can be done in accordance with this code.	Shipping chemicals in a manner not in accordance with this Code is unacceptable and not done.
2. Accident prevention	
Each member company shall have an active program designed to continuously improve safety and to prevent accidents during the transportation cycle which:	Not all programs are active. Active programs are best. Transportation cycle safety requires improvement. Transportation cycle safety requires continuous improvement. Transportation cycle accidents should be prevented. Transportation is best dealt with company by company.
2.1 establishes criteria for selecting the mode of transport, the specifications for the transportation equipment and container, and inspection and maintenance of these during use;	Mode of transportation is important in safety. Equipment and container are important in safety. Equipment and container need to be inspected and maintained in order to ensure safety.
2.2 establishes criteria for selecting carriers which include safety performance and programs, inspection and maintenance procedures for equipment, selection and training of drivers and support staff, and assistance to carriers in meeting these criteria;	Not all carriers are equal. We can tell which carriers are safer. Some drivers are safer than others. Drivers need training to be safe. We should help carriers to become safer. We can help carriers to become safer.
2.3 identifies alternate transportation modes and routes which minimize the exposure of people and environmentally sensitive areas to the hazards inherent in the transportation mode:	We should consider alternative transportation modes and routes. Minimizing exposure is important. Some areas are more environmentally sensitive than others. We can tell which areas are more environmentally sensitive than others. Hazards are inherent to transportation. Hazards are inherent to transportation mode.
2 .4 establishes standards for equipment used in loading and unloading containers including containment and emergency response facilities in the event of an accidental release;	Loading and unloading containers is dangerous. Consequences of a loading/unloading accident can be mitigated. Accidental releases can happen when loading/unloading. Loading/unloading equipment can cause accidental releases.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
2.5 provides procedures, training and performance assessment for persons who load or unload the containers;	People who load/unload need training. Performance of loaders/unloaders must be assessed. Loaders/unloaders may not perform according to their training. Procedures make loading/unloading safer.
2.6 deals effectively with the risks involved in the return, cleaning, reuse, servicing and disposal of containers;	Return, cleaning, reuse, servicing and disposal of containers is risky. These risks can be dealt with. These risks can be dealt with effectively or ineffectively.
2.7 clearly identifies the contents of the containers;	Identification of containers' contents can reduce risk. Containers' contents would not necessarily be identified. Some accidents arise from not knowing what is in a container.
2.8 audits and updates all program components on a regular basis.	Transportation programs need to be audited regulalry to be effective. What makes a good transportation program changes with time. Transportation programs need to be updated regularly to be effective.
3. Emergency response	
Each member company shall have an up-to-date and operational transportation emergency response plan which:	Transportation emergency response plans get stale; not ours. Some transportation emergency response plans are not operational.
3.1 identifies and describes means for dealing with the hazards, whether to people or the environment, and ways to containing and cleaning up the release;	Description of emergency plans is useful.
3.2 identifies emergency response resources whether in-house, through a mutual aid plan such as TEAP (Transportation Emergency Response Plan) or from a contractor, to be deployed in the case of an accident involving the company's chemicals or chemical products;	We may need help with our emergency response. CCPA companies help each other with emergency response. We should prepare for accidents involving our chemicals. Accidents happen sufficiently often that we should prepare for them.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
3.3 provides technical advisors to handle all informational aspects of an accident involving the company's chemicals and chemical products, including media relations;	We have technical information useful to others. We have media relations skills useful to others. Techical advisors and media relations people are ours, normally we don't offer them to others. In the case of an accident, we are more generous with our people's services than normally.
3.4 provides specialized equipment and materials required for responding to an accident;	We have specialized equipment and materials useful to others. Normally we don't offer equipment or materials to others. In the case of an accident, we are more generous with our possessions than normally.
3.5 provides training and regular performance assessment of company emergency response personnel;	The company has designated people who respond to emergencies. Company emergency response personnel need training. Employees need to be assessed regularly to determine if their performance is acceptable.
3.6 provides assistance, through the association, in training first responders along the transportation corridors;	The company has knowledge that would be useful to first responders. First responders may not know all they need to know to handle chemical transportation emergencies. We should not assist first responders alone. The CCPA needs to mediate our training of first responders. Our chemicals are only transported along the identified transportation corridors.
3.7 provides for cooperation with government or other agencies at the accident scene;	Governments and other agencies should be cooperated with at accident scenes.
3.8 is sensitive to and provides for evaluation with appropriate authorities of the need for immediate and short term assistance for persons who are dislocated by a transportation accident;	*Almost exact repetition of text used in section 3.8 of the Community Awareness and Emergency Response Code.*
3.9 is documented, field-tested, and updated at least annually.	*Almost exact repetition of text used in section 3.9 of the CAER Code, except here there is no requirement for audits:* Transportation emergency response plans need not be audited annually.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
4. Awareness concerning transportation	
Each member company shall have a program, consistent with the CCPA's right-to-know policy, which enables it to respond to questions from those along transportation corridors.	Relations with the public should be managed via a program. Companies should be prepared to respond to questions. People along transportation corridors may have questions.
This program shall include:	
4.1 key elements of the policies, standards and procedures which reduce hazards, prevent accidents and provide prompt, effective response in the event of an accident;	The public only needs to know "key elements." We should tell the public what we are doing if they ask.
4.2 available information on the hazards and associated risks of chemicals and chemical products moving along the transportation corridors;	Not all information on hazards and risks is available. We should tell the public what we know about hazards and risks if they ask. Transportation of chemicals and products involves hazards and risks.
4.3 identification and training of employees responsible for answering questions;	Some people are more appropriate for answering transportation questions than others. Not everyone at the company should. People need training to answer transportation questions. Answering questions is a skill that is learned.
4.4 provision for participation in, and coordination with, a program the association will operate in conjunction with carriers in raising awareness concerning transportation;	We should participate in CCPA programs. Transportation awareness needs to be raised. Carriers are interested in raising carrier awareness. The CCPA should raise awareness. We should coordinate with CCPA programs.
4.5 periodic assessment and updating of the program.	We may need to improve our program. It may not be perfect at first. The business of responding to public questions will change with time.
DISTRIBUTION CODE OF PRACTICE	

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
PURPOSE	
The member companies of The Canadian Chemical Producers' Association (CCPA) are committed, as a condition of membership, to the policy of "Responsible Care".	*Repetition of text used in the Purpose of the Transportation Code.*
This code governs member company actions in meeting the guiding principles of that policy as they relate to all aspects of the distribution of chemicals, chemical products and services.	The distribution of chemical services deserves attention.
This code applies to member owned and contracted premises.	Contracted distribution premises are as worthy of concern as those owned by members.
"Distribution" is defined as all the activities in which member companies are involved in relation to the transfer of chemicals, chemical products and/or services through to the use of these chemicals, chemical products and services, in all geographic jurisdictions.	Distribution outside Canada deserves as much attention as distribution within Canada. Companies are at least partially responsible for the way their products are used.
This code is intended to cover activities related to the sale of chemicals, chemical products or services and those involved in moving chemicals, chemical products and services from suppliers for conversion or resale.	Companies are at least partially responsible for their chemicals even after sale.
Transportation is always a part of distribution, but, because of its importance, is covered by a separate code, namely, the code of practice for the transportation of chemicals and chemical products.	Transportation is very important; more important than the rest of distribution.
The practice of this code in intended to result in:	
• continuous reduction of incidents which can result in or threaten injury to people or damage to the environment during distribution;	Incidents occur during distribution. Distribution incidents can result in injury to people or damage to the environment; some incidents are benign. We can reduce the number of distribution incidents. Distribution incidents cannot be eliminated.
• cooperation with the users, manufacturers, distributors, importers, operators of warehouses and terminals, carriers and government agencies, in reducing risks;	Users, manufacturers, distributors, importers, operators of warehouses and terminals, carriers and government agencies can all contribute to risks. We should cooperate with all these groups. We should try to reduce distribution risks.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
• effective emergency response to any distribution incidents which minimizes injury to people and damage to the environment;	Emergencies can happen during distribution. Distribution emergencies can be dealt with effectively or ineffectively. Good emergency response minimizes injuries and damage to environment. Injuries to people and damage to environment happen (we try to minimize them, not eliminate them). Injuries to people should be minimized. Damage to environment should be minimized.
• the assurance that the management systems necessary for responsible distribution activities are in place and functioning effectively;	Distribution can only be responsible if management systems are used. Management systems don't always function effectively; ours do.
• public and employee confidence in the distribution of chemicals, chemical products and services as a result of the effectiveness of the above.	The public and employees become confident of chemical distribution if it is managed responsibly using systems. Public confidence in chemical distribution is desirable. Employee confidence in chemical distribution is desirable. The CCPA has correctly determined what it will take to get public and employee confidence in chemical distribution.
GUIDING PRINCIPLES	
The guiding principles of this code as they reflect those of the "Statement of Policy on Responsible Care" are:	
i) distribute chemicals, chemical products and services in a manner which protects people and the environment from hazards;	*See Guiding Principles.*
ii) provide information about the hazards and associated risks of chemicals, chemical products and services distributed to customers, enabling them to use and dispose of these chemicals and chemical products in a responsible manner;	
iii) provide information about the hazards and associated risks of distribution activities to employees, other people on site, distributors and resellers, and to those in the community who have an interest;	

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
iv) make Responsible Care an early and integral part of the planning process leading to the introduction of new chemicals, chemical products or services, before actual distribution is allowed to begin;	
v) apply this code to existing, modified and new chemicals, chemical products, services, equipment and facilities;	
vi) know the laws and regulations concerning distribution of chemicals, chemical products, services and information, and meet or exceed them in letter and in spirit;	
vii) be sensitive and responsive to community concerns about the chemical distribution activities;	
viii) required, with due diligence, that chemical distribution companies, and other resellers of members' chemicals, chemical products and services meet the minimum standards of this code of practice as it applies to those of their operations which impinge on member companies; require, with due diligence, similar performance on their part with respect to their distributors and other resellers;	
ix) require, with due diligence, that suppliers of chemicals, chemical products and services to member companies meet the minimum standards of this code of practice as it applies to those of their operations within Canada which impinge on member companies;	
x) work actively, alone or through selected organizations, and, if possible, in consultation with other affected stakeholders, to assist governments in developing public policies, legislation and regulations governing distribution activities.	
CODE OF PRACTICE	
1. General	
Each member company shall have written policies, standards and procedures which govern all aspects of the distribution of chemicals, chemical products and services.	Writing down policies, standards and procedures makes distribution of chemicals, chemical products and services more responsible.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
Responsibility shall be clearly defined for generating, implementing, auditing and updating them, and for taking corrective action.	Clear assignment of responsibility is important. Chemical distribution policies, standards and procedures need to be audited. Chemical distribution policies, standards and procedures should be changed over time. Corrective action is sometimes necessary. Someone should be clearly responsible for taking corrective action.
These policies, standards and procedures shall meet or exceed all applicable laws and regulations letter and in spirit.	*Repetition of text used in the General section of the Transportation Code.*
Chemicals, chemical products and services will not be distributed unless this can be done in accordance with this code.	Distribution in a manner not in accordance with this Code is unacceptable and not done.
2. Management of risk-employees, contractors, customers, publics and environment	
Each member company shall have an active program designed to continuously improve safety through the reduction of incidents and the protection of people and the environment from hazards through hazard reduction, procedures, education and the use of personal protective equipment.	Not all programs are active. Active programs are best. Distribution safety requires improvement. Distribution safety requires continuous improvement. Distribution incidents should be prevented. Distribution is best dealt with company by company. The company tries to reduce hazards using several techniques, strategies. Human behavior can reduce hazards.
The member company shall:	
2.1 identify and evaluate on a regular basis hazards and associated risks related to the storage and handling of chemicals and chemical products whether on owned or contracted premises;	The company evaluates hazards and risks. Risk is a good variable to try to control. Storage and handling of chemicals and chemical products is risky. Hazards and risks change with time; they should be evaluated regularly. Storage and handling on contracted premises is as worthy of concern as on owned premises.
2.2 monitor its safety and health performance as well as the working environment with the objective of identifying and minimizing actual or potential occupational safety and health problems;	*Exact repetition of text from section 2.2 of the Manufacturing Code.*

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
2.3 meet the requirements of the community awareness and emergency response code of practice;	
2.4 establish written standards for the proper siting of distribution facilities and for the proper ongoing security of these facilities;	Distribution facilities are safer if secure. Some safety threats come from unauthorized access. Written standards are more effective. Siting is important in determining safety.
2.5 establish written standards and procedures for bulk and packaged storage, including spill containment; proper product segregation; packaging and labelling of chemicals and chemical products in liquid, solid or gaseous form and vehicles used;	Storage can cause problems (is worthy of attention). Spills happen. Spills can be made safer via containment. Segregation of products can improve safety (i.e. synergies can be a concern). Packaging is worthy of attention for liquids, solids and gases. The vehicle used for distribution can affect safety. Written standards and procedures improve safety.
2.6 provide member company and contract employees with information about the hazards and risks associated with distribution activities, and training in the handling of chemicals and chemical products, including the cleaning of tanks and drums; the proper management of associated waste and empty containers; and transfer of goods from one container to another, including bulk to smaller containers; and, the packaging of chemicals and chemical products;	Employees and contractors deserve information about distribution hazards and risks. Human behaviour affects hazards and risks. Tank and drum cleaning can cause hazards and risks. Transfer of goods from container to container can create hazards and risks.
2.7 provide emergency support related to incidents involving member company chemicals, chemical products and services.	*See CAER and Transportation Codes.*
This support shall be consistent with the code of practice for community awareness and emergency response (CAER) and follow the transportation code of practice;	
2.8 audit and update the components of this program on a regular basis.	Distribution activities should be audited regularly to be effective. What is good distribution changes over time. Distribution activities should be changed over time.
3. Communication of information	

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
Each member company shall have written procedures in place to:	Writing procedures down makes them more effective.
3.1 obtain, understand, and then provide up-to-date material safety data sheets ((MSDS) to the customer's designated representative preceding (or at least accompanying) initial shipment of all chemicals and chemical products, including commercial samples;	It is best to give customers safety data before they receive shipments. Provision of data with shipments is acceptable. Commercial samples are as worthy of attention as larger shipments. Safety data changes over time. We should provide the latest data. The customer's representative will pass information to others in the customer's organizations. The customer will know what to do with safety data. Customers do not need to be reminded of safety data subsequent to their first shipment.
3.2 provide information on management of waste material and empty containers, which is to be carried out in keeping with the MSDS information and adhere to the codes of practice for waste management and transportation;	The customer might not know how to manage waste material. The customer might not know how to manage empty containers. We know how to manage both. We should tell the customer how to manage both. The customer will manage waste material and empty containers once she knows how.
3.3 provide to the customer that information which the member believes to be vital to the health and safety of the end-user and which is supplementary to the MSDS; and require, with due diligence, communication by the customer of such information to the end-user as a condition of sale;	The company thinks about what information is vital to the health and safety of the end-user. The company has beliefs as to what information is vital and what is not. The company does not know with certainty what information is vital or not. The customer might not communicate this information to the end-user. The company should force the customer to pass the information along to the end-user, within reason. The company is ultimately not responsible for the end-user. MSDS sheets may not provide all the information that is vital to the health and safety of the end-user. The company can dictate some things to the customer as a condition of sale.

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Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
3.4 allow new chemicals and chemical products into the member's distribution network only after all the preceding requirements have been met.	All chemicals and products are worthy of this attention. We do not distribute chemicals unless this is done.
4. Compliance with legal requirements	Compliance with distribution laws requires more emphasis than compliance with other laws.
Each member company shall have a program in place to:	
4.1 meet or exceed the letter and spirit of all legal requirements related to distribution of chemicals, chemical products, services and information:	*Repetition of phrasing used in General section of this Code, and:* Distribution of chemicals, chemical products and services is subject to (specific?) legal requirements.
4.2 communicate with its own and contract employees and ensure they are trained to understand and comply with all requirements of the law.	Employees and contractors might not understand the law. Employees and contractors might not comply with the law. We should train employees and contractors to understand and comply with the law. With training, employees and contractors will understand and comply with the law.
5. Participation-selected organizations, government bodies and communities	
Each member company should have a program to work actively with and assist selected organizations, government bodies and communities in establishing standards for continuously improving chemical distribution activities.	Some organizations are worthy of company assistance. The company can determine which organizations are worth assisting. Chemical distribution in Canada is inadequate and requires improvement. Chemical distribution cannot be perfected; it can be improved continuously. Standards improve chemical distribution. Companies should participate actively in developing standards.
Specifically each member should:	

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
5.1 choose the organization(s), association(s), and government(s) to which the member can advocate and speak on behalf of the CCPA "Responsible Care" policies;	The company can determine which organizations, associations, governments it should talk to. The company should advocate CCPA policies to "organizations, associations and governments." The company should advocate to "organizations, governments and associations."
5.2 interact with community groups to raise awareness of existing practices and planned improvements in chemical distribution activities which may not have been covered by the code of practice for CAER;	Community groups don't know enough about distribution practices. Community groups should know planned distribution improvements. Community groups care about chemical distribution.
5.3 inform and update member company and contract employees on chemical distribution standards and encourage them to speak out within their own communities to improve the perception of chemical distribution;	We should inform employees and contractors of chemical distribution standards. We should encourage employees and contractors to speak out so communities perceive distribution more favorably. Employees and contractors affect community perceptions. Employees and contractors want to improve the perception of chemical distribution. Distribution deserves more favorable perception than it has. The company should deliberately attempt to change the community's perceptions (directly, i.e. not via performance). The community is unaware of distribution standards. If the community knew our distribution standards, they would perceive distribution more favorably. The community's negative perceptions are aimed at "chemical distribution," not companies or the industry. Whether employees or contractors speak out in their communities is ultimately up to them. With encouragement, employees and contractors might speak to their communities when they wouldn't have otherwise.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
5.4 influence the establishment of chemical distribution public policies, standards and regulations that reflect changing environmental, community, governmental, industry and distribution activities, focusing on the preventative and the proactive, in consultation, if possible, with other affected stakeholders.	The company should influence public policies, standards and regulations. Current public policies, standards and regulations are outdated. Current public policies, standards and regulations are out of touch with current distribution activities. Public policies, standards and regulations should reflect current distribution activities. The company should consult other stakeholders if possible. Public policies, standards and regulations should focus on prevention and proaction. Prevention and proaction deserve special attention from governments.
6. Requirements pertaining to distributors and resellers	
Each member company, if it uses third parties for distribution, shall have a program to educate, assist and assess the distributors of the member company's chemicals, chemical products and services.	Distributors may not know as much about the company's chemicals, products or services as the company. Distributors should be educated about the company's chemicals. Distributors may need assistance. The company should assist distributors. Distributors may not do things the way the company would like. Companies should assess distributors.
The program shall:	
6.1 define a distributor policy which clearly establishes the minimum standards for the code as they apply to distributors:	Distributors must meet minimum Responsible Care standards. Minimum standards for distributors should be clearly defined. Minimum standards are different for distributors than for others. (i.e., Responsible Care applies unequally to different groups.)
6.2 exercise due diligence in:	The company must only go so far in ensuring Responsible Care from its distributors.
6.2.1 establishing criteria for the selection of distributors based on their capability to meet the distribution code of practice and other applicable "Responsible Care" codes;	The company knows what standards distributors must meet in order to be consistent with Responsible Care. The company can choose its distributors. The company can assess distributors' capabilities. Codes other than the Distribution Code apply to distributors.

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Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
6.2.2 assessing their performance as appropriate against the criteria;	The company can assess distributors' performance. The company can determine when assessment is "appropriate." The company should be left to determine what "appropriate" is.
6.2.3 taking any follow-up actions to cause the distributor to correct shortcomings including, if necessary, termination of supply;	The company can terminate supply. The company can pressure the distributor to change. The distributor can change. The distributor wants supply.
6.3 ensure that distributors understand the expectations of "Responsible Care", in its guiding principles and codes of practice;	Distributors might not understand the expectations of Responsible Care. There are clear expectations of Responsible Care. Companies can communicate the expectations of Responsible Care to distributors.
6.4 respond to requests for information and assistance from any point in the distribution chain concerning chemicals, chemical products and services supplied by the member company.	Questions can come from any point in the distribution chain. Companies should respond to questions. Companies know about their chemicals, products, services. Companies should assist any point in the distribution chain. Companies can assist people in the distribution chain. People in the distribution chain might not be able to handle the company's chemicals, products or services.
7. Requirements pertaining to suppliers	
Each member company shall have a program to educate, assist and assess suppliers of chemicals, chemical products and services.	Suppliers might not know about the chemicals, products and services they supply. Suppliers might need help regarding the chemicals, products or services they supply. Suppliers might not be up to scratch. The company should assess suppliers. The company can assess suppliers. The company can assist suppliers.
The program shall:	
7.1 define a supplier policy which clearly establishes the applicable areas of this code of practice, within Canada;	Suppliers within Canada are different than suppliers elsewhere. Suppliers outside Canada need not subscribe to this Code. Not all of this Code applies to suppliers in Canada.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
7.2 exercise due diligence in:	*Exact repetition of text used in section 6.2 of this Code.*
7.2.1 establishing criteria for the selection of suppliers based on their capability to meet the applicable areas of the distribution code of practice;	The company knows what standards suppliers must meet in order to be consistent with this Code. The company can choose its suppliers. The company can assess suppliers' capabilities.
7.2.2 assessing their performance as appropriate against the criteria;	The company can assess suppliers' performance. The company can determine when assessment is "appropriate." The company should be left to determine what "appropriate" is.
7.2.3 taking any follow-up actions to cause the supplier to correct shortcomings including, if necessary, termination of agreement to purchase .	The company can terminate purchase. The company can pressure suppliers to change. Suppliers can change. Suppliers want company business.
HAZARDOUS WASTE MANAGEMENT POLICY	
Members of The Canadian Chemical Producers' Association are committed to the responsible management of hazardous wastes in Canada in a way which must be environmentally acceptable.	We behave as an industry. Management of hazardous wastes can be responsible without being environmentally acceptable. We are responsible and environmentally acceptable.
The CCPA advocates waste reduction at source, followed by recycling, recovery, or reuse, as preferred options to disposal .	There is a hierarchy of waste management alternatives. Some processes are in principle superior to others, notwithstanding economics or technical considerations. Waste reduction at source is best. Recycling, recovery and reuse are equally preferable. Disposal is the least preferred option. Individual companies need not endorse this hierarchy.
Where this is not feasible destruction or treatment to render the material non-hazardous is recommended.	Making a material non-hazardous prior to disposal is preferred (if disposal is necessary). Feasibility is not determined industry-wide; the company can determine what is feasible and not.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
Where the hazard cannot be eliminated, the waste must be contained in a secure manner, and monitored, to ensure that it is not endangering the environment.	Materials that cannot be made non-hazardous pose ongoing dangers to the environment. Contained wastes must be monitored. Containment may not stay secure indefinitely.
Members of the CCPA will, at all times, cooperate with the appropriate government agencies to identify and resolved problems associated with waste sites to which they have contributed.	Old waste sites can have problems. Companies must help government agencies to deal with problems of old waste sites. Old waste site problems are primarily the responsibility of government agencies. Companies should cooperate with government agencies. Not all problems associated with old waste sites have been found yet. Finding problems associated with old waste sites is primarily up to government agencies.
HAZARDOUS WASTE MANAGEMENT CODE OF PRACTICE	
PURPOSE	
The member companies of The Canadian Chemical Producers' Association (CCPA) are committed as a condition of membership, to the policy of "Responsible Care".	*Exact repetition of text used in the Purpose of the Distribution Code.*
This code governs member company actions in meeting the guiding principles of that policy as they relate to the generation, handling and disposal of hazardous wastes, through all of the life cycle stages of research and development, manufacture, transportation, distribution and the end use and disposal of chemicals and chemical products.	Generation, handling and disposal of hazardous wastes are worthy of concern.
Hazardous waste management encompasses operations related to hazardous waste elimination, reduction, recycling, recovery and reuse;the handling, storage, transportation, treatment, destruction and disposal of hazardous wastes; and closure and care of disposal sites.	Eliminating hazardous waste is part of managing it. Transportation of hazardous waste is part of managing it. All the other activities listed are part of managing hazardous waste. Closure of hazardous waste disposal sites is worthy of concern. Disposal sites must be "cared" for.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
This code applies to company-owned treatment and disposal sites and public or private co-disposal sites used by member companies.	Disposal sites used or owned by others are just as worthy of attention as those owned and used by the company. Public disposal sites are just as worthy of attention as private sites. Treatment sites owned by the company are also worthy of attention. Treatment sites owned by others are not worthy of attention.
Practice of this code is intended to result in:	
• the protection of people and the environment through the responsible management of hazardous wastes and waste management facilities throughout the entire chemical and chemical product life cycle; reduction in the generation of wastes;	Hazardous wastes need to be managed. Hazardous waste management facilities need to be managed. Hazardous wastes need to be managed throughout a chemical or product's life cycle. Hazardous wastes can harm people and the environment. Reduction in the generation of all wastes (including non-hazardous wastes) is desirable.
• the assurance that the management systems necessary for responsible waste management operations are in place and are functioning effectively;	Waste management can only be responsible if management systems are used. Management systems don't always function effectively.
• public and employee confidence in the management of hazardous wastes as a result of the effectiveness of the above.	The public and employees become confident of hazardous waste management if it is managed responsibly using systems. Public confidence in hazardous waste management is desirable. Employee confidence in hazardous waste management is desirable. The CCPA has correctly determined what it will take to get public and employee confidence in hazardous waste management.
GUIDING PRINCIPLES	
The guiding principles of this code as they reflect those of the "Statement of Policy on Responsible Care" are:	
i) manage hazardous wastes in a manner which protects people and the environment from hazards;	*See Guiding Principles.*

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
ii) provide customers with information about the hazards and associated risks and sound management of hazardous wastes associated with chemicals and chemical products;	
iii) provide information about the hazards and associated risks of hazardous wastes and waste management operations to employees, contractors, other people on site and to those in the community who have an interest;	
iv) make Responsible Care an early and integral part of the planning of new or modified chemicals, chemical products, processes, equipment or facilities;	
v) apply this code to existing, modified and new chemicals, chemical products, process, equipment and facilities;	
vi) know the law and regulations concerning waste management, and meet or exceed them in letter and in spirit;	
vii) be sensitive and responsive to community concerns about wastes and their management;	
viii) work actively to assist governments in developing public policies, legislation and regulations governing waste management.	
CODE OF PRACTICE	
1. General	
Each member company shall have written hazardous waste management policies, standards and procedures which apply to all facilities through all life cycle stages of its products.	Writing down policies, standards and procedures makes hazardous waste management more responsible. Hazardous waste management is a concern at all facilities. Hazardous waste management is a concern for all life cycle stages.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
Responsibility shall be clearly defined for generating, implementing, auditing and updating them, and for taking corrective action.	Clear assignment of responsibility is important. Hazardous waste management policies, standards and procedures need to be audited. Hazardous waste management policies, standards and procedures should change over time. Corrective action is sometimes necessary. Someone should be clearly responsible for taking corrective action.
These policies, standards and procedures shall meet or exceed all applicable laws and regulations in letter and in spirit.	*Repetition of text used in the General section of the Transportation Code.*
Each member company shall classify and manage wastes in accordance with this code when, in the judgement of the member company, they should be considered hazardous even though not legally classified as such.	The company may judge different chemicals to be hazardous than the law. The company is to follow the more stringent of: its own judgement or the law's, with regard to what is hazardous. Companies know what should be considered hazardous. Companies have an acceptable definition of what is hazardous. The company may be stricter with itself than the law.
Each member company shall continually evaluate improvements in existing applied hazardous waste management technology and alternate disposal technology.	Applied hazardous waste management technology improves continuously. Companies can evaluate applied hazardous waste management technology. Alternative disposal technologies arise continuously. Companies can evaluate alternative disposal technologies.
Each member company shall participate in the development of improved hazardous waste management technologies and promote the establishment of hazardous waste treatment and disposal facilities.	Improving hazardous waste management technology is desirable. Companies can participate in improving hazardous waste management technology. Companies should participate in improving hazardous waste management technology. Hazardous waste treatment and disposal facilities are desirable. Companies can promote treatment and disposal facilities. Companies should promote treatment and disposal facilities.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
Each member company is encouraged to apply the intent of this code to the management of non-hazardous waste.	Companies know the "intent" of this Code. Non-hazardous waste is not as serious as hazardous waste. Companies should try to do for non-hazardous waste what they have to do for hazardous waste. Companies don't have to take non-hazardous waste as seriously as hazardous waste.
Each member company shall work actively, alone or through selected organizations, and, if possible, in consultation with other affected stakeholders, to assist governments in developing public policies, legislation and regulations governing waste management.	*Repetition of text used in the General section of the Transportation Code, and:* Public policies, legislation, and regulations could legitimately govern waste management.
If a company cannot bring about changes to its hazardous waste management practices to meet the requirements of this code, it shall discontinue operations which produce the hazardous wastes.	Hazardous waste management practices need to be changed. Not all hazardous waste management practices are up to the standards of this Code. Operations that produce hazardous waste that cannot be managed according to this Code are unnacceptable and discontinued.
2. Hazardous waste avoidance - material recovery	
The underlying principle of hazardous waste management is to avoid the generation of hazardous waste.	Avoidance of generation is best. This principle underlies management strategies.
Recovering the value of materials is preferred to their classification, treatment and disposal as wastes.	Materials have value that is lost but can be recovered. *The hazardous waste mangement hierarchy is addressed in the Hazardous Waste Management Policy.*
The hazardous waste management system shall:	
2.1 require consideration of hazardous waste management needs at the initial stages of product research and development or process design and/or modification (refer to the research and development code of practice);	*See Research and Development Code.*

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
2.2 continually identify waste sources, evaluate opportunities for hazardous waste elimination and reduction, and hazardous material recycle, recovery or re-use, and take appropriate implementation action.	Waste sources can change over time. The company should continually look for waste sources. Opportunities to eliminate, reduce, recycle, or reuse hazardous waste can become more or less attractive with time. The company should continually evaluate opportunities to eliminate, reduce, recycle or reuse hazardous waste.
3. Hazardous waste handling, treatment and disposal	
When hazardous waste avoidance is not practicable, treatment or destruction should be employed to render the remaining waste non-hazardous, as preferred options to disposal.	Sometimes hazardous waste cannot be practicably avoided. *The hazardous waste mangement hierarchy is addressed in the Hazardous Waste Management Policy.*
When the hazard cannot be eliminated, the hazardous waste shall be contained in a secure manner and monitored to protect people and the environment.	*The hazardous waste mangement hierarchy is addressed in the Hazardous Waste Management Policy.*
The hazardous waste management system shall:	
3.1 identify, classify and require maintenance of records of the hazardous wastes generated, including volumes, characteristics, method and location of their treatment and/or disposal;	Companies should keep records of the hazardous wastes they generate. Companies should know how much they generated. Companies should know where and how the wastes were treated or disposed of. Recovery, recycling or reuse activities need not be recorded.
3.2 require that all hazardous wastes are destroyed or otherwise treated and/ or disposed in a manner which protects people and the environment from hazards;	Destruction, treatment or disposal could create hazards to people or the environment. Destruction, treatment or disposal must be done protecting people and the environment. Companies can control the treatment, destruction or disposal of hazardous wastes.
3.3 reject as unacceptable, where commercially available means for treatment and/or disposal exist, dilution of hazardous wastes for the sole purpose of rendering them non-hazardous;	Dilution of hazardous wastes just to make them non-hazardous is unacceptable unless no commercial alternative exists. Dilution could be acceptable were there other reasons for doing it. Companies cannot provide treatment or disposal alternatives; they must rely on the market.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
3.4 reject as unacceptable the long-term storage of hazardous wastes where commercially available means for their treatment and/or disposal exist;	Long term storage is unacceptable if a commercially available alternative exists. Companies cannot provide treatment or disposal alternatives; they must rely on the market.
3.5 require that hazardous wastes which cannot be rendered non-hazardous, are contained in secure landfills or geological formations in a manner which protects people and the environment from hazards;	Landfills can be secure. Geological formations can be secure. Containment of hazardous wastes could create hazards to people or the environment. People and the environment must be protected from containment.
3.6 ensure that the design, construction, operation and closure of all hazardous waste treatment, handling and disposal facilities conforms to sections 2 through 4 of the manufacturing code of practice; criteria for post closure care shall include methods which consider future land use compatibility with the existence of any closed sites;	A hazardous waste treatment, handling or disposal facility is as worthy of concern as any other facility. Companies must consider land use after the closure of a site. Hazardous waste sites have finite lives. Land should be usable after a hazardous waste site has been there.
3.7 ensure that the transportation of hazardous wastes conforms with the requirements of the transportation code or practice;	*See Transportation Code.*
3.8 define criteria for the selection and use of hazardous waste management contractors and disposal facilities which are external to the company's operations and conduct periodic assessment;	Waste management contractors should be carefully selected. Companies can assess waste management contractors. Disposal facilities should be carefully selected. Companies can assess disposal facilities. Assessment must be repeated periodically.
3.9 require that waste management contractors, both within and outside Canada, have appropriate licenses and permits, and require, with due diligence, that they apply this code to their operations when handling member company wastes;	Waste management contractors should have permits. Companies must not do business with contractors that do not have permits. Permits are as required outside Canada as within. Waste management contractors should apply this Code to their operations. Companies must check that contractors are applying this code to their wastes. Companies are only required to go so far in checking contractors. Contractors can do what they want with others' wastes.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
3.10 maintain a hazard communication program which includes training for employees and any outside agencies or contractors involved in the management of company hazardous wastes;	Employees who manage hazardous wastes may need training and hazard information. Outside agencies or contractors who manage company wastes may need hazard information or training. Communication and training need to be maintained.
3.11 include a system for providing information and advice on acceptable hazardous waste management practices consistent with this code to customers and end-users of chemicals and chemical products;	Customers and end-users may need information and advice on hazardous waste management. The company can provide information and advice to customers and end-users. Provision of information and advice should be systematized.
3.12 advocate that all customers apply this code to their operations.	Customers don't have to abide by this Code. Some customers don't behave consistently with this Code. Companies should tell customers that they should follow this Code.
Each member shall require, with due diligence, that customers apply this code if special requirements are determined to apply to the management of hazardous wastes associated with the product;	In some special cases, the company must require customers to follow this Code for company products. Companies can determine which cases are special. Companies can only go so far in requiring customers to follow this Code.
3.13 require periodic assessment of hazardous waste management practices, procedures and facilities to confirm that they remain current and consistent with internal policies and standards and this code.	Hazardous waste management practices should be assessed periodically. Hazardous waste management practices change over time. Consistency with internal policies and standards is important.
4. Historical practices	
With respect to past hazardous waste management practices and the need to identify and evaluate all previously used disposal sites, member companies shall:	We need to identify all previously used disposal sites. Paste hazardous waste management practices were different than current practices.

Text of Responsible Care: A Total Commitment	Underlying Beliefs, Values, and Cultural Assumptions
4.1 develop and maintain records which identify, as completely as practicable, the nature and quantity of hazardous wastes sent to those sites;	Our involvement at previously used disposal sites should be characterized as completely as possible. We should develop records about our activities at previous sites. The nature of the waste we sent to previous sites is important. The quantitiy of wastes we sent to previous sites is important. Records should be as complete as practicable. Complete information may not be practicable.
4.2 conduct environmental studies to the extent practicable on each site;	Companies should study old sites. Companies may not be able to study each site completely. Companies should seek out new information about past activities.
4.3 notify appropriate regulatory agencies of any management information collected and the result of any environmental studies conducted;	The company should tell regulatory agencies what it knows about old sites. Once information is known, it should be shared. The company may know more than regulatory agencies do about old sites.
4.4 co-operate with appropriate government agencies in any required remediation activities.	Old sites may need remediation. Government agencies are responsible for remediation. Companies should cooperate with governments in remediation.

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