

ACKNOWLEDGMENTS

Chiefs of Ontario gratefully acknowledges the assistance of the following persons and groups in the preparation of this submission:

Akii Kwe, Bjekwanong First Nation
Dayle Bomberry, Director Public Works, Six Nations of the Grand River Territory
Barbara Fiddler, Band Administrator, Sandy Lake First Nation
Glenn Gilbert, DIAND, Ontario Region
Chief Ignace Gull, Attawapiskat First Nation
Mike Gull, Technical Services, Attawapiskat First Nation
Derek Hill, Technical Services, Attawapiskat First Nation
Carol Jacobs
Norman Jacobs
Kelvin Jamieson, P. Eng., Ogemawahj Tribal Council
Gregory Koostachin, Technical Services, Attawapiskat First Nation
Irving LeBlanc, Ontario First Nation Technical Services
Jack Mallard, Health Canada
Lillian McGregor, Elder
Deputy Chief Harry Meekis, Sandy Lake First Nation
Joe Meekis, Sandy Lake First Nation
Dale (Joe) Monague, Operator, Beausoleil First Nation
Rick Monague, Operator, Beausoleil First Nation
Chief Valerie Monague, Beausoleil First Nation
Derek Mosketaywenene, Operator, Sandy Lake First Nation
Deputy Chief Margaret Okimaw, Attawapiskat First Nation
Steve Whitaker
Ann Wilson, Elder

TABLE OF CONTENTS

	Page
Executive Summary	2
Preface.....	3
PART ONE	6
Chapter 1: An Introduction to Aboriginal Perspectives on Water	6
Executive Summary	6
The Concept of Aboriginal Knowledge	6
The “Methodology” of Aboriginal Knowledge	7
Aboriginal World View: A Context for Understanding the Importance of Water.....	8
Sharing Traditional Perspectives On Water: The Thanksgiving Address And Creation Stories.....	10
The Thanksgiving Address.....	10
Ceremonies and Symbolism.....	11
Protection of Water as Cultural Survival	13
Decolonization: Renewing Relationships with Water	14
The Importance of Aboriginal Knowledge for Seeking Solutions.....	16
“Working for Water”: Living Examples of Aboriginal Knowledge from Bkejwanong Territory	18
Akii Kwe: Anishnabe Women Who Speak for the Water	18
Nin.Da.Waab.Jig	20
Key Features of Aboriginal Perspectives on Water: Summary.....	21
Chapter 2: Jurisdiction Over First Nation Water-Works.....	24
Executive Summary	24
Laws Pertaining to First Nations: A Multiplicity of Jurisdictions	25
(a) Federal Jurisdiction	25
(b) Provincial Jurisdiction.....	25
(c) Aboriginal Rights and First Nation Jurisdiction	27
“Which Law Applies” to Water Works on Reserve?.....	28
(a) Aboriginal Rights Considerations	28
(b) Section 88 and “Indianness”	29
(c) Residual Significance of Provincial Law	35
(d) Fiduciary Responsibility	37

TABLE OF CONTENTS
(continued)

	Page
Chapter 3: A Comparison of the Federal/First Nation System of Water Treatment Regulation With Ontario’s MOE Regime	40
A Thumbnail Sketch of the Federal System.....	40
(a) Operation & Maintenance Funding.....	40
(b) Infrastructure	43
(c) Health Canada Role.....	48
How Does the Federal “System” Compare with the MOE Regime?.....	50
PART TWO:	54
Chapter 4: A Progress Report on Ameliorating First Nation Water Quality and Water Treatment Issues – 1995 to 2001	54
Executive Summary	54
(a) Acute Water Quality Problems	54
(b) Operations and Maintenance (O&M) Shortfalls	56
(c) Training of Operators	56
(d) Appropriate Plant Design	58
(e) Communication Within and Between Federal and First Nation Governments.....	59
(f) Applicable Water Quality Standards.....	60
(g) Knowledge and Understanding of Water Quality Issues Within Band Governance	61
Observations.....	62
Chapter 5: Case Studies	64
Executive Summary	64
CASE STUDY #1: ATTAWAPISKAT FIRST NATION	64
Size and Location of the First Nation	64
Water and Sewer Infrastructure.....	64
Operations	67
CASE STUDY #2: BEAUSOLEIL FIRST NATION	69
Size and Location of First Nation	69
Infrastructure	69
Operations	70
Views on Standards and Policies	72
CASE STUDY #3: SANDY LAKE FIRST NATION	74

TABLE OF CONTENTS
(continued)

	Page
Size and Location of First Nation	74
Water and Sewage Infrastructure	74
Operations	75
Views on Standards and Policies	77
CASE STUDY #4: SIX NATIONS OF THE GRAND RIVER TERRITORY	78
Size and Location of the First Nation	78
Infrastructure	78
Operations	80
Views on Standards and Policies	81
Chapter 6: Perspectives from Aboriginal Knowledge Holders.....	83
The Significance of Water.....	83
Respecting Water	84
Viewing the Ecosystem Holistically	85
Defining the Problem	85
Duties and Responsibilities	87
Seeking Solutions.....	87
Chapter 7: Findings and Recommendations	88
FINDINGS	88
RECOMMENDATIONS	89
BIBLIOGRAPHY	91
Appendix A – Haudenosaunee Thanksgiving Address.....	95

Drinking Water In Ontario First Nation Communities:
Present Challenges and Future Directions for On-Reserve Water
Treatment in the Province of Ontario

CHIEFS OF ONTARIO
Part II Submissions to the
Walkerton Inquiry Commission

Prepared by:

BLAKE CASSELS & GRAYDON LLP
Jonathan W. Kahn
Allison A. Thornton

With:

Derrick Kamanga, P. Eng,
3DN Engineering Services Ltd.

Michael Sherry
Barrister & Solicitor

Deborah McGregor, Ph. D

MARCH 25, 2001

Executive Summary

Like all communities, potable water is vital to daily life in the 134 First Nation communities of Ontario. Water is also spiritually significant to members of these communities and important to many cultural practices. Aboriginal knowledge, often overlooked as a science by the rest of the western world, continues to positively inform the attitudes and practices of Ontario First Peoples, including in their stewardship of the water resources they share with the rest of Ontario's residents.

Unfortunately, First Nation governments in Ontario face extraordinary challenges in delivering potable water to their residents, and the state of water treatment facilities serving First Nation communities is poor. Because water treatment regulation in First Nation communities is a matter of federal jurisdiction, First Nations are jurisdictionally isolated from efforts being undertaken elsewhere within the province of Ontario to improve water quality standards. By comparison with Ontario, the federal policies and programs which dictate service levels to First Nation communities are outdated and poorly co-ordinated. Budget and personnel cuts to the federal civil service have exacerbated the problems.

Since the early 1990's, the federal government has incrementally downloaded responsibility for operation and maintenance of water treatment on to local band councils. However the transfer of responsibility has not been accompanied by the transfer of adequate resources. In particular, the federal funding formulas for both capital construction and operation and maintenance of First Nation water treatment facilities are unrealistic and a practical barrier to the attainment of higher water quality standards. Isolated northern communities are in a particularly difficult position, as rigid operation and maintenance funding formulas fail to take into accounts the particular needs of these communities. There is a backlog of First Nation communities in need of new facilities.

However Parliament has a fiduciary responsibility, in its practices and policies affecting First Nations, both to build capacity for self-reliance within First Nation communities, and to consult

with First Nations on matters that affect vital parts of community life. In the context of policies relating to drinking water on reserve, this fiduciary responsibility requires that positive measures be taken, in full consultation with affected communities, to assist First Nation efforts attain and maintain a safe and reliable community water supply. Parliament does not fulfil its fiduciary responsibility when it takes unilateral steps to “download” responsibility for providing a vital service like drinking water on to band councils without assuring that the necessary resources to meet these responsibilities are also transferred to First Nations.

Change is clearly needed. The federal government’s policies need to be overhauled, more resources need to be dedicated to the goal of ensuring safe and reliable drinking water in First Nation communities, and First Nation people need to be permitted to meaningfully participate in the search for sustainable solutions in their communities.

Preface

***Report on the Royal Commission on Aboriginal Peoples, Summary of Recommendations –
“Water and Sewage Systems”¹***

3.4.4.

The Government of Canada provide additional resources for construction, upgrading and operation of water and sewage systems to ensure that adequate facilities and operating systems are in place in all First Nations within five years.

3.4.5

The Government of Canada provide funding and technical support for First Nations governments to operate and maintain community water and sewer systems and to establish technical support institutions as required.

In 1996, the *Report of the Royal Commission on Aboriginal Peoples* was published, providing a comprehensive set of recommendations prescribing new directions in Canada’s social policy as it related to First Nations. Among the many needed changes identified in the Royal Commission

Report was a need to ensure that adequate water and sewage systems were in place in Canada's First Nation communities.

The Royal Commission, in its report, set a five-year target for Canada to provide for the adequate water systems and technical support to First Nations which it found to be lacking in 1996. This time limit has now almost elapsed. The events in Walkerton in May of 2000 have recently reminded us of how vital the provision and maintenance of safe and adequate drinking water supplies can be. So how far has the Government of Canada come in meeting the objectives set out in the Royal Commission Report? Our study suggests that the answer to that question is "not very far at all".

In this paper, Chiefs of Ontario attempts to provide a theoretical, legal and technical overview of the water treatment issues facing Ontario First Nations. Our study can be roughly divided into three parts.

Part One of this paper provides a primer on the factors which influence the past, present and future of water treatment on reserve. It begins in Chapter One with a discussion of aboriginal knowledge of water, in order to impart a better understanding of the unique cultural perspective from which First Nations approach these issues. In Chapter Two, this paper explores the issue of legal control and constitutional authority to explain how an ill-defined blend of federal, provincial and First Nation jurisdiction blurs the questions of what standards apply on reserve and on who is ultimately responsible for ensuring that they are met. In Chapter Three, the actual delivery mechanism and standards that are applied to water treatment infrastructure for First Nation communities are explored in more detail, and are compared to the mechanisms in place for non-First Nation water systems in the rest of Ontario.

Part Two of this paper looks at information available as to the current state of drinking water in First Nation communities. In Chapter Four, the study compares and contrasts the 1995 report by

¹ Canada, *Royal Commission on Aboriginal Peoples* (Ottawa: Public Works and Government Services, 1996),

Health Canada and the Department of Indian Affairs and Northern Development (“DIAND”),² which formed the basis of the Royal Commission’s recommendations,³ with an ongoing study of current issues and concerns in water treatment on reserves by the Ontario Region of DIAND.⁴ This broad overview will be followed, in Chapter Five, by case studies of four First Nation communities in Ontario, relaying their experiences, problems and perspectives on water, and in Chapter 6 by accounts of water gathered through interviews of aboriginal knowledge holders.

Finally, in the final Part and chapter of this paper we will summarize the problems of First Nation water systems, suggest their causes, and make recommendations about how the Royal Commission’s promise of better water for First Nation communities in this province might finally be met.

Volume 5: “Renewal: A Twenty-Year Commitment”, Appendix A: “Summary of Recommendations” at 217.

² *Community Drinking Water and Sewage Treatment in First Nation Communities* (Ottawa: Ministry of Public Works and Government Services, 1995)

³ The study was explicitly cited by the Royal Commission in Volume 3: Gathering Strength at 379, under the heading “Community Services: A Health Hazard”.

⁴ *Water Quality Issues in First Nation Communities in Ontario: Draft Report, July 31, 2000* (DIAND Funding Services, Ontario Region, unpublished); *Water Quality Issues in First Nation Communities in Ontario: Phase I Report* (DIAND Funding Services, Ontario Region, October 25, 2000, unpublished draft); *Water Quality Issues in First Nation Communities in Ontario: Short Term and Medium Term Task Team Reports* (DIAND Funding Services, Ontario Region, December 2000/January 2001, unpublished draft).

PART ONE

Chapter 1: An Introduction to Aboriginal Perspectives on Water

Executive Summary

Before addressing the technical and legal problems with First Nation water systems, it is important to explain what water means to Aboriginal people in Ontario in terms of cultural beliefs and practices. Water has a significant and unique meaning to First Nations in both historical *and contemporary* times. This special meaning, sometimes termed “aboriginal knowledge”, is key to understanding how many First Nation people approach the “issue” of clean and potable water.

The Concept of Aboriginal Knowledge

Aboriginal knowledge, like any other kind of knowledge, is dynamic. It continuously adapts contemporary situations and incorporates aspects of knowledge learned from other nations. Not all people of Aboriginal descent today necessarily have what may be considered Aboriginal knowledge, but the vast majority continue to possess certain aspects of it. Elders, spiritual leaders/healers, medicine people, hunters, trappers, fishermen, and gatherers retain a great deal of this knowledge. Aboriginal knowledge is based on ancient philosophies, the principles of which are used to determine which new information might appropriately be incorporated.

Although Aboriginal knowledge is certainly not purely historical, it remains difficult (and frequently impossible) to translate it into language that makes sense to non-Native recipients while retaining its original meaning. Accordingly, while the information in this chapter is presented as straightforwardly as possible, we acknowledge from the outset that it will not convey all of the meaning that was originally intended. Nevertheless, it is hoped that through the accounts of aboriginal knowledge in this submission, the reader will come away with a sense of the differences between Aboriginal perspectives and their own.

One of the reasons that Aboriginal views on water are challenging to express in Western terms is that Western scientific approaches require that water be considered largely as separate from other

aspects of the environment. In attempting to express the meaning of water as a discrete concept, we risk obscuring the meaning that is associated with water in traditional Aboriginal philosophies. For many Aboriginal people and their ways of life, water offers “life-giving” forces, accompanied by certain duties and responsibilities, none of which can be adequately expressed in a convenient package for the consumption of non-Native society.

In any discussion of Aboriginal knowledge, it is important to remember that such knowledge is holistic. Holders of this knowledge therefore struggle to discuss one discrete aspect of the environment. It is inherently understood by keepers of this knowledge that all of Creation is interconnected and interdependent, and to separate out single components is to fragment and lose the meaning of both the whole and its components. In order to discuss one aspect of the environment, as has been requested in the case of this project, the thinking and meaning of the knowledge holders is inescapably altered. This submission therefore represents but one “construction” of Aboriginal knowledge and experience in relation to water. It cannot be said to be comprehensive or universal in any way. What this chapter aims to communicate is merely a “sense” of what water means to Aboriginal people in Ontario.

That sense is reflected in the Haudenosaunee Thanksgiving Address which is reproduced in full in Appendix A of this study, and which will be referred to extensively throughout this chapter.

The “Methodology” of Aboriginal Knowledge

Aboriginal perspectives on water cannot be fully communicated through writing. While some excellent work has been published and is discussed in this chapter, Aboriginal knowledge is a living discipline and to have a sense of its meaning, one must go not just to the published Aboriginal knowledge “scholars”, but to Aboriginal knowledge holders themselves. These knowledge holders tend, by and large, to be Elders or “traditional” people. Elders do not tend to publish their perspectives, and are not viewed by non-Native society as experts or scientists. When they are invited to participate in environmental fora, their views tend to be dismissed as “unscientific”. From an Aboriginal point of view, however, Elders *are* scientists and are regarded as experts.

For this very reason, in addition to the overview provided in this chapter through a literature review, a later chapter of this paper includes Aboriginal perspectives on water, as communicated in by ten individuals who were identified as being knowledgeable regarding Aboriginal perspectives on water. Their first hand accounts are deliberately presented in a loosely edited form alongside with the “technical” discussion of the issues and concerns facing First Nation communities in Ontario rather than in this introductory chapter, as they are an integral part of the evidence gathered on the state of water in aboriginal communities.

Aboriginal World View: A Context for Understanding the Importance of Water

From the past and from our ancestors we have inherited a language harmonious to the ear, ceremonies edifying to attend, and traditions to be observed and continued. We are heirs to understandings and to insights into life and the nature of things. We have derived wisdom from the elders to guide us in the conduct of our affairs. Our legacy is indeed great. Let us never forget our debt to our ancestors. And let us always remember our duty to our children.⁵

For thousands of years, Aboriginal people have created and passed on knowledge resulting in sustainable relationships with all of Creation. The above quote is a reminder that this knowledge is a legacy, which each generation should pass on to the next. In keeping with this legacy, many First Nations, having suffered the oppressive forces of colonization, are now revitalizing their customs, values and knowledge so as to re-establish a relationship with Creation based on their own traditions. This process forms an important part of the day-to-day as well as the political lives of First Nations peoples and their communities throughout Ontario.

In keeping with many Aboriginal philosophies and world views, Aboriginal people are frequently willing to share their knowledge (in this case, regarding water) in order to help people understand the importance of the environment as well as what needs to be done to ensure it can continue to provide the life-giving properties given it by the Creator. First Nations maintain unique perspectives on, and relationships with, water. These should be drawn upon in order to provide insight into ongoing discussions.

⁵ B. Johnston, *Ojibway Ceremonies*. (Lincoln, NK.: University of Nebraska Press, 1982) at 167.

Aboriginal people have their own history, their own cultures. They have retained values, traditions and knowledge that are integral to living in harmony with nature and the natural world, which encompasses Earth, Water, Air and Fire.⁶

Indigenous people have long recognized the degradation of water which has occurred as part of the centuries of colonization in North America. Indigenous people are often the first to take notice of such damage, as they are the first to suffer the negative impacts due to their close relationship with the natural environment. Among Aboriginal people, such impacts have often been noticed first by women, as they are most frequently responsible for the care of children and the elderly. Women, children (especially babies) and the elderly are the most vulnerable members of a population itself particularly vulnerable to environmental contaminants in water. Women play an important cultural role in caring for water within Aboriginal society.

Water quality is not just an “environmental” or ecological issue from an Aboriginal perspective. One of the main features of Aboriginal knowledge, based on thousands of years of living sustainably with Creation, is its holism: the recognition that all aspects of Creation are inter-related. Thus, degradation of water quality directly impacts the people, with the effects permeating every aspect of their lives. It threatens their very survival as people. Aboriginal land use activities and ways of life are still very much a part of First Nations peoples’ lives today. Such ways of life and the values they support depend heavily upon healthy ecosystems, including clean water. It has been shown time and time again in the history of Aboriginal/non-Aboriginal relations in Canada that environmental destruction (of forests, lands, animals, waters) threatens the very existence of First Nations peoples. Water quality, then, is not just an environmental concern, it is a matter of cultural survival.

The influence of water is far reaching in cultural and spiritual ways in the lives of Aboriginal people. It plays an integral part in re-building our Nations; it is a key component of the healing journey that is integral to our spiritual, cultural, emotional, intellectual and physical well being.

⁶ D. Jacobs. “Bkejwanong - The Place Where the Waters Divide: A Perspective on Earth, Water, Air and Fire” In: McNab, D. (ed.). *Earth, Water, Air and Fire: Studies in Canadian Ethnohistory*. (Waterloo, ON.: Wilfrid Laurier University Press, 1998) at 17.

Water is just not for drinking, but also provides a source of inspiration for continuity. It links people today with their ancestors, as described below:

Our Dene Nation is like this great river. It has been flowing before any of us can remember. We take our strength and our wisdom and our ways from the flow and direction that has been established for us by our ancestors we never knew, ancestors of a thousand years ago. Their wisdom flows through us to our children and grandchildren to generations we will never know. We will live out our lives as we must and we will die in peace because we will know that our people and this river will flow on after us.⁷

Not only does water, in the form of a river, provide peace, it also contains knowledge that will be passed on.

[Sharing Traditional Perspectives On Water: The Thanksgiving Address And Creation Stories](#)

The Thanksgiving Address⁸

Spirituality is a core component of Aboriginal world view. When Aboriginal people speak of water, they also speak of its spirit. In Haudenosaunee teachings, the ability of water to fulfil its duty is acknowledged as part of Haudenosaunee spirituality. Spirit is part of everything (all of Creation). Water has spirit, and that too must be honoured and nurtured along with everything else in order to main balance and harmony, to keep things sustainable.

“...our Creator made the rivers, not just as H₂O, but he made the rivers a living entity.”⁹

The significance of water is beautifully expressed in the Haudenosaunee Thanksgiving Address. The book, “Words That Come Before All Else: Environmental Philosophies of the Haundenosaunee” devotes a chapter to water and its role in the Thanksgiving Address. In this chapter, James Ransom of Akwesasne explains:

⁷ F. T'Seleie, “Statement to the Mackenzie Valley Pipeline Inquiry” **In:** Watkins, M. (ed.), *Dene Nation - the colony within* (Toronto: University of Toronto Press, 1977) at 16-17.

⁸ See Appendix A where the address is reproduced in its entirety.

⁹ Ransom, J., “The Waters” **In:** Haudenosaunee Environmental Task Force, *Words That Come Before All Else: Environmental Philosophies of the Haudenosaunee* (Cornwall Island, ON.: Native North American Travelling College, 1999) at 25.

In our Thanksgiving Address, we give thanks to the Waters of the World for fulfilling their responsibilities given by the Creator. These responsibilities are many. Central to them is to quench the thirst of all life. This is perhaps best captured in the works of Sakokweniokewas, a respected Mohawk elder, as he states “Our Creator made those rivers and lakes and he said whenever you’re dry and thirsty, go there, any river, any stream, and it will quench your thirst, for that is way I make the world.”

However, the responsibilities of the Waters are much more than this. We say that the Waters are the bloodlines of our Mother Earth. As such, they have important responsibilities to carry sustenance to the rest of Creation. We know how important water is to our gardens, to the plant life that needs a constant source of water to grow.

The Waters also have a responsibility to cleanse and purify Mother Earth. In the Spring, we hold the Thunder Ceremony to welcome the Thunderers for bringing the waters, in the form of rain, to wash away the dirt and grime that have accumulated over the winter. As human beings, we know that it is important for our personal cleanliness to bathe ourselves so that we do not get sick.

Finally, the Thanksgiving Address reminds us that it is our responsibility to take care of all life, including the waters. We recognize that all life is interrelated. If the Waters are to fulfil their responsibilities, then we must ensure that they have the opportunity to do so. This is what is meant by us keeping them clean so that a heart attack does not one day come to our Mother Earth. If our blood becomes contaminated, it will spread throughout our bodies and reach our heart, killing us. We must view the Waters of the world the same way and ensure the health of our Mother Earth.¹⁰

In Akwesasne, the Environment Department and the Haudenosaunee Environmental Task Force utilize the Thanksgiving Address as the framework from which to conduct their work. The Thanksgiving Address is a reminder that our relationship with Creation is holistic and that everything is related to everything else. The address reminds us also that we, like the rest of Creation, have duties and responsibilities to fulfil in order for Creation to flourish.

Ceremonies and Symbolism

Water plays an important part in the spiritual life of the Anishnabe people. It is an integral part of many ceremonies held to show respect for water and to assist with its life-giving force. These ceremonies are conducted as one way to maintain, and remind the people of, their intimate connection with water. For example, Anderson writes that, “So many of our ceremonies include

¹⁰ *Id.* at 26-27.

fire and water, and in these ceremonies we usually require men to tend the fire and women to keep the water.”¹¹ Akii Kwe, a group of Anishnabe women from Bkejwanong Territory working for cleaner water write in their submission on water quality:

We use sacred water in our Purification Lodge, in ceremonies of healing, rites of passage, naming ceremonies and especially in women’s ceremonies. At these times, the teachings are spoken to the water and then it is passed around from one to another in the circle to be shared.

At the change of seasons, a pilgrimage to the water is carried out in order to honour the Spirit of the Water. Our people have always understood that this sacred and power water gives life, and can take it away¹²

In another example, the waterdrum represents a profound gift given spiritually to the people to act as a teacher, reminder and transmitter of knowledge required to live in peace and harmony with all of Creation. Part of the waterdrum is filled with water, which represents, “...the life blood of Mother Earth, the blood that flows through her....This water represents the life-giving force of Mother Earth that purifies and gives life to our bodies as well”.¹³

According to the Haudenosaunee, dances and ceremonies were given to the people to “pay respect to life and beings that they live with and the things that keep life going”. The ceremonies were adapted to the cycle of the seasons. “The Thunder Dance will help us honor the water life”.¹⁴ The Thunderers play an integral role in renewal of Mother Earth, as explained by Jacobs:

One duty of the Thunderers is to continue to make fresh water or bring the rain, which replenishes or renews the water supply, the wells, lakes, and streams for the inhabitants of the earth. Another duty is to water what the Creator has planted on our Mother Earth, so that these plants and the gardens of the people may grow well. To wash the Earth and all that are present at certain periods of time is a duty as well.¹⁵

¹¹ Anderson, *supra* at 125.

¹² Akii Kwe. *Minobimaatisiwin - We Are to Care for Her. Position Paper from Women of Bkejwanong* (Walpole Isl.: Walpole Island First Nation, 1998) at 3.

¹³ Benton-Benai, *supra* at 70.

¹⁴ M. Mitchell, “Creation Story” **In:** North American Indian Travelling College, *Traditional Teachings* (Cornwall Island, ON.: North American Indian Travelling College, 1984) at 24.

¹⁵ J. Jacobs, “The Thunderers” **In:** Haudenosaunee Environmental Task Force, *Words That Come Before All Else: Environmental Philosophies of the Haudenosaunee*. (Cornwall Island, ON.: Native North American Travelling College, 1999) at 137.

In the Anishnabe tradition, water is one of the four elements made by the Creator. The rest of Creation is derived from these four elements:

Out of nothing he made rock, water, fire, and wind. Into each one he breathed the breath of life. On each he bestowed with his breath a different essence and nature. Each substance had its own power which became its soul-spirit. From these four substances Kitche Manitou created the physical world of sun, stars, moon and earth.¹⁶

The four elements are integral to our survival as people, and are the key features of “place” with which Native people so strongly identify. Dean Jacobs of Bkejwanong writes, “Place is not only important, it is all-encompassing. It is Earth, Water, Air and Fire. It is something to be respected and honoured. For without these elements we will weaken and then die culturally and physically.”¹⁷

Water, as an essential substance in Creation, has unique power and spirit. It must be respected.

Protection of Water as Cultural Survival

Ongoing controversies over such matters as bulk water exports indicate the commodity view of water held by western society. This is in direct contrast to Native views, where owning water is seen as no more feasible or appropriate than owning air. Among Native peoples, water is recognized as the lifeblood of the Earth (a living and conscious being). In turn, water is therefore the lifeblood of the people in numerous ways (physically, mentally/intellectually, spiritually and emotionally). Water is integrally tied to the cultural survival of the people. First Nation activists who have formed alliances to advocate and “speak for the water” are at the same time resisting the genocide of their people.

Spiritual aspects are frequently central to such activities. In many First Nations communities in Ontario which are concerned and active in speaking for the water, spirituality often guides the discussion. As part of the larger process of revitalizing culture and moving along the healing

¹⁶ B Johnston, *Ojibway Heritage: The ceremonies, rituals, songs, dances, prayers and legends of the Ojibway*. (Toronto: McClelland and Stewart, 1975) at 12.

path, holder of traditional knowledge such as Elders play a vital role. The Native women's group, Aki Kwe, consults and works with Elders in their work to protect the water. They are guided by their spirituality and the responsibilities that come with it. Similarly, the Mohawks of Akwesasne's Environment Program embodies the principles of the Thanksgiving Address to guide its work. Rainy River First Nation's Watershed Program involves Elders in their everyday work to conserve and protect the watersheds. Bkejwanong First Nation also works closely with Elders and their knowledge base to guide its work, particularly in relation to water.

As the protection of water quality is directly related to cultural survival, it is therefore also entirely related to Aboriginal and treaty rights. Aboriginal people have sought since contact to protect waters, as they were viewed as essential to the well being of the people. While the details of this topic are beyond the scope of this paper, discussion of Aboriginal and treaty rights in relation to water quality issues and hydro-electric development can be found in Delisle and Bouchard (1990), Fixico (1998), McNab (1998), and Waldram (1988). As well, water quality in relation to water's cultural and spiritual significance and Aboriginal treaty rights is considered in Jacobs (1998) and McNab (1998).

[Decolonization: Renewing Relationships with Water](#)

The history of Aboriginal/non-Aboriginal relations in Canada is complex and dynamic. It is a history fraught with environmental injustice, broken treaties, relocations and severe oppression. Most of it has been a relationship of dominance, the result being the dispossession of Aboriginal people of their territories and an attack on their culture and spirituality. Government initiatives such as residential schools, legislation (e.g. the *Indian Act*) and policies of civilization and assimilation have had tremendous genocidal impacts on Aboriginal Nations. The recent Royal Commission on Aboriginal Peoples recognizes that this approach to Aboriginal/non-Aboriginal relations is wrong. A new Aboriginal policy: *Gathering Strength: An Aboriginal Action Plan*, based on strengthening Aboriginal traditions and systems of governance, promotes relationships based on partnership rather than domination (DIAND 1997).

¹⁷ *Supra* at 13.

The historical injustices that Aboriginal people have faced have had devastating impacts on the people and the environment. In some First Nations communities, Akwesasne being one, severing ties with the water source (in this case the St. Lawrence River) has represented the single most harmful event in the history of the community.¹⁸ Another community where this has been the case is Grassy Narrows First Nation, with the contamination of the Wabigon River due to pulp and paper mill effluent. As we are driven from the river, our values, relationships, and responsibilities are lost.¹⁹

Despite this, Aboriginal people have continued to survive and resist and thus their knowledge has remained alive. Many First Nations communities are in the process of revitalizing traditions that have lain dormant through difficult times. Many individuals and communities have begun moving along a healing path. Part of this revitalization and rebuilding of Nations based on traditional philosophies is expressed through First Nations who continue to speak for the water.

Aboriginal peoples are healing as a way to recover from the onslaught of colonization.²⁰ This healing deals with the re-establishment of positive relations with all of Creation, not just reconciliation between Nations. In this sense, restoration of the water's ability to fulfill its duties is directly related to Aboriginal self-determination.

The fundamental nature of such relationships and responsibilities is alluded to by the following statement from the Assembly of First Nations:

We, the original Peoples of this land, know the Creator put us here. The Creator gave us laws that govern all our relationships to live in harmony with nature and

¹⁸ J. Ransom, "Building New Partnerships Between Canadians and First Nations Societies to Achieve a Sustainable Seventh Generation for All Peoples" In: Shrubsole, D., and Mitchell, B. (eds.), *Practising Sustainable Water Management: Canadian and International Experiences* (Ottawa: Canadian Water Resources Association, 1999) at 39.

¹⁹ *Id* at 40.

²⁰ For further discussion, see: G. Cajete, *Igniting the Sparkle: An Indigenous Science Education Model*. (Skyand, NC.: Kivaki Press, 1999); O. Mercredi, and M. Turpel,, *In the Rapids: Navigating the Future of First Nations* (Toronto: Penguin Books, 1993); R. Ross, *Returning to the Teachings: Exploring Aboriginal Justice* (Toronto: Penguin Books, 1999).

mankind. The laws of the Creator defined our rights and responsibilities. The Creator gave us our spiritual beliefs, our languages, our culture and a place on Mother Earth which provides us with all our needs. We have maintained our freedom, our languages, and our traditions from time immemorial. We continue to exercise the rights and fulfil the responsibilities and obligations given to us by the Creator for the land upon which we are placed. The Creator has given us the right to govern ourselves and the right to self-determination. The rights given to us by the Creator cannot be altered or taken away by any other Nation.²¹

According to James Ransom in a personal interview conducted for this project, it is critical for non-Native society to recognize that Aboriginal people have laws (natural laws) and are law abiding people. Despite the attempts of colonization to sever Aboriginal ties to the land, Indigenous people across Canada continue to adhere to these laws.

In his writings on the subject,²² Ransom describes two programs in particular, the Presence/Absence Water Monitoring Program and the Circuit Rider Training Program, which highlight the efforts of First Nations to overcome the effects of colonization and continue to fulfil their responsibilities towards water. Both examples involve protecting the water from contamination, which in turn protects the health of the people.

They are discussed in more detail in Chapter 4.

The Importance of Aboriginal Knowledge for Seeking Solutions

Water is key to the continuation of Aboriginal ways of life. There is a fundamental reliance upon a healthy environment. This is a highly important value to Aboriginal people. First Nations people also think of future generations. It is an enormous responsibility to provide clean air, water, land and food for babies and those yet to come.

In the past we did not have the pollution that we are faced with now. These things have impacted the quality of the water. We have to learn how to respect the water again. We have to turn to our traditions to guide us. Our traditions tell us what is important, and why and how to

²¹ Assembly of First Nations (AFN). *Reclaiming Our Nationhood: Strengthening Our Heritage. Report to the Royal Commission on Aboriginal Peoples* (Ottawa: AFN, 1993) at i.

take care of the water. In the Haudenosaunee culture, the Thanksgiving Address reminds us to give thanks for all elements of Creation. It reminds us to “bring our minds together” about a particular issue or concern. While we are here we will be of one mind. We all should agree that water is important and then seek ways of treating it properly so as to restore it to health.

In the Thanksgiving Address, the Thunderers bring water to replenish the Earth. The Address specifically acknowledges this role. We had a positive, thankful, reciprocal relationship with water; if we took care of water, it would take care of us. This philosophy has not failed us. It is only since contact that we have had problems with water quality.

First Nation views are holistic and can sometimes be very frustrating for non-Native people to appreciate or understand. For example, from a non-Native perspective, the Thanksgiving Address can be very long. All aspects of Creation are acknowledged. When the Address refers to water, all forms of water are mentioned, including rain, lakes, rivers, wells, puddles, swamps, etc. In the long version of the Address, one can spend 2-3 hours on water alone. The Address also pays very specific attention to the interrelationships of all aspects of Creation. All aspects are required for a balanced and sustainable environment.

Aboriginal knowledge comes with its own processes, protocols and procedures. There is no quick and ready answer for the problems that we face, especially with water. The other aspects of Creation must be considered as well, including the role that people have played in the current water crisis. To seek solutions we must turn to the traditions and knowledge that did not fail us for thousands of years. We face new challenges; however, the traditions are still as viable as they have always been.

Turning to our traditions requires that we understand who we are, including our duties and responsibilities, our relationships with each other (as peoples and Nations) and our relationships with Creation. In Haudenosaunee tradition, this means referring to the Belts (Wampum and

²² Ransom, J. “Building New Partnerships Between Canadians and First Nations Societies to Achieve a Sustainable Seventh Generation for All Peoples” **In:** Shrubsole, D., and Mitchell, B. (eds.), *Practising Sustainable Water Management: Canadian and International Experiences* (Ottawa: Canadian Water Resources Association, 1997).

Friendship), the Four Ceremonies, The Great Law, and the Code of Handsome Lake. There is much to draw on, but these things take time. By relying on our traditions, we should be able to find the answer to just about any challenge we face. But we need to be patient and pay attention to process.

We have to be mindful of the tendency to look for quick answers and solutions. Many times, First Nation people are asked a question and a quick response is expected. This is unreasonable, as First Nations are bound to respect both their traditions *and* the decision making processes that come with them.

“Working for Water”: Living Examples of Aboriginal Knowledge from Bkejwanong Territory

Akii Kwe: Anishnabe Women Who Speak for the Water

Below are paraphrased the words of Akii Kwe members as expressed during an Akii Kwe meeting held December 4, 2000. Additional information was taken from an Akii Kwe position paper.²³

For many years, indigenous women have noticed changes in water quality, particularly because they have a close and special relationship to the water. It is part of the Anishnabe Kwe tradition that women speak for the water. In the process of rediscovery, revitalization and healing, the Anishnabe Kwe of Bkejwanong Territory have organized themselves to speak for the water. In a 1998 submission on water quality issues, Akii Kwe members stated that in Bkejwanong, nature provides the foundation of the Anishnabe culture and the ways in which the people conduct themselves (systems of governance). As part of this, the people have a responsibility to act on behalf of the water.

Akii Kwe is an informally organized grassroots group of women speaking only from what they know. They began by protesting what was happening to the water, in particular by responding to Imperial Chemical Industries' indication that they wanted to dump more pollution into the waters

flowing around Bkejwanong Territory. The women decided to speak for the water and try to stop such an action.

Akii Kwe members have, over the years, observed birth defects and other changes in animals. One particular example was that the meat of the snapping turtle began to turn yellow. Such changes in the environment (food chain) were attributed by the women to problems with the water, and yet they were told that the level of contamination was “acceptable.” The women know this not to be true. The water is not okay and what is happening to the water is not okay. What is happening to the whole environment is not okay.

There are also health impacts on people when the water is contaminated. The primary purpose of the EAGLE project, for example, was to gain an understanding the relationship between contaminants in water and the health of Aboriginal people. Industrial water pollution in Bkejwanong Territory is causing internal damage to its people. The Akii Kwe response is the following:

Water is continuously being poisoned. For us to do our work as Anishnabek women, we must oppose this and conduct this work from a spiritual plane. We rely on our teachings to guide us through our work, and the Elders and ceremonies help us. The women state that it is our responsibility to do so. We are simply fulfilling our roles as women and as members of our clan. In our teachings, all clans have a responsibility for the water. They are interconnected; no one single clan has primary responsibility. We all work together to care for the water.

Akii Kwe members see their strength as lying in their spirituality. Western science does not have this in its methods. When the women focus on the spiritual plane, they are not bogged down with bureaucracy. They do not need “permission” to do what they know is right. Their approach is holistic, and considers emotional, physical, intellectual and spiritual aspects.

²³ Akii Kwe, *supra*.

Akii Kwe members see their work as having a nature similar to that of water, in that their work makes waves which ripple out to other communities. Their spiritually driven work is making an impact.

Nin.Da.Waab.Jig

In addition to the efforts of Akii Kwe, Bkejwanong (Walpole Island) First Nation in southwestern Ontario has undertaken numerous other projects, having established years ago a highly pro-active stance regarding environmental sustainability in their community. Issues such as land claims, Aboriginal rights and governance are all addressed based on the recognition of their spiritual relationship to environment. Dean Jacobs, Director of the Environment, Nin.Da.Waab.Jig, writes that, “Today our lands and waters still remain intact and unceded. To us they are sacred. They are our spiritual Mother. They remain a place of Fire. We are spiritual beings. As such, our sources of life are all around us - the four elements of Earth, Water, Air and Fire”.²⁴

He continues that:

The citizens of the Walpole Island First Nation, also known as the Council of Three Fires, the Ojibwa, Potawatomi and Ottawa Nations, have protected and conserved Bkejwanong since time immemorial. This is understood, and told, from the perspective of the First Nation, by our Elders. They tell us who we are and, in spiritual terms, what the land means to our people. We have used our lands and waters...for thousands of years. Our people and our land will continue for thousands of years. The primary objective of the Walpole Island First Nation is spiritual - to protect the land - our Mother Earth.²⁵

According to Jacobs, the lands and waters of Bkejwanong have been “under siege” for some time. The number of chemical spills from the upstream refining region has been recorded by the Ontario Ministry of the Environment as averaging about 100 per year since 1986, though this is now slowly beginning to decline. Ocean-going freighters passing the reserve bring zebra

²⁴ D. Jacobs, *supra* at 12.

²⁵ *Id.* at 13.

mussels and the potential for huge tanker spills. Pesticides and fertilizers from agricultural run-off, as well as contaminants stirred up by nearby dredging operations, add to the total pollution.²⁶

Such activity has rendered the water undrinkable and the beaches frequently off-limits. Yet, as Jacobs points out, the people of Bkejwanong remain committed to their views and to their lands:

The beauty as well as the spirit of Bkejwanong are found in our natural resources and in us. Clearly, our First Nation faces a great deal of stress. Yet our everyday life continues. The people of Walpole Island view our lives in a spiritual, holistic and dynamic way. We have a keen sense of place and community that is perhaps unrivalled in this part of the country. Our Homeland is all we have ever known. It is important for all of us to understand how this fits into our perspective and scheme of life.²⁷

The people of Walpole Island thus rely upon their Elders and their knowledge to guide their actions and to ensure their continued survival, despite the onslaught from external forces.

[Key Features of Aboriginal Perspectives on Water: Summary](#)

A dynamic and contemporary system of knowledge:

Aboriginal knowledge regarding water and all other issues continues to adapt and evolve to changing circumstances. Most Aboriginal people today still retain Aboriginal knowledge to varying degrees. It is an ancient yet living knowledge of significant meaning to contemporary Aboriginal people. It's potential for aiding in finding solutions to current environmental crises is great.

A fundamentally holistic viewpoint:

Water is seen as a vital and integral part of the larger environment. It cannot be separated out from other environmental components and still be discussed meaningfully. All components are interconnected and changes in one affect all the others.

²⁶ *Id.* at 16-17.

²⁷ *Id.* at 17.

A recognition of water's role in supporting physical, emotional, cultural, and spiritual life:

Aside from providing physical sustenance and medicinal value to our bodies, water is critical for the emotional and spiritual health of Aboriginal people, both individually and culturally. This importance includes the symbolic role played by water in instances such as the Creation stories.

A sense that water is life:

More than just supporting life, many Aboriginal people express the idea that water IS life. Water is the first environment for new life within a woman's body, and it continues to be a crucial component of all later stages of life. Without water, life does not exist. The recognition of women's role in creating life along with water means that women and water are closely associated in Aboriginal culture.

The knowledge that water is the blood of Mother Earth:

Water (as well as rocks, the wind, and all other components of the Earth, including Earth itself) is considered a living entity. Water has just as much right to live as we do. One of the many roles of water is to bring nutrients to the body of the Earth (the land) as it flows through the Earth's blood vessels (waterways).

A highly sensitized awareness to changes in water quality:

Aboriginal people, especially women, children, and the elderly, are particularly vulnerable to the effects of water quality degradation by virtue of their intimate relationships with water and the rest of the environment. Many First Nations, for example, rely heavily upon their local lakes and streams for their water supply as well as a source of food. This is true to a far greater extent than is the case for the non-Native population. The greater consumption of food and water from these sources is one way in which water quality changes have a greater impact on Native people than on non-Native people.

A link between past and present:

Revitalizing knowledge of such topics as water is an important component of Aboriginal cultural survival. Taking steps to learn about and protect the water in a modern context initiates the rebuilding of ancient relationships with water, and thus strengthens and renews the vitality of Aboriginal culture. It is one form of resistance, of overcoming the effects of colonization.

A profound respect for water:

All these aspects of the importance of water lead directly to a profound respect for water common to many Aboriginal people. This is illustrated in part by the fact that water is a key component in many Creation stories and cultural ceremonies.

A willingness to share knowledge:

In the hopes that they may effect positive changes in the way water is currently treated, many Aboriginal people are willing to share their knowledge of water. The extent to which this occurs will depend upon the degree to which recipients of the knowledge agree to respect both the knowledge and its holders.

Chapter 2: Jurisdiction Over First Nation Water-Works

Executive Summary

Legal control and responsibility for water treatment and delivery systems on reserve is a complicated matter. While it is clear that federal directives and band by-laws can and do apply, there is no clear and definite answer as to what extent provincial law is applicable or the extent to which rights of self-government influence questions of jurisdiction. The federal fiduciary responsibility to First Peoples also has implications for the question of jurisdiction, as it speaks to not just what *may* be done, but what *must* be done by Parliament to protect the interests of First Nations.

It is the position of the Province of Ontario²⁸ that its water regulation regime does not apply to First Nation water and sewage treatment facilities. Although no court has ever pronounced on the issue of jurisdiction over these works, based on constitutional doctrines and the mechanisms through which water treatment infrastructure is provided by the federal government, this is likely a correct statement of the law. However other related provincial laws, like those pertaining to off-reserve discharges, likely do apply, such that First Nations cannot afford to be oblivious to provincial requirements.

Parliament's fiduciary responsibility to First Nations requires a federal commitment to capacity-building within First Nation communities along the lines of the recommendations made by the Royal Commission. It is therefore a responsibility, not just an option, for the federal government to provide programs to ensure that First Nations have the resources to provide potable drinking water to their communities. As a further incident of the federal fiduciary responsibility, First Nations have an inherent right to fully participate in the process of developing the programs or arrangements that will accomplish this objective.

²⁸ Ontario Ministry of the Environment, *Drinking Water in Ontario: A Summary Report* (Toronto: Queen's Printer for Ontario, 2000)

Laws Pertaining to First Nations: A Multiplicity of Jurisdictions

(a) Federal Jurisdiction

Under section 91(24) of the *Constitution Act, 1867*,²⁹ the power to make laws in relation to “Indians, and lands reserved for Indians” was conferred on federal Parliament at the time of Confederation.³⁰ This constitutional power is the basis for most federal laws and programs that pertain to First Nations. The federal *Indian Act*³¹ and to a lesser extent, the *Department of Indian Affairs and Northern Development Act*,³² are the primary federal statutes under which Parliament exercises this jurisdiction. Much federal action, including action pertaining to the treatment and distribution of water on reserve, is presumably carried out pursuant to broad enabling provisions in these Acts.³³ In fact, the federal government appears to exercise control over First Nations’ water treatment infrastructure primarily through policy directives and spending conditions rather than through explicit statutory or regulatory provisions.

(b) Provincial Jurisdiction

The Constitution’s explicit conferral to Parliament of the power to make laws pertaining to “Indians and lands reserved for the Indians” does not of itself make the aboriginal population residing on reserve “federal people” who are exempt from the jurisdiction and responsibility of the provinces. In fact, provincial laws also apply to First Nations and their lands to such an extent that “the general rule is that provincial laws apply to Indians and lands reserved for the Indians”.³⁴ First Peoples have full legal rights and responsibilities as residents of the province in which they reside,³⁵ and the Supreme Court of Canada has clearly and consistently rejected the

²⁹ 1867 (U.K.), Chap. 3

³⁰ Federal jurisdiction over lands includes federal jurisdiction over water belonging to such lands: *Burrard Power Co. v. The King*, [1911] A.C. 87 (P.C.).

³¹ R.S.C. 1985, Chap. I-5

³² R.S.C. 1985, Chap. I-6

³³ For example, the *Department of Indian Affairs and Northern Development Act* states that “the powers, duties and functions of the Minister [of Indian Affairs and Northern Development] extend to and include all matters over which Parliament has jurisdiction, not by law assigned to any other department, board or agency of the Government of Canada, relating to (a) Indian affairs...”

³⁴ Hogg, *Constitutional Law of Canada*, 4th ed. (Toronto: Carswell, 1997) at 678.

³⁵ *Dick v. The Queen*, [1985] 2 S.C.R. 309 at 326-327.

theory that once prevailed that reserves themselves are federal “enclaves” from which provincial laws are excluded.³⁶

Provincial laws can apply to First Nations in two ways. Most “laws of general jurisdiction”³⁷ apply to First Nations lands and peoples of their own force. Provincial traffic laws are one example.³⁸ The provinces enact these laws pursuant to their ordinary legislative powers under the *Constitution Act, 1867* (e.g. laws pertaining to “property and civil rights” under s. 92(13)) and they apply as provincial laws to First Nations just as they do to all other provincial residents. The only exception is where there is an explicit conflict with a federal law that pertains specifically to First Nations, where paramountcy will lead to the reading down of provincial law as it relates to First Nations.

A second category of provincial laws that apply to First Nations are provincial laws which are incorporated by reference into federal law pursuant to section 88 of the *Indian Act* which provides that:

Subject to the terms of any treaty and any other Act of Parliament, all laws of general application from time to time in force in any province are applicable to and in respect of Indians in the province, except to the extent that those laws are inconsistent with this Act or any order, rule, regulation or by-law made thereunder, and except to the extent that those laws make provision for any matter for which provision is made by or under this Act.³⁹

The only laws to which section 88 applies are laws which are general in scope, but which impact on First Nations people or lands “*qua* Indians” in some way – for example because in their application they affect the use of land on reserve. Except for section 88, such laws would not apply to First Peoples because they presumptively interfere with the federal power to legislate on

³⁶ *Cardinal v. Alberta (Attorney General)*, [1974] S.C.R. 695; *Natural Parents v Superintendent of Child Welfare*, [1976] 2 S.C.R. 751; *Four B Manufacturing v. United Garment Workers*, [1980] 1 S.C.R. 1031.

³⁷ Laws of general jurisdiction being those which apply to provincial residents generally and not to First Nations in particular. The provinces are, of course, constitutionally barred from passing laws pertaining specifically to “Indians”.

³⁸ *R. v. Francis*, [1988] 1 S.C.R. 1025.

³⁹ *Indian Act*, R.S.C. 1985, c. I-5, s. 88.

the subject of “Indianness”. However section 88 expands provincial jurisdiction by treating these laws as if Parliament itself had enacted them:

Doctrinally speaking, the impact of *Dick* [the leading constitutional case on the interpretation of section 88] is that section 88 is irrelevant – need not even arise for consideration – in a given case unless and until a court determines that the provincial law at issue is both constitutionally valid in its own right and, at the same time, constitutionally inapplicable, considered as provincial law, to Indians. It’s impact, from a practical standpoint, is that a great deal of valid provincial law – even laws not yet in contemplation when section 88 was enacted in 1951 – is going to be applying, one way or another, to Indians”.⁴⁰

(c) **Aboriginal Rights and First Nation Jurisdiction**

The reach of both federal and provincial jurisdiction is limited by section 35 of the *Constitution Act, 1982*, which gives constitutional protection to “the existing aboriginal and treaty rights of the aboriginal peoples of Canada”.⁴¹ Aboriginal rights are rights which First People possess, “not by virtue of Crown grant, legislation or treaty, but by reason of the fact that aboriginal peoples were once independent, self-governing entities in possession of most of the lands now making up Canada”.⁴² Treaty rights are rights of First Nations that have been recognized in ancient and modern treaties entered into between First Nations and the Crown. Because aboriginal and treaty rights are constitutionally protected, Parliament cannot pass laws, under section 91(24) (or any other federal head of power) which abrogate existing aboriginal or treaty rights, and may not incorporate provincial laws that do so under section 88 of the *Indian Act*. The provincial Legislatures are similarly restricted within their spheres of legislative competence. Aboriginal and treaty rights therefore create a sphere within neither the provinces nor Parliament are competent to interfere with First Nations’ right to govern themselves.

In addition to those self-government rights which may be “recognized and affirmed” as aboriginal or treaty rights under section 35 of the *Constitution Act, 1867* the federal *Indian Act* explicitly delegates to band councils the power to enact by-laws on certain listed subjects. First

⁴⁰ Kerry Wilkins “Still Crazy After All These Years: Section 88 of the *Indian Act* at Fifty”, (2000) 38 *Alberta Law Review* 458 at 469-470.

⁴¹ Enacted by the *Canada Act, 1982* (U.K.), Chap. 11.

⁴² Hogg, *supra* at 687.

Nation by-laws are not effective unless and until they gain the approval of the Minister of Indian Affairs and may be superseded by federal legislation or regulation.⁴³ However where by-laws enacted by band councils are accepted by the Minister, they prevail over any conflicting provincial legislation by virtue of paramountcy.⁴⁴

“Which Law Applies” to Water Works on Reserve?

The question of “which law applies” is inherently uncertain for most activities that take place on reserve because of the judicially undefined scope of aboriginal rights and the vague and subjective tests which govern the division of powers over matters impacting on “Indianness”.

(a) Aboriginal Rights Considerations

To answer the question of whether any federal *or* provincial law applies to First Nations or reserve lands, one must first ask: (1) whether there are aboriginal or treaty rights over this subject matter; and if the answer is ‘yes’, then (2) whether and how the federal or provincial law is reconcilable with those rights.

However unlike federal and provincial powers which are clearly enumerated in sections 91 and 92 of the *Constitution Act, 1867*, the content and scope of aboriginal rights is not clearly defined. Aboriginal and treaty rights are particular to the First Nations who possess them. The recognition of aboriginal rights by the courts turns on specific evidence of the duration, nature and scope of the customary law and cultural and religious practices of individual First Nations which assert inherent jurisdiction.⁴⁵ Though there are some aboriginal rights which are likely common to all First Nations,⁴⁶ aboriginal rights cannot be generalized as a discrete list of subject

⁴³ A by-law made under section 81 of the *Indian Act* (which relates to non-revenue by-laws) comes into force forty days after a copy thereof is forwarded to the Minister pursuant to subsection 82(1), unless it is disallowed by the Minister within that period. By-laws made under section 83 (revenue and licensing by-laws) must receive explicit approval before they are in force.

⁴⁴ This is dictated by the constitutional doctrine of federal paramountcy and by section 88 of the *Indian Act* which precludes the incorporation by reference of provincial legislation of general jurisdiction “to the extent that those laws are inconsistent with this Act or any order, rule, regulation or by-law made thereunder”.

⁴⁵ *R. v. Sparrow*, [1990] 1 S.C.R. 1075.

⁴⁶ For example, a right to participate in federal/provincial decision-making on matters which have particular impact on aboriginal peoples, discussed *infra*.

matters over which all First Nations have jurisdiction. Neither can the territorial reach of inherent aboriginal jurisdiction be limited to the boundaries of modern reserves; aboriginal rights extend beyond those limits to territories in which First Nations traditionally exercised those rights, often a complex factual question.⁴⁷

It is obviously beyond the scope of this paper to comment on what specific aboriginal rights to water the 134 member nations of Chiefs of Ontario may possess. It is unlikely that any such rights materially impact on the threshold question of whether the Ontario regulatory regime for water and sewage systems applies to First Nations. However aboriginal rights may well have implications for how First Nations are affected by other Ontario communities in their use of and discharge to shared water resources. As will be discussed below, they do impact on First Nations' general right to participate in finding solutions to water treatment concerns affecting their communities.

(b) Section 88 and “Indianness”

Section 88 of the *Indian Act* and the question of “Indianness” are central to the question of whether the provincial water treatment regulations are applicable on reserve.

Apart from the question of aboriginal rights, the analysis of whether a provincial law applies to a First Nation activity calls for three questions to be answered: (1) is the provincial law one of “general jurisdiction”?; (2) does it affect “Indianness”?; (3) if it *does* affect Indianness, is any “provision made by or under” the *Indian Act* which would preclude the law from being incorporated by section 88?

The first question is the most straightforward, and in the case of the regulatory regime for water and sewage treatment the answer is clearly “yes”. Ontario, pursuant to sections 52 and 53 of the *Ontario Water Resources Act*, purports to regulate all water and sewage systems in Ontario serving a specified number of persons.

⁴⁷ *R. v. Van der Peet*, [1996] 2 S.C.R. 507; *R. v. Côté*, [1996] 3 S.C.R. 139.

Answers to the second and third questions are not so clear. “Indianness” as interpreted by the courts is a vague and fungible concept, as is making “provision by or under the *Indian Act*”. There is no law directly on point relating to whether provincial regulation of an on-reserve water treatment plant would impact on “Indians *qua* Indians” or whether water treatment facilities on reserve are provided for at the federal level “by or under the *Indian Act*”. Cases which deal with applications of provincial laws on reserve generally are not consistent.

In *Four B Manufacturing Ltd. v. United Garment Workers of America* (1980),⁴⁸ the Supreme Court of Canada held that Ontario labour relations law governed employer-employee relations for Four B, a business located on the reserve of the Mohawks of the Bay of Quinte. The basic facts of that case were that Four B was a provincially-incorporated business controlled and staffed primarily by band members, and had received federal grants and loans from DIAND, but it was not controlled by the Band Council. Its activities were commercial in nature – manufacturing “uppers” of shoes for the Bata shoe company. Justice Beetz, who wrote for the majority, spoke about “Indianness” in the following terms when rejecting the argument that the operations of Four B fell within the core of federal jurisdiction:

[it is] an oversimplification to say that the matter which falls to be regulated in the case at bar is a civil rights of Indians. The matter is broader and more complex: it involves the rights of Indians and non-Indians to associate with one another for labour relations purposes, purposes which are not related to “Indianness”; it involves a relationship with the United Garment Workers of America or some other trade union about which there is nothing inherently Indian; it finally involves their collective bargaining with an employer who happens to be an Ontario corporation, privately owned by Indians, but about which there is nothing specifically Indian either ...

Even if the situation is considered from the sole point of view of Indian employees and as if the employer were an Indian, neither Indian status is at stake nor are rights so closely connected with Indian status that they should be regarded as necessary incidents of status such for instance as registrability, membership in a band, the right to participate in the election of Chiefs and Band Councils, reserve privileges, etc. For this reason, I come to the conclusion that the power to regulate the labour relations in issue does not form an

⁴⁸ [1980] 1 S.C.R. 1031.

integral part of primary federal jurisdiction over Indians or Lands reserved for the Indians.⁴⁹

A similar conclusion favourable to provincial jurisdiction was reached in a recent Saskatchewan case involving labour relations between the Saskatchewan Indian Gaming Authority (“SIGA”) and employees of the on-reserve Northern Lights Casino.⁵⁰ The additional significant factor in this case was that band councils *were* involved, albeit indirectly, in the operation of the facility since the employer was a corporation controlled by Saskatchewan First Nations through the Federation of Saskatchewan Indian Nations (“FSIN”). SIGA’s mandate was, in fact, to regulate on-reserve gaming activities for the benefit of Saskatchewan First Nations. Despite this, provincial legislation was held applicable.

The applicability of provincial legislation seems to end, however, at activities where Band Councils are *directly* involved, and where they are performing governmental functions like the provision of services to the community as opposed to “private” or commercial ventures. In *Re Whitebear Band Council and Carpenters Provincial Council of Saskatchewan*⁵¹ the Saskatchewan Court of Appeal held that the very same Saskatchewan legislation applicable to SIGA was inapplicable to the labour relations between the Whitebear Band Council and certain of its employees. The employees had been hired by the Band Council as carpenters and carpenters’ apprentices on a housing project funded by DIAND. On those facts, the Court of Appeal found that the matter did fall into the core of federal jurisdiction over “Indians and lands reserved for the Indians” and dictated a different result than in the *Four B* case. In the view of the Court in *Whitebear*, the key difference lay in the “local government function” being played by the Band Council:

The primary function of an Indian band council is to provide a measure of self-government by Indians on Indian reserves. In enacting by-laws pursuant to their power to do so, and in performing generally their local Government function, an Indian band council is doing that which Parliament is exclusively empowered to do pursuant to s. 91(24) of the British North America Act, 1867, but which Parliament, through the *Indian*

⁴⁹ *Id.* at 1047-1048.

⁵⁰ *Saskatchewan Indian Gaming Authority v. National Automobile, Aerospace, Transportation and General Workers Union of Canada*, [2000] S.J. No. 266 (QL)

⁵¹ (1982), 135 D.L.R. (3d) 128 (Sask. C.A.)

Act, has delegated band councils to do. In this sense, the function of an Indian band council is very much federal. So too, in my opinion, are their associated functions – acting at once as the representative body of the inhabitants of the reserve and the agent of the Minister with regard to federal programmes for reserves and their residents...

In my opinion the particular activity in which Whitebear Band Council and its carpenters are engaged – the construction of houses on the reserve pursuant to a ‘single contribution agreement’ – cannot be separated from the function of the activity of the Band Council as a whole... Accordingly, I am satisfied that the construction of house on the reserve, in the circumstances... cannot properly be removed from that whole and viewed as ordinary industrial activity in the Province.⁵²

Because a federal statute (the *Canada Labour Code*) provided a comprehensive labour relations scheme, the court did not need to engage in section 88 analysis in Whitebear. Concluding that “Indianness” defined the subject matter, the project was a “federal work or undertaking” and its labour relations governed by the *CLC*.

Other cases have also held that labour relations between band councils and their employees were governed by federal rather than provincial labour law.⁵³ Indeed, differences in the degree and nature of band council involvement was highlighted by Smith J. in distinguishing the *SIGA* case from the *Whitebear* case. In *SIGA*, Justice Smith found that:

unlike the circumstances of *Whitebear Band Council*, the casino in the matter before me is not operated by a band council or band councils exercising powers delegated from the federal government or engaged in activities contemplated by the *Indian Act*.⁵⁴

In their analysis, the courts have also weighed factors such as the receipt of federal money and the undertaking of an activity for the benefit of the First Nation into their analysis of whether the subject matter approaches the “core” of Indianness. These additional factors have not been treated as determinative, however, as federal funding was present in *Four B* and a program for the general benefit of Saskatchewan First Nations was present in *SIGA*. In balance, the Band Council’s role in an activity seems to be the pivotal consideration.

⁵² *Id.* at 138-139.

⁵³ *Qu’Appelle Indian Residential School Council v. Canada (Canadian Human Rights Commission)*, [1987] F.C.J. No. 1034 (T.D.)(QL); *Public Service Alliance of Canada v. Francis*, [1982] 2 S.C.R. 72; *Paul Band v. R.* (1984), 1 C.N.L.R. 87 (Alta. C.A.)

⁵⁴ *SIGA*, *supra* at para 55.

Because of the importance courts have placed on the role of a band council, notwithstanding the general rule favouring the applicability of provincial laws generally, it seems likely that water treatment facilities on reserve do all within the “core” of activities which are exclusively within the federal sphere. In providing for water distribution to their communities, band councils are in a role very much akin to that played by the Whitebear band council where “Indianness” was held to be at stake, and provincial regulation was held *not* to apply of its own force. Providing water to the community is a “public” as opposed to a private function of band councils. The *Indian Act* contemplates that band councils will perform this function, and reserves to band councils the explicit power to pass by-laws for “the construction and maintenance of watercourses, roads, bridges, ditches, fences and other local works”⁵⁵ and for “the construction and regulation of the use of public wells, cisterns, reservoirs and other water supplies”.⁵⁶ Federal funding is also provided by DIAND to facilitate the construction, operation and maintenance of these facilities – in fact water and sewer infrastructure is dealt with in the same program guidelines as those pertaining to the housing projects the Whitebear council was undertaking. Waters flowing under and through reserve lands are also themselves an integral part of the “lands reserved for Indians” over which s. 91(24) reserves exclusive jurisdiction to Parliament, and impacts on how liberally the reach of provincial jurisdiction should be interpreted.⁵⁷ Collectively, these factors suggest that the regulation of water treatment facilities does touch at the core of federal jurisdiction over “Indians and lands reserved for the Indians”, making it presumptively immune from provincial law.

The question which then remains is whether the provincial regime is nevertheless incorporated into federal law by section 88 of the *Indian Act*, or whether there is some provision by the federal government “by or under” the *Indian Act* which, according to section 88, would preclude the incorporation by reference of sections 52 and 53 of the *OWRA*.

There are, as mentioned at the outset, no federal laws or regulations which expressly deal with water and treatment facilities – there are only guidelines and policy manuals, and none of these

⁵⁵ *Indian Act*, R.S.C. 1985, c. I-5, s. 81(f).

⁵⁶ *Id.*, s. 81(l).

⁵⁷ See e.g. discussion in K.J. Tyler, “Indian Resources and Water Rights”, [1982] 4 C.N.L.R. 1.

expressly conflict with provincial standards. However, as a recent decision of the Federal Court in *Morin v. Canada*⁵⁸ affirms, provision “by or under” the *Indian Act* does not require that there be an express conflicting federal law on point. A much less extensive federal presence in the field can preclude incorporation under section 88.

In *Morin*, the Federal Court was called upon to determine whether Ontario’s *Tenant Protection Act* applied to Crown leases of reserve land to a non-Band member. There was nothing at the federal level comparable with the fairly extensive provincial residential tenancy regime which one of the parties sought to apply, and there was no express conflict with any provision of the Ontario residential tenancy law and a federal statute or regulation. Nevertheless, Justice Heneghan ultimately found that enough “provision” had been made for the subject of leasing under the *Indian Act* that there was no “gap” for the provincial legislation to fill by incorporation. Having found the lease of lands to lie within federal “core” jurisdiction, Heneghan J. remarked on section 88 that, in broad terms:

[t]here are provisions in the Indian Act which determine how Reserve land is to be used. There are also provisions in the Indian Act which govern the lease of Indian land to a non-band member.... Having regard to the foregoing and the facts of this case as well as to the status of the Crown in its role as a fiduciary for the owners of those lands, that is the Nippissing Indian Band, I am of the opinion that this provincial law of general application does not apply.⁵⁹

The case against incorporating water treatment regulations under section 88 is less clear than regulation of residential tenancies, but the same basic principles militating against incorporation by reference seem applicable. Despite the lack of conflicting federal water regulations, the delegation under the *Indian Act* of authority to enact by-laws, can be seen as “making provision by or under the *Indian Act*” for controls on water usage and treatment – even if the authority goes unexercised. Explicit “provision” is also made in section 70(1)(b) of the *Indian Act* for the Minister of Finance “to authorize advances to the Minister of Indian Affairs out of the Consolidated Revenue Fund of such sums of money as the Minister may require to enable him to

⁵⁸ [2000] F.C.J. No. 1074 (T.D.)(QL)

⁵⁹ *Id.* at paras 23-24.

expend or to lend money for the carrying out of co-operative projects on behalf of Indians”. This is probably the general authority under which funding for infrastructure construction, operation and maintenance (and the conditions attached thereto) are “provided for” under the *Act*. Finally, there is some judicial indication that using federal funding to perform core Band Council functions like the provision of housing and utilities is an “*Indian Act* function” in the *Whitebear* and *SIGA* cases. In *Whitebear*, it was remarked that the construction of houses on the reserve pursuant to a federal funding agreement was inseparable from the “function of the activity of the Band Council as a whole”. In *SIGA*, the *Whitebear* case was explicitly distinguished from the indirect operation of the Northern Lights Casino by FSIN on the basis that whereas in the building of homes band councils were “exercising powers delegated from the federal government or engaged in activities contemplated by the *Indian Act*”, while in operating casinos they were not.

Accordingly, when all relevant factors are taken into account, we conclude that while the provincial regime of water and sewage treatment regulation pursuant to sections 52 and 53 of the *Ontario Water Resources Act* is a law of general jurisdiction, it is not a law which applies to facilities on reserve either of its own force, or as a law incorporated into federal law pursuant to section 88 of the *Indian Act*.

(c) Residual Significance of Provincial Law

Notwithstanding that Ontario does not, and probably cannot, directly regulate the operation of water and sewage treatment facilities located on reserve lands, some provincial law does still likely impact the operation of First Nation facilities. For example, there is case law to suggest that absent demonstration of an aboriginal right, the jurisdiction of First Nations with reserve lands is confined to the geographic limit of the reserve, and does not include waters flowing adjacent to the reserve where provincial laws may be applicable.⁶⁰ Accordingly, while First Nations are exempt from provincial jurisdiction over the operation of on-reserve water and sewage facilities, they may not be exempt from provincial laws with respect to discharges on to

⁶⁰ *R. v. Lewis*, [1996] 1 S.C.R. 921; *R. v. Nikal*, [1996] 1 S.C.R. 1013.

off-reserve lands and waters which do not depend on the existence of a certificate of approval from the provincial government.

Provincial laws may also affect these facilities in incidental ways that do not impact on the federal power to directly regulate public functions of band councils. For example, notwithstanding the jurisprudence discussed above about the general inapplicability of provincial law to First Nation band councils, a B.C. Court of Appeal case has held that a provincial workers' compensation scheme extended to employees of band councils. That case explicitly held that the provincial law did not impair federal jurisdiction or "Indianness" by its application to the Band Council.⁶¹

The potential application of provincial laws to the *effects* of water and sewage treatment facilities (e.g. on workers and on the environment) but *not* to water treatment processes could put First Nations in a decidedly awkward legal position. It is, after all, the aim of the comprehensive provincial water regulation regime to set and enforce the standards which should ensure that sewage effluent does not cause deleterious effects and that properly trained persons operate facilities – both for their own safety and that of their communities. That First Nations with reserve lands may be held to some of the same standards, but without the same supports to achieve them, may be a casualty of the jurisdictional patchwork and confusion that characterizes the regulation of on-reserve infrastructure.

It should also be recalled that First Nations have the potential to be affected by discharges from other facilities which *are* provincially regulated and controlled, including municipal sewage works. First Nations share the same water resources as their provincially regulated neighbours, and have rights to ensure their protection. In recent years, Bkejwanong (Walpole Island) First Nation has been active in the courts and tribunals of Ontario to challenge impacts on that community (located in the St. Clair River) from provincially regulated industrial sewage works.⁶²

⁶¹ *Isaac v. British Columbia (Workers' Compensation Board)*, [1994] B.C.J. No. 1615 (C.A.).

⁶² See e.g. *Walpole Island First Nation v. Ontario (Consolidated Hearings Board)*, [1997] 35 O.R. (3d) 113 (Div. Ct.), leave to appeal granted: [1998] O.J. No. 75 (C.A.)

(d) Fiduciary Responsibility

To this point, we have discussed which levels of government *may* involve themselves in the regulation of First Nation water-works and to what extent. However equally if not more important is the question of who *should* ensure that the systems and financing are in place to ensure that Ontarians residing on-reserve have a clean and reliable source of drinking water.

The answer, we submit, lies in the *sui generis* fiduciary responsibility that Parliament owes to First Peoples flowing from the *Royal Proclamation of 1763*.

In a chapter of David C. Hawkes' *Aboriginal Peoples and Government Responsibility* entitled "Federalism in the Era of Aboriginal Self-Government", Alan Pratt summarizes Parliament's role in the context of funding for services in the following way:

The federal role, exemplified by the grant of power in s. 91(24) of the *Constitution Act*, is the preservation and enhancement of "Indianness" or more generally, "aboriginality". This includes the definition and protection of the incidents of the special status of aboriginal persons, communities, institutions and lands, as well as specific legal protections as set out primarily in the *Indian Act*. Possibly, much more than this is included in a special federal role – the enhancement of self-government powers, economic development and the integration of aboriginal economies into the broader economy ...

Translated into responsibility for programs and services, the federal government must acknowledge a responsibility for those programs and services which are required by the special needs of "aboriginality" ...

Reserve communities in particular must be accorded those programs and services which are required to preserve and strengthen their ways of life, their cultures and their economic stability⁶³

A fiduciary responsibility to enhance quality of life for First Nations residing on reserve extends to a responsibility to support and develop First Nations' capacity to provide for the basic needs

⁶³ A. Pratt, Chapter 2: "Federalism in an Era of Aboriginal Self-Government" in D.C. Hawkes, ed. *Aboriginal Peoples and Government Responsibility* (Ottawa: Carleton University Press, 1989) at 51-52.

of their residents. Such a basic and essential human need as clean water ought to be included within the scope of this responsibility.

Fiduciary responsibility on the part of the federal government does not imply paternalism nor does it contradict the basic principle that self-government for First Nations is the ultimate goal, as Frances Adele and Katherine Graham note in their chapter of the Hawkes book:

It is increasingly clear that the federal government will continue to withdraw from direct service delivery even on Indian reserves. This is a benign trend, creating an opening for local control, *so long as funding is not correspondingly reduced*. The historic trust responsibility between the Minister of Indian and Northern Affairs and the country's status Indians does not, in our view, impede practical elaboration of this new provincial perspective. In fact, existence of the trust relationship may support good results from new program experiments if the federal-aboriginal relationship is reoriented to emphasize federal assistance in capacity-building and in funding the process through which aboriginal communities may define their specific needs and interests. (emphasis in original)⁶⁴

The essential point in the above-quoted passage is the idea that capacity-building is an element of fiduciary responsibility, particularly as it relates to transferring responsibility to First Nations from federal departments which previously provided services. The corollary to this requirement is that simply downloading responsibility for service delivery to band councils without providing adequate funding and without developing capacity within the First Nation community is not in accordance with the ends of aboriginal self government or with Parliament's fiduciary responsibilities.

Although the Hawkes book was published in 1989, the authors' observations concerning Parliament's withdrawal from direct service delivery to the on-reserve First Nation population are consistent with the information gathered by Chiefs of Ontario concerning DIAND's role in the regulation of water and wastewater facilities which will be discussed in greater detail in later chapters of this paper. DIAND and Health Canada have explicitly withdrawn to a large extent from direct control of these facilities and take the position in both their policies and in their funding agreements with First Nations that "primary" responsibility rests with Band Councils.

However the capacity-building, which as a matter of fiduciary responsibility ought to have accompanied a transfer of responsibility from DIAND to Ontario First Nations seems to be lacking. This constitutes a breach of fiduciary responsibility to the affected First Peoples.

Parliament could potentially remedy this breach in a number of ways, including by the establishment of an effective tripartite relationship between DIAND, First Nations and provinces such as Ontario which may well be better equipped than the federal government to provide some of the mechanisms to build First Nation capacity to operate and maintain effective water treatment systems. However as a further incident of the fiduciary relationship between Canada and First Nations, capacity-building solutions must not be unilaterally imposed on First Nations, particularly by a federal-provincial agreement to which First Nations are not a party. A critical element of the fiduciary responsibility of both federal and provincial governments to First Nations is that there shall not be interference with aboriginal interests save for following a process of full consultation.⁶⁵ Capacity-building must accordingly be fostered in a cooperative way which may involve increased provincial regulation on terms to which First Nations agree.

⁶⁴ F. Abele and K. Graham, Chapter 5: “High Politics is Not Enough: Policies and Programs for Aboriginal Peoples in Alberta and Ontario” in Hawkes, *Aboriginal Peoples*, *supra* at 166.

⁶⁵ *Delgamuukw v. British Columbia* (1997) 153 D.L.R. (4th) 193 at 265: “the fiduciary relationship between the Crown and aboriginal peoples may be satisfied by the involvement of aboriginal peoples in decisions taken with respect to their lands. There is always a duty of consultation...”

Chapter 3: A Comparison of the Federal/First Nation System of Water Treatment Regulation With Ontario's MOE Regime

A Thumbnail Sketch of the Federal System

As already noted, there are no federal laws or regulations which deal expressly with the subject of water treatment on reserves. Water treatment regulation on reserve is addressed only through policy directives, guidelines and objectives.

The two federal departments which have the most involvement and influence on standards for water treatment infrastructure in First Nation communities are DIAND (funding) and Health Canada (water testing). It is, however, the stated position of the federal government that "primary administrative responsibility" for water treatment systems rests with First Nation governments,⁶⁶ a condition which they purport to legally impose through language in standard funding agreements.

DIAND's practical control over standards flows through its capital and non-capital funding conditions and through the policies that determine funding levels available to First Nations. Health Canada, which provides monthly water testing to First Nations through Environmental Health Officers, relies primarily on the *Guidelines for Canadian Drinking Water Quality* as the standard or objective for water quality on reserves.

(a) Operation & Maintenance Funding

Except for funding for the construction of major capital infrastructure such as a new water treatment plant, First Nations obtain most funding for the operation of their plants through one-year Comprehensive Funding Arrangements (CFA's) with the federal government.

Alternatively, some First Nations have entered into five-year Comprehensive First Nation Funding Agreements (CFNFA's) that contain similar terms and conditions to the CFA. The CFA or CFNFA sets out the fixed entitlement of the First Nation to federal funding under several different federal programs (e.g. housing, education, band employee benefits) for the period of the

agreement. This includes formula funding for operation and maintenance of water treatment facilities. It also imposes conditions for the receipt of funding on the First Nation Band Council.

Water treatment facilities fall within the general category of “infrastructure assets and facilities” for which the current CFA⁶⁷ imposes the general requirement that Band Councils:

- (a) provide for the preservation of public health, safety and the environment; and
- (b) as a minimum, adhere to all applicable codes and standards for design, construction, operation and maintenance of facilities.⁶⁸

The agreement, however, contains no list of the “applicable codes and standards” to which First Nations are purportedly bound by signing the agreement. DIAND has not (at least for public consumption) determined exactly which codes and standards are legally “applicable” to First Nation water treatment plants – for example, it is currently being debated in a DIAND forum which water testing parameters should be used.⁶⁹ The CFA states in Article 5.1(b) that “the Minister will, at the [Band] Council’s request, provide... any publicly available information or guidelines relevant to the programs and services in the Agreement.”⁷⁰ In practice, however, very little is made available to a First Nation making such a request.⁷¹

In addition to the general requirement of adherence with “applicable” standards, the CFA purports to impose on First Nation Band Councils the obligation to carry out the community facility operation and maintenance in accordance with a maintenance plan. This maintenance

⁶⁶ DIAND/Health Canada, *Community Drinking Water and Sewage Treatment in First Nation Communities* (Minister of Public Works and Government Services Canada, July 1995), “Executive Summary”, vi.

⁶⁷ Comprehensive Funding Arrangement for 2001/2002, December 2000.

⁶⁸ Part E: Program Delivery and Reporting Requirements, Section 3, “First Nation Funding”, Clause 3.12.1, “General Delivery Requirements.

⁶⁹ DIAND Ontario Region Short Term Task Team #4, December 4, 2000 (unpublished draft).

⁷⁰ Various operations manuals have been prepared from time to time under direction of DIAND and Ontario First Nations Technical Services (OFNTSC). OFNTSC is a non-profit corporation, conceived by Chiefs of Ontario in 1989, and funded by DIAND which provides technical assistance to Tribal Councils and unaffiliated First Nations. As with other federal policies and directives, however, these manuals are not universally used and do not have force of law. Examples of such publications include a study by XCG Consultants Ltd. entitled *Guidance Manual for First Nations Wastewater Treatment Plant Monitoring* 1999 and a December 1998 study by IFNA-3DN Engineers Ltd. entitled *Water Treatment Processes with Performance Criteria* .

⁷¹ Kelvin Jamieson, Ogemawahj Tribal Council, telephone interview February 14, 2001.

plan is to list the band's assets, activities and expenditures on operations and maintenance, and the most recent version of the CFA also states that the plan shall provide for:

...measures to ensure that satisfactorily trained personnel are available at all times to operate and maintain technical systems (e.g. water and wastewater treatment plants and other technical systems) according to the design standards of the specific plant or equipment.⁷²

The above-quoted provision was very recently inserted into the CFA by DIAND; prior to December 2000, the requirement was simply to provide for "a process for carrying out physical inspections of capital facilities by qualified organizations and/or individuals". The change would seem to be aimed at increasing, or at the very least, more clearly specifying, the liability of Band Councils (with the implication that the federal government disclaims such liability itself). DIAND has recently rejected at least one request to standardize maintenance plans – refusing to commit itself to a list of what should be done in furtherance of its own stated standards.⁷³

These vague provisions of the CFA are the notional standards that DIAND purports to impose on First Nations through express funding *conditions*. In practice a lower standard is imposed by DIAND in the corporate policy that dictates DIAND's funding *levels*.

Federal funding levels for operation and maintenance are not generally negotiated between First Nations and the federal government based on an individual assessment of the band's resources and requirements. O&M funding is pre-determined by DIAND without First Nation input. Funding levels and principles are set out in DIAND's cost reference manuals based on the physical size of plants. Typically, bands receive between \$35,000.00 and \$65,000.00 per year to cover the entire cost of operating a plant – everything from electricity to labour.

Formula funding begins with a DIAND estimation of the "Gross Funding Requirement" (GFR) for the provision of the service. This is then discounted by a "Net Funding Requirement" factor (NRF), which is DIAND estimate of what the community can supply from its "own" resources. An NRF of 0.8 applies to operation and maintenance funding for water and wastewater

⁷² Part E: Program Delivery and Reporting Requirements, Section 3, "First Nation Funding", Clause 3.12.2 (d).

⁷³ Kelvin Jamieson, Ogemawahj Tribal Council, February 14, 2001.

systems.⁷⁴ This indicates that DIAND's operating assumption is that the First Nation will supplement the federal grant by 20% through other resources. In the case of drinking water, DIAND assumes that this will be supplied by user fees of \$85/household charged by the band to its residents.⁷⁵ As both the current DIAND study and our interviews of individual First Nations for this paper have consistently revealed, many First Nations are having considerable difficulty in charging and collecting these user fees owing to high costs of living and high levels of unemployment in their communities. This leads to a built-in shortfall.

The Gross Funding Requirement, moreover, is not designed for the level of service that the First Nation is required by the CFA to provide, as DIAND itself now acknowledges.⁷⁶ The funding formula assumes, for example, that water treatment plants can be operated by the First Nation by employing one operator for ten hours per week. Given that the First Nation's obligation under the CFA is to "ensure that satisfactorily trained personnel are available at all times", funding *levels* virtually guarantee that funding *conditions* cannot be met.

(b) Infrastructure

DIAND's stated policy on the construction of water and sewage treatment infrastructure is contained in its July 28, 1999 *Corporate Manuals System, Indian Programs, Volume 1, Capital Facilities and Maintenance, Water and Sewage Systems*. This policy sets "Level of Service Standards" (LOSS) for new construction and reconstruction of facilities. The "purpose" clause in the July 28/99 water and sewage systems manual [section 1.0] states that DIAND is committed to "financially support to assist First Nations in providing community services comparable to the

⁷⁴ *Corporate Manuals System, Indian Programs, Volume 1, "Capital Facilities and Maintenance, Operations & Maintenance"* (March 31, 1998)

⁷⁵ DIAND, *Water Quality Issues in First Nation Communities, Medium Term Task Assignments Group #4* (Draft, November 24, 2000), p. 4.

⁷⁶ DIAND Funding Services, Ontario Region, Medium Term Task Team #4, November 24, 1994 (unpublished) at 3: "It has been recognized by Headquarters themselves that the unit costs for the water assets are inadequate, however, lack of funding has precluded any major changes to the unit costs"; DIAND Funding Services, Ontario Region, Medium Term Task Team #2 (discussing O&M issues in the context of Tribal Council/OFNTSC funding) made similar observations and recommended that actual costs be obtained from provincial sources and set out in a document similar to "the Ontario Certificate of Authorization" rather than provided by means of formula funding.

levels of service that would generally be available in non-native communities of similar size and circumstances”. In section 6.12 of the manual, DIAND also provides that all proposed new systems will be required to meet all of:

- (a) the *National Building Code*
- (b) the *Guidelines for Canadian Drinking Water Quality* published by Health Canada
- (c) the *Guidelines for Effluent Quality and Wastewater Treatment at Federal Establishments* published by Health Canada; and
- (d) provincial/territorial guidelines and regulations where these are more stringent than federal standards.⁷⁷

These general sections suggest that DIAND’s capital funding levels for the construction of water and wastewater infrastructure ought to be set at levels sufficient to ensure that First Nation facilities are built to the highest standards and are to be comparable to facilities elsewhere in the province. However, as with operations and maintenance funding policy, there are inconsistencies between general policy and funding levels which militate against this.

For example, while DIAND’s capital infrastructure policy document states that processes for the removal of “*Giardia* and *Cryptosporidium* and enteric viruses” should be “taken into account”,⁷⁸ nowhere in the policy does DIAND actually address funding for initial investigations concerning the quantity and quality of the source water. Interviews with individual First Nations conducted for purposes of this paper indicate that in practice First Nations meet with considerable resistance to receiving capital funding for any item not provided for in the funding policy.

The absence of explicit provision for front-end investigation of the source water is a critical oversight in light of a further policy that: “any special treatment process beyond that provided by a conventional system must be substantiated by an engineering analysis that clearly demonstrates

⁷⁷ Because of the reference in 6.12(d), the Corporate Manual which incorporates by reference many provincial standards. For example, we were advised by the Acting Senior Environmental Health Officer for First Nations Environmental Health Services (Health Canada) that Health Canada advises consultants retained by First Nations to design and construct wastewater facilities that they should refer to the applicable Ontario standards rather than the outdated (1977) federal *Guidelines*.

a higher level of treatment is required”(emphasis added).⁷⁹ Because of this express condition, unless compelling data is presented by the First Nation, capital funding will only be approved for a “conventional system”. As explained below, there are a number of conditions under which conventional systems will *not* be effective in delivering potable water to a community.

“Conventional” water treatment plants consist of an in-line mixer (static or motorized blender), a tank to promote growth of particles after coagulation in the mixer, a sedimentation tank to allow large particles to settle at the bottom, gravity sand filters and pre/post disinfection. The multiple barrier units which are connected in series are: a mixer for coagulation after the addition of a coagulant such as alum or polyaluminum chloride (PACL), a series of tanks known as flocculation chambers; a sedimentation tank and rapid gravity filters. Alum, a coagulant aid, activated carbon, chlorine and a pH adjustment chemical such as soda ash are added to the raw water to aid in treatment.

These plants can be effective in delivering potable water under the right conditions, but the design of a conventional water treatment plant requires a year round analysis of the raw water quality; bench scale jar testing, and pilot studies to confirm the sizes of the various units. The performance of the plant depends on how much time the dirt and pathogens spend in the process units, physical/chemical reactions and monitoring of the process. Any weakness of one unit in this linkage of factors can result in the failure of the entire process to produce water of good quality.

“Package” conventional treatment plants, which are the most typical type of plant approved by DIAND for installation in First Nation communities, are prefabricated plants which often reduce the time that water and contaminants are required to react with chemicals in order to reduce costs. This feature may compromise water purification and lead to poor performance. Significant variations in raw water quality can occur due to weather changes such as rainstorms. The plant operator must react quickly to adjust chemicals to reflect the new conditions in order to

⁷⁸ Corporate Manuals System, July 28, 1999, Appendix A, Section 3.4.

⁷⁹ *Id.*, s. 3.5.

compensate for this. Proper implementation is thus a labour-intensive process, requiring a trained and qualified plant operator who works on full time basis, and who understands basic mathematics, chemistry, physics electricity, occupational/health and safety. With the level of operation and maintenance funding currently provided by DIAND, however, this cannot occur. This is one reason conventional treatment plants may not deliver clean, safe drinking water.

Another reason conventional systems may be ineffective is improper sizing. An undersized system will undermine the effectiveness of a package plant because demand in excess of system capacity will allow inadequate time for substances to react and for the coagulation/sedimentation process to occur. Contaminants may then pass through process units without being removed or inactivated, creating a high risk of water-borne disease. The LOSS which DIAND set for community water treatment plant capacity is 180L/person/day. This suggests an assumption that water use by First Nations is considerably lower than for non-First Nation communities, as capacity assumptions used elsewhere in Ontario are more twice that figure.⁸⁰ If the DIAND assumption is wrong (and there is evidence to suggest that this is the case, including the recent experience of Attawapiskat First Nation which is discussed in a later chapter) both quantity *and quality* are affected where conventional package plants are the method of water treatment.

Finally, conventional treatment processes are not effective against protozoa such as *cryptosporidium*, which can lead to gastrointestinal infection and even death. The largest waterborne disease outbreak in North America in recent memory was caused by *cryptosporidium* in Milwaukee, Wisconsin in 1993. More than 400,000 people were reported to have developed symptomatic gastrointestinal infection, 4000 people were hospitalized, and between 54 and 100 people died. The water treatment process used in Milwaukee at the time was a fully operational conventional treatment plant which included filtration and disinfection with chlorine.⁸¹

⁸⁰ In Ontario, where there is no data to support a different capacity figure, the assumption is based on 450 litres per person per day: Ontario Ministry of the Environment, *Guide for Applying for Approval of Municipal and Private Water and Sewage Works under Sections 52 and 53 of the Ontario Water Resources Act* (March 1998).

⁸¹ American Water Works Association, *Water Quality and Treatment, A Handbook of Community Water Supplies*, 5th ed. (AWWA, 1999) at 1.10.

If conventional treatment continues to be the DIAND default position, proper initial investigations are absolutely critical to allowing the First Nation to assess its need for a different process which will protect against this dangerous biological contaminant. The recent experience of Iskatewizaagegan First Nation, a secluded community on the Ontario-Manitoba border, vividly illustrates this fact. In 1997, an outbreak of cryptosporidiosis struck this community of 370, affecting some one-third of its residents, just weeks after DIAND had refused to fund a filtration plant on the grounds that there was “no evidence of *cryptosporidium*, *giardia* or total trihalomethanes⁸² in the source water”. However there was “no evidence” only because these contaminants had not ever been tested for in the waters of Shoal Lake that was the community’s water source – Health Canada did not have the proper equipment to do such testing. It was not until about a month after the outbreak that Health Canada, using testing equipment borrowed from the province of Manitoba, verified that levels of *cryptosporidium* exceeding 500 viable oocysts/100 L of water (a dangerously high level) were present in the community’s chlorinated tap water.⁸³

A final systemic problem with the corporate funding policy more generally is that DIAND policy militates against assisting First Nations improvements to existing facilities or new water treatment plants if the resulting operations and maintenance costs will exceed the level of DIAND subsidies. Section 4.1, Appendix “C” of the capital funding policy stipulates that:

Additions to and replacement of community facilities result in future O&M funding requirements. Therefore, plans for capital projects must be reviewed from the point of view of their O&M requirements to ensure that community facilities and services do not exceed DIAND’s level of service standards unless the First Nation can demonstrate that long term funding is available from other sources

Taken literally, this would seem to virtually preclude any capital improvements to water works in most First Nations. Evidence gathered in this report suggests that DIAND’s Gross and Net Funding Requirements for operation and maintenance of water treatment systems is far from adequate to operate existing facilities, and that few First Nations have significant “long term

⁸² Trihalomethanes are created by the reaction of natural organic matter with chlorine and have been linked to cancer in animals in some clinical studies.

⁸³ Sources: www.zenonenv.com/pp_zeebih.html; Chief John Wapioke; Lynne Boyer, INAC Media Relations.

funding from other sources” to assist with the cost of maintaining a modern water treatment facility. The funding agency’s commitment to high standards and appropriate technology is seriously undercut if, in fact, First Nations are only to obtain such facilities as may be maintained with the current levels of O&M funding. At the very least, this policy indicates a resistance on the part of the funding authority to providing state-of-the-art technology to First Nations that are struggling with operational costs.

(c) Health Canada Role⁸⁴

Health Canada’s role, and in particular the role of environmental health officers (EHOs) who service First Nation communities, is essentially a “health inspector” function. This role is limited to monitoring the quality of water consumed, not inspecting design.⁸⁵ In interviews conducted for the purpose of this paper, we were advised that the environmental health officers lack design inspection capacity since there have been no engineers employed by Health Canada in this function for approximately two years.

The province of Ontario is currently served by approximately 17 to 18 EHOs, who are based out of: Kingston, Orillia, Hamilton, London, Timmins, Sioux Lookout, Sudbury, Thunder Bay, Kenora and Fort Frances. Health Canada’s EHOs do not directly perform all sampling which is “supposed” to occur within First Nation communities. Rather, they work with Community Health Representatives (CHRs) whom they train to test water and submit to the labs. EHOs travel from community to community within their respective territories and are in transit on a daily basis. Each First Nation community is to be visited monthly by the EHOs. Where poor water quality dictates, Health Canada and its EHOs are responsible for issuing boil water orders for First Nation communities.

⁸⁴ The information reported in this section is primarily gathered through a telephone interview with Mr. Jack Mallard, Acting Senior Environmental Health Officer, December 4, 2000.

⁸⁵ Inspections, which are to be conducted every five years according to DIAND reporting policy (March 31, Corporate Manuals System, Operations & Maintenance) are left to private consultants on contract with the First Nation.

Where provincially authorized laboratories are used for water testing, as occurs in some cases,⁸⁶ results are reported pursuant to the MOE reporting protocol. Where this is not the case, the provinces do not get involved at all with water or sewer systems in reserve communities.

The roles of provincial and federal health inspectors in relation to water monitoring are markedly different. The key difference is that provincial health inspectors work with binding legislation – the *Ontario Water Resources Act* regulations and conditions in certificates of approval. Federal EHOs, by contrast, do not have any binding legislation to enforce. As a direct result of the lack of binding legislation, EHOs cannot lay charges, fines or bring work orders. Jack Mallard, Acting Senior Environmental Health Officer for Ontario, stated that EHOs can “simply work with Chiefs and Councils in a common sense and co-operative manner pointing out problems that need to be addressed”.

EHOs are inherently limited in their ability to assist First Nations by their lack of authority to authorize federal expenditures. Many water quality problems that EHOs identify cannot be rectified without capital improvements. The First Nations with whom they work generally do not have sufficient independent resources to make these improvements. Within the federal system of control over First Nation infrastructure, however, only DIAND can authorize the expenditure of federal monies for infrastructure improvements, and Health Canada does not systematically report problems to DIAND. Accordingly the mechanism in place for identifying problems is disconnected with the means for solving them.

The downsizing of the federal civil service to eliminate engineers from the EHO program necessitates that First Nations retain their own consultants and engineers for capital infrastructure projects and federally-mandated inspections. Both the federal government and First Nations are heavily dependent on these consultants to design appropriate plants to achieve the end result of potable water, often with little governmental guidance. Jack Mallard suggested in his interview that this practice has “lined the pockets of consultants and engineers” and has not always produced good results.

⁸⁶ For example, Six Nations uses a provincially approved laboratory.

Health Canada does not frequently advise consultants on First Nation sewer projects because the majority of First Nations are exclusively on private sewers (which aren't regulated at all at the federal level).⁸⁷ There are also fewer community sewage plants on reserve than water treatment plants. If a consultant does approach Health Canada with a query, it has become practice to refer them to provincial standards for First Nations' communal sewage facilities notwithstanding that there are also federal effluent standards. Following provincial standards is not a legal imperative, but is recommended because the MOE effluent criteria are clearly more stringent and modern than the federal sewage effluent guidelines, which have not been updated since 1977. In fact, for a couple of years in recent history, Health Canada and DIAND had a practice of directing those First Nations who were constructing new sewage works in Ontario to apply for provincial certificates of approval or equivalent "clearances". This directive was subsequently abandoned, however, because the province strongly resisted inspecting and certifying facilities the regulation of which they regarded as falling outside of their jurisdiction. Now federal government and First Nations simply rely on the consultants retained by First Nations to design and construct facilities to the "highest standards" which they are directed to adhere to. Health Canada does not systematically conduct physical inspections of either water or sewage facilities to verify that this has occurred.

How Does the Federal "System" Compare with the MOE Regime?

As this Inquiry will probe in detail, the efficacy of Ontario's drinking water regime is in question given the tragic events in Walkerton in May of 2000. However, provincial scrutiny of water treatment eclipses that provided to First Nations by the federal government in a number of important respects. Having outlined the controls which DIAND and Health Canada impose on First Nation water systems, the key differences between this federal "system" and the regulatory regime which is applicable in the rest of Ontario pursuant to sections 52 of the *Ontario Water Resources Act* are illustrated in the following chart:

⁸⁷ According to a *Guidance Manual for First Nations Wastewater Treatment Plant Monitoring* prepared by XCG Consultants Ltd. for the Ontario First Nations Technical Services Corporation in 1999, there were 74 wastewater treatment plants in Ontario First Nation Communities. By contrast, January 2000 data collected by the Aboriginal Water and Wastewater Association of Ontario lists 110 water treatment plants.

<u>Point of Comparison</u>	<u>Federal/First Nation “System”</u>	<u>Ontario MOE Regime</u>
1. Responsible Ministry or Department.	No one department is responsible for setting or implementing standards. DIAND, Health Canada and Public Works and Government Services play limited roles; First Nations themselves are deemed to have “primary administrative responsibility.	Pursuant to the <i>OWRA</i> , specific water treatment standards are set and enforced and administered primarily by one responsible Ministry, the MOE.
2. Clarity of Standards	First Nations, their consultants and federal officials are left to discern the applicable standard from vague and conflicting language in funding conditions, guidelines and manuals. Because federal documents are outdated, First Nations and their consultants are often referred to provincial standards, notwithstanding that the province will not enforce standards on reserve. Plants are not classified.	Specific requirements are set out in certificates of approval and regulations. Approval is to be based on: adequate quantity and satisfactory quality of the water source; adequate treatment facilities to consistently produce water that meets regulations; adequate capacity to meet peak demands; enforcement of requirements to prevent development of health hazards; and sound engineering principles. ⁸⁸ Certificates of approval, in conjunction with the Water Quality Regulation, specify standards that drinking water quality must meet and the monitoring requirements to assess drinking water quality. Plants are classified and operators must have corresponding credentials.

⁸⁸ Ontario Ministry of the Environment, *Drinking Water in Ontario: A Summary Report 1993-1997* (Toronto: Queen’s Printer for Ontario, 2000)

<p>3. Enforceability of Standards</p>	<p>No federal body enforces standards.</p>	<p>MOE enforces compliance with specific conditions in certificates of approval and under regulation. Charges and work orders may be brought for non-compliance.</p>
<p>4. Operator Training Requirements</p>	<p>Although Appendix D2: “Capacity Development” to DIAND’s Operations & Maintenance Funding Policy suggests that “all First Nations with central water and sewer systems should be encouraged to write the [provincial certification] examinations”, there are no mandatory training requirements for First Nation operators. Many First Nations have operators who lack even basic training and education. A recent study suggests that only one First Nation operator in Ontario is provincially certified.</p>	<p>Minimum levels of training are fixed by regulation. Ontario Regulation 435/93 requires that waterworks be classified and that persons operating waterworks be licensed according to the classification held by the waterworks.</p>
<p>5. Water Testing</p>	<p>Except for monthly visits by Health Canada EHOs, most testing is done within the community, often by persons with minimal training. <i>Canadian Drinking Water Guidelines</i> are currently used as the objective.</p>	<p>Water testing must be done at accredited labs and in accordance with O. Regulation 459/00 - <i>Drinking Water Protection Regulation</i> (referred to within the industry as the <i>Ontario Drinking Water Standards (ODWS)</i>) which is more stringent than the <i>CDWG</i> on several testing parameters.⁸⁹</p>

⁸⁹ As specifically found in the current study by DIAND Ontario Region, Task Team #4, December 4, 2000 (draft, unpublished).

<p>6. Specifications of New Plants</p>	<p>Plants are built in accordance with DIAND Level of Service Standards. Capacity assumptions are significantly lower (at 180L/person) for community piped water supply than the provincial standard. Systems are based on ten year projections and treatability studies and pilot-testing are not standard requirements</p>	<p>As a condition to the receipt of certificate of approval, new plants are built to higher capacity standards than those set by DIAND (450L/person). Standard terms of reference call for the engineer and manufacturer to test a process on-site prior to making the final selection of the process and before undertaking detailed engineering design.⁹⁰</p>
<p>7. “Boil Water” Orders and Emergency Protocol</p>	<p>Health Canada issues “boil water orders” but declines to issue directives or to order shut-downs because it lacks legislative authority to do so. The communications protocol for boil water orders is not well established.</p>	<p>Local medical officers of health through <i>Health Protection and Promotion Act</i>, R.S.O. 1990, c.H.7, ss.10-13, have the authority to judge whether water is safe for human consumption. Shutdowns shall be ordered where water is judged to be unsafe.</p>

In summary, the federal regulatory infrastructure is inferior in several respects to what exists provincially. It lacks the comprehensiveness, co-ordination and enforceability and clarity of current provincial standards and the operator training standards to help to ensure that they are met. How this translates into specific problems in First Nation communities is explored in the next two chapters.

⁹⁰ Ontario Ministry of the Environment, *Guide for Applying for Approval of Municipal and Private Water and Sewage Works under Sections 52 and 53 of the Ontario Water Resources Act* (March 1998).

PART TWO:

Chapter 4: A Progress Report on Ameliorating First Nation Water Quality and Water Treatment Issues – 1995 to 2001

Executive Summary

In July of 1995, prior to the publication of the *Royal Commission Report on Aboriginal Peoples*, DIAND and Health Canada conducted a survey of the state of water and wastewater treatment in First Nation Communities across Canada. The Royal Commission assessed that data as “authoritative evidence that community services in First Nation communities are a direct threat to health”.⁹¹ As noted in the preface to this paper, the Royal Commission Report called for action to ameliorate this problem within five years.

In July of 2000, following the events in Walkerton, DIAND’s Ontario Region Funding Services office assembled a team to do an assessment of water quality issues in First Nation communities, this study being specific to Ontario. The “task teams” assembled in the 2000 DIAND study included representatives from Health Canada, Public Works and Government Services, Ontario First Nation Technical Services Corporation, and technical staff from two Tribal Councils. The DIAND initiative is still ongoing, however as at February of 2001, short and medium term task team reports had been completed and the majority of issues identified in the Phase I “issue identification” stage had been reported on.

A comparison of the findings and recommendations in the 2000/2001 study against the 1995 DIAND/Health Canada report shows that little progress has been made since 1995, and that serious problems with drinking water still exist in First Nation communities.

(a) Acute Water Quality Problems

In the DIAND/Health Canada study of 1995, all First Nation water treatment facilities were rated by category. Category 1 facilities were those which were “not consistently meeting the health

parameters of the [*Canadian Drinking Water*] *Guidelines*”, and which consequently posed immediate health risks to the community. Category 2 facilities were facilities with maintenance or repair problems that posed potential health risks if not addressed. Category 3 facilities were those which produced potable water, but which were experiencing with inadequate capacity or with meeting the aesthetic objectives of the *Canadian Drinking Water Guidelines*, and category 4 facilities were “systems not experiencing problems”. In Ontario, 40 of 179 systems, or about 22% of First Nation water treatment systems, fell into Category 1, facilities with the most serious problems (posing “immediate” health risks to the community).⁹² Only 34% (61 of 179) of First Nation facilities in Ontario were rated Category 4.

In the 2000/2001 study, a Short Term Task Team, working from current data held by DIAND and Health Canada, found that 28 Ontario facilities were not capable of meeting minimum treatment standards of the *Canadian Drinking Water Guidelines*.⁹³ The assessment was more limited than the 1995 study in that the 2000 figure explicitly excluded any consideration of how substandard operations and maintenance might impact on the quality of water produced by a technically adequate plant. Their assessment also excluded from consideration those plants which were technically adequate but which were approaching their maximum capacity. As part of the ongoing investigation, DIAND and OFNTSC have since commissioned a more comprehensive study to be undertaken by the Ontario Clean Water Agency (OCWA). The OCWA study will follow the parameters of the recent MOE-mandated study of water treatment plants in the rest of Ontario, and will, when completed, provide a better basis upon which to evaluate the current state of First Nation water treatment facilities.

It appears probable, particularly given the Task Team’s own comments that their assumption that operations and maintenance were being adequately carried out on all facilities was highly questionable, that the current problems are more extensive than the 28 plants which are incapable

⁹¹ Royal Commission in Volume 3: Gathering Strength at 379.

⁹² *Id.* at 8.

⁹³ DIAND Funding Services, Ontario Region, Short Term Task Team #5, December 4, 2000 (unpublished).

of meeting the *CDWG* standard. At best, the drop from 40 to 28 plants known to be producing unsafe water is a modest improvement.

(b) Operations and Maintenance (O&M) Shortfalls

In 1995, poor operation and maintenance of First Nation water treatment facilities was noted as a problem, but it was an issue which did not attract a great deal of attention in the DIAND/Health Canada report. The report's authors suggested that "in the majority of cases, these problems are being addressed by projects already included in regional capital plans".⁹⁴

In 2000, however, the Medium Term Task Team assigned to review sufficiency of core O&M and capital funding levels concluded that inadequate O&M funding was an acute and growing problem.⁹⁵ The O&M funding formula was found to be based on outdated unit costs and indices. DIAND Headquarters, which set the formula, recognized that its own levels were inadequate to cover costs of meeting current standards and operating new advanced technology. The Task Team found that this problem was one which was beyond their own capacity to solve because only the Ontario Region office of DIAND, which lacked authority to raise funding levels, was at the table.⁹⁶

(c) Training of Operators

The report produced by Health Canada and DIAND in 1995 noted that "a significant problem in small communities is a lack of adequate training for the systems operators of water treatment and sewage facilities".⁹⁷ Among the six key recommendations in the report was that "First Nations, Health Canada and DIAND must give a high priority to appropriate training of First Nations personnel".⁹⁸

⁹⁴ DIAND 1995, *supra* at 14.

⁹⁵ DIAND Funding Services, Ontario Region, Medium Term Task Team #4, November 24, 2000 (unpublished draft) at 3.

⁹⁶ *Ibid.*

⁹⁷ DIAND 1995, *supra* at 14.

⁹⁸ *Id.* at 21.

As part of the 2000 Ontario region DIAND study, a Medium Term Task Team was assigned to review the present training procedures and possible certification of on-reserve water treatment plant (WTP) operators. The team found that “the present training for First Nations is inconsistent, unorganized [and] with no direction”.⁹⁹ The Task Team’s report specifically found that minimal start-up training was provided to most operators of new WTPs and that the basic education level of operators was causing access problems for First Nation operators seeking to enrol in provincial certification programs. According to their survey, only one First Nation operator in the province was certified.

Notwithstanding the negative overall conclusion about the state of training, the task team did acknowledge some success had been attained with some of the training initiatives undertaken by First Nations themselves since 1995. In a 1997 report, James Ransom had already noted that Presence/Absence Water Monitoring Program pioneered by the Split Lake First Nation in Manitoba (now in First Nation communities beyond that province), and the Circuit Rider Training Program, an initiative of Ontario First Nations Technical Services were particularly good in terms of improving operator knowledge and confidence.

“Presence/Absence” was instituted to provide a cost effective method for individual water users to test their own water. Pioneered by a First Nation in Manitoba, the program has spread to several provinces, including Ontario, and today over 150 First Nation communities [nationally] have Presence/Absence programs or labs in their community.¹⁰⁰ Ransom noted that the program:

improves bacteriological testing of drinking waters and leads to improved health conditions in First Nations. It allows for results within twenty-four hours and is a reliable testing method. It empowers First Nation communities, instills ownership of the sampling program, builds the capacity of the community to assume new responsibilities, and provides for employment and training of community members.¹⁰¹

⁹⁹ DIAND Funding Services, Ontario Region, Medium Term Task Team #1, November 27, 2000 (unpublished) at 3.

¹⁰⁰ Ransom, *supra* at 67.

¹⁰¹ *Ibid.*

The “Circuit Rider Training Program” began in the early 1990s in partnership with DIAND. Its aim was to train local First Nations operators in the proper care and maintenance of new wastewater treatment facilities in their communities. “Circuit Riders” travelled to the First Nations communities in their allotted “circuit”, spending 2-3 days at a time in each, where they provided the needed instruction. The concept started in Saskatchewan and was introduced to Ontario by Ontario First Nation Technical Services. In his account, Ransom had observed that a positive feature of the program is its co-operative and hands-on nature, helping to “empower First Nation communities”.¹⁰²

The overriding problem, however, is that while these and several other good programs and seminars have been developed for and by First Nations, they are not, and were never designed to be, programs of universal application which impart all of the training necessary to operate and maintain facilities. Each aims to develop some-but-not-all necessary skills, and is accessed by some-but-not-all First Nations. The lack of any agency to oversee the training, qualification, roles and responsibilities of WTP operators remains a barrier to achieving high standards and consistency for First Nation operator training, as the Task Team specifically found in its report.¹⁰³

(d) Appropriate Plant Design

In the Health Canada/DIAND 1995 report, it was acknowledged that inappropriate design of some First Nation water and sewage systems was an issue. DIAND and Health Canada suggested, however, that the solution to this was that First Nations be “encouraged to engage competent, professional engineers who are familiar with small community water and sewage treatment systems and can ensure that the health and aesthetic... parameters of the *Guidelines for Canadian Drinking Water Quality* are met...”.¹⁰⁴

¹⁰² *Id.* at 73.

¹⁰³ DIAND 2000 Medium Term Task Team #1, *supra* at 5.

Five years later in the 2000/2001 DIAND study, however, it was clear that simply looking to the diligence of engineers on contract with individual First Nations was not working very effectively. The Medium Term Task Team which looked at the capital construction process found that there was not a “well known set of activities defined for each phase” in the development of a DIAND-funded project.¹⁰⁵ As a consequence, the task team recommended that quality assurance principles be addressed earlier in the project to ensure an economic, well-engineered, well-constructed facility capable of delivering product in accordance with accepted standards. They specifically found that the amount of care taken in the front-end development of the capital study tended to correlate with the success or failure of the project overall. Increased involvement of Tribal Councils and/or OFNTSC, the development of a clear set of Terms of Reference for all consultants, and the engaging of a consultant for technical assistance for the first year of operation were among the concrete recommendations of the Task Team.¹⁰⁶

(e) Communication Within and Between Federal and First Nation Governments

The 1995 DIAND/Health Canada study acknowledged that better communication within and between the federal and First Nation governments was needed in order to improve the overall quality of water treatment on reserve. It explicitly recommended that “co-operation among First Nations and regional officials of DIAND and Health Canada must be strengthened” so that problems could be more effectively addressed.¹⁰⁷

As of October of 2000, however, the DIAND study team’s Phase I study found that communications of water quality problems as between Health Canada, DIAND, First Nations and other service providers remained an issue of concern.¹⁰⁸ There was still no clear protocol as to who was to inform whom of water quality problems. Accordingly, a Short Term Task Team was assigned the task of developing an “all-party protocol” regarding water issues discovered by

¹⁰⁴ *Id* at 2.

¹⁰⁵ DIAND Funding Services, Ontario Region, Medium Term Task Team #5, December 2, 2000 (unpublished draft) at 2.

¹⁰⁶ *Id.* at 1.

¹⁰⁷ DIAND 1995 at 21.

Health Canada environmental health officers, by WTP operators or First Nation administration. A specific action plan for Health Canada “boil water advisories” was also recommended by this Task Team in recognition of the fact that existing communications were inadequate.¹⁰⁹

(f) Applicable Water Quality Standards

In the DIAND/Health Canada report of 1995, there was no issue of what water quality standard First Nations and Health Canada should use as their criteria. The *Canadian Drinking Water Guidelines* were the highest standard in Canada, and were accepted as the standard that was applicable to First Nation facilities.

By the time of the 2000/2001 study, however, the Province of Ontario had O. Reg. 459/00 –the *Ontario Drinking Water Protection Regulation (ODWPR)*. Given a standing policy to pursue the highest standards, one Short Term Task Team from the Ontario Region DIAND study was assigned to “obtain consensus regarding the minimum level of water treatment” and to compare the *CDWG* to the *ODWPR*.¹¹⁰

The Task Team concluded that disinfection for community wells and chemically-assisted filtration for surface water sources were the applicable minimum acceptable levels of treatment. They compared the federal and provincial standards and related to the study team that more frequent testing for turbidity, chlorine residuals, inorganics, sodium, nitrates, pesticides and PCBs were demanded under the *ODWPR* than under the *CDWG*. As a result of the higher provincial standards, the Task Team suggested that “water plant operators will have to more frequently sample and test specific parameters (which they know from experience are variable for their situation) to ensure consistent good water quality”. They also reported that “consideration could be given to adopting MOE requirements for sampling and testing”. However the Task Team stopped short of recommending the provincial standards for adoption,

¹⁰⁸ DIAND Funding Services, Ontario Region, Phase I Study, October 25, 2000 (draft) at 6.

¹⁰⁹ DIAND Funding Services, Ontario Region, Short Term Task Team #1, December 1, 2000 (unpublished draft).

¹¹⁰ DIAND Funding Services, Ontario Region, Short Term Task Team #4, December 4, 2000 (unpublished draft).

given that this “could be quite costly and the benefits/costs would have to be assessed”.¹¹¹ In other words, the team was forced to acknowledge that with the level of resources currently available to First Nations for water treatment operations, provincial standards were simply unattainable.

(g) Knowledge and Understanding of Water Quality Issues Within Band Governance

In the executive summary to the 1995 DIAND/Health Canada report, it was suggested that “as a result of the transfer of administrative responsibility to First Nation communities over the past several years, First Nations took on the responsibility for the operation and maintenance of their community water and sewage systems.” In more colloquial language, this was a reference to downloading, which had already begun to occur. However it was also stated in the 1995 that “the Department of Indian Affairs and Northern Development (DIAND) is committed to appropriate training for First Nation communities to enable them to fulfil this responsibility.”¹¹² Among the tools they highlighted to accomplish this was “an awareness video” which had been produced and presented to a number of First Nation communities which “stresses the importance of regular monitoring of water supplies for bacteriological quality and promotes presence/absence testing as a tool for doing this”.¹¹³

In the Phase I study to the DIAND report of October 2000, it was again raised that the level of knowledge by Chiefs and Councillors of “their” responsibilities regarding the operation and maintenance of community water treatment plants was insufficient. It was further suggested by some members of the study team that this lack of understanding could be translated into lack of band funding for water treatment plants and sound operational decision-making. A lack of understanding of the respective roles of tribal councils and OFNTSC was also highlighted. The October 2000 Phase I report purported to clarify these issues by “reviewing the roles and responsibilities” of various parties, stating that:

¹¹¹ DIAND Funding Services, Ontario Region, Short Term Task Team #4, December 4, 2000 (unpublished).

¹¹² DIAND 1995, *supra* at vi.

¹¹³ DIAND 1995, *supra* at 19.

- First Nation Chiefs and Councils had the “overall and primary responsibility” for the safe operation and maintenance of community WTPs and distribution systems;
- Tribal Councils were responsible for providing advice to affiliated FN’s on funding and on O&M activities;
- OFNTSC was responsible for advising tribal councils and providing technical advice on an “as-requested basis” to unaffiliated First Nations;
- Health Canada (or alternative providers) was responsible for water sampling as per *Canadian Drinking Water Guidelines*, for visual inspections and for boil water advisories; and
- DIAND was responsible for providing formula funding, for monitoring departmental reporting requirements, and for providing “needs-driven ‘non-core’ capital allocations for the construction of major WTP and distribution systems, as well as advice and assistance”.

A Medium Term Task Team was then assigned the task of “developing and implementing a program to assist Chiefs and Councils and Band Administrators to become more familiar with the issues surrounding water quality...”. Ironically, they recommended a comprehensive “Awareness Workshop” for this purpose¹¹⁴ – similar to what had been advanced as a solution to the problem five years earlier.

Observations

A comparison of the two studies indicates that most of the problems identified in 1995 have not been solved, and some may even be getting worse. Inadequate maintenance, a lack of trained operators, and shortfalls in the general level of preparation of First Nations operators and administrators for the critical task of delivering safe drinking water remain urgent problems. Moreover, although DIAND continues to insist that the “primary administrative responsibility” for operating water systems rests with Band Councils, DIAND seems to have lost sight of the commitment, referred to in the 1995 report, to provide First Nations with adequate resources to discharge that responsibility.

¹¹⁴ DIAND Funding Services, Ontario Region, Medium Term Task Team #6.

For instance, operations and maintenance issues which were supposed to have been “addressed in regional capital plans” five years ago have become increasingly urgent. Although training was to be given the “highest priority” in 1995, a shortage of trained operators and comprehensive training remains a serious problem in 2001.

The risk that Ontario First Nations will slip further behind the rest of the province of Ontario in terms of water quality is evident in the suggestion in the recent DIAND Task Team report that the higher sampling frequency mandated by Ontario’s new guidelines may be “too costly” for First Nations to undertake at this time. A basic lack of resources – monetary and otherwise - is to blame for this growing gap, and a failing grade on the progress report of Canada in meeting the objectives set out by the Royal Commission.

Chapter 5: Case Studies

Executive Summary

In order to illustrate how the policies and problems identified in this paper affect First Nation communities in the day-to-day operation of communal water treatment facilities, interviews were conducted in November and December of 2000 in respect of four communities: Attawapiskat First Nation and Sandy Lake First Nation in the north; Beausoleil First Nation and Six Nations of Grand River Territory in the south. An effort was made to select First Nations which were different from each other in terms of their size, geographic location, and relative prosperity. These case studies deliberately represent neither the best nor the worst in terms of their water quality experiences. They are a sample of how four communities are attempting to cope with the challenge of delivering potable drinking water to their residents.

CASE STUDY #1: ATTAWAPISKAT FIRST NATION

Based on Interviews With: Chief Ignace Gull, Deputy Chief Margaret Okimaw, Mike Gull (Technical Services), Gregory Koostachin (Technical Services), and Derek Hill (Project Manager) in Toronto and Moosonee, November 23 & 27, 2000.

Size and Location of the First Nation

Attawapiskat First Nation (Reserve 91A) is located 220 kilometres north of Moosonee near the mouth of the Attawapiskat River at James Bay. The nearest commercial centre is the city of Timmins, located 435 kilometres to the south. The on-reserve population is approximately 1700.

Water and Sewer Infrastructure

Until early 1990's, Attawapiskat's water and sewer systems (built about 1976) served only the reserve's Catholic mission, teachers and nurses. A \$20.6 million project was announced in the early 1990's to provide water and sewers to the rest of the community. Ultimately, a \$14 million contract was awarded to retrofit the original system to serve 280 households. The contract was

never completed, however, and the Attawapiskat First Nation is still trying to recover \$900,000 in cost overruns from that project.

From all reports, the project, completed in about 1995, was a complete failure from the outset. One major problem was that both the water and sewage plants were much too small to meet the community's needs. Its sewage lagoons, located only 100 feet from the river, quickly overflowed. While the interviewers were told that Attawapiskat understood that provincial standards "should" apply to their sewage lagoons, in the view of the band's technical services unit, they probably would not be met given their current state.

The Graver package plant installed for water treatment was also selected based on significant underestimation of per capita consumption demands. It is too small to treat the source water properly. High demand leads water to be drawn through the small system before proper sedimentation occurs. A poorly-designed distribution system also presented a problem; soil and sediment contaminated the water between the plant and the homes it serviced. There were problems with the intakes. With a supposed 20-year design life, the plant's capacity was surpassed in less than ten years.

The problem created by the undersized package plant was exacerbated by the poor initial quality of the source water. Attawapiskat's water is drawn from a small lake or slough which some of the people interviewed in this community described as a "swamp". The water source is shallow, heavy in organic materials, and is covered by some three feet of ice during the winter months, such that the water in it is often stagnant. Run-off from the landfill site on the reserve goes right into the lake. As well, petroleum contaminated soil was recently found at the site of the treatment plant. Deputy Chief Okimaw summarized the lake, the source of the water in the community's taps as "filthy".

None of the people interviewed could remember a time when the water flowing through the taps could be considered "potable". Boil water orders are in place nearly every month of the winter. The water is very hard, foul smelling, and the colour of urine. Perhaps eighty to ninety per cent of the community rely on bottled water for consumption, a very expensive commodity in this fly-

in community. Others, especially Elders, gather water directly from the Attawapiskat River. This creates problems of its own, since water from the river is prone to *giardia* contamination and should not be consumed unless it is first boiled.

Chief Gull could not definitely say that community members have ever become ill from the water, but suggested that he had heard of cases of diarrhoea which, without knowing the cause, could have been linked with poor water quality. Moreover, the consensus of the persons who were interviewed from the community was that fewer people were likely to become ill from Attawapiskat's communal water for the simple reason that no one actually drinks what flows from the taps.

Barely five years after the last project that was supposed to provide drinking water for Attawapiskat, another federally-funded water treatment project is currently being undertaken by Attawapiskat First Nation and DIAND. Deputy Chief Okimaw related to us that she had to lobby vigorously on the water quality issue to get the attention of Indian Affairs and Health Canada, eventually resorting to "taking a jar of putrid water" to the funding authority to show them what flowed through the community's taps.

Unfortunately, while DIAND has now been convinced of the need for more capital improvements to ameliorate Attawapiskat's drinking water situation, the funding of a new water project came at a considerable social cost to the community. No new money was allocated to the project; instead \$9.5 million in funding has been reallocated by DIAND away from money that had been earmarked for the construction of housing. Chief Gull advised that housing is in desperately short supply in Attawapiskat, with perhaps 121 families without their own homes. There are only about 300 homes in this community of 1700.

Initially, the federal plan was to simply provide further upgrades to the original water treatment plant. The discovery of contaminated soil on the site of the plant, however, led to the current plan to construct a new plant a few blocks from the current site.

An interim water supply has been provided to Attawapiskat by installing “Culligan units”- small reverse osmosis systems - at the hospital, school and on site at the water treatment plant. These provide better water than that which comes from the tap, but forces community members to fill containers and carry water to their homes from the plant for their drinking and cooking needs.

Chief Gull suggested that there was a systemic problem with DIAND’s approach to funding capital projects which always leads to an inferior final product. Although the First Nation pays engineers to commission preliminary studies and to design projects to provincial or EPA (U.S.) standards, when it comes time to build a plant, DIAND’s minimum level of service standards force bands without other resources to draw upon to cut corners and build substandard plants. The level of service standard calling for a capacity of 180 litres per person per day was given as an example of an unrealistic assumption which was a factors in the failure of the current Attawapiskat treatment plant. Provincial facilities are built to more than double this per capita capacity. Chief Gull considered it insulting that DIAND would assume that the daily needs of First Nation people could be met with less than half of what is considered standard in other communities.

DIAND capital funding policy dictates that rather than an appropriate site-specific design, the First Nation gets the cheapest model on the market. Rather than hiring the consultant offering the best project design, the First Nation is forced to award the contract to the firm submitting the lowest bid. Design is driven exclusively by budget, not by water quality standards and good engineering principles.

Operations

The Chief spoke highly of his water treatment plant operators and their level of commitment to their jobs under trying conditions. He suggested that the training support available from DIAND was inadequate, however. For example, a 16-week Northern College program once offered to the operators was taught by a plumber and didn’t focus on any of the knowledge and skills the operators actually needs.

Attawapiskat's three operators are not certified for the plant, nor do they have the option of participating in the Circuit Rider Training Program, given that the community's James Bay location is beyond the service area of that program.

Attawapiskat is heavily dependent on the federal funding it receives for capital projects, as it has a 80-85% rate of unemployment coupled with a high cost of living which make it impossible to fund capital projects without significant assistance. The poverty level in the community also has a detrimental effect on its ability to provide for operation and maintenance of water treatment facilities. Although the federal operations and maintenance (O&M) directive assumes that user fees will supplement the modest operating grant provided by DIAND, in Attawapiskat, only the school, hospital, nurse's residence and a few businesses can regularly pay user fees for water. In this remote northern community, the Chief and Council feel that they simply cannot demand that community members pay for the (poor quality) water they get from their taps when that money is needed for heating and food. Moreover, the level of funding for O&M would be inadequate, even if collection of user fees were feasible; in this community where hydro costs 89 cents per kilowatt hour, most of the O&M dollars for the water plant are spent on electricity.

Chief Gull indicated that Attawapiskat would welcome opportunities to further its own economic development and to become more prosperous and self-sufficient. The community's current economic reality is, however, that its health and well-being is heavily dependent on levels of federal funding. Current levels of O&M funding are inadequate to ensure clean and reliable drinking water.

In the view of the Chief, the federal government's fiduciary responsibility to aboriginal peoples requires a commitment to ensuring that the people of Attawapiskat can access tap water that is "no less drinkable than water flowing out of a tap in Toronto". He indicated that the highest provincial standards should be implemented to achieve this result.

CASE STUDY #2: BEAUSOLEIL FIRST NATION

Based on Interviews With: Kelvin Jamieson, P. Eng., Technical Services Advisor, Ogemawahj Tribal Council; Rick Monague (Operator) and Dale (Joe) Monague (Operator)

Size and Location of First Nation

Beausoleil First Nation, located on Georgian Bay approximately 16 kilometres west of Midland, Ontario, has a population of approximately 700. About 650 people live on the island (Christian Island) with about 11 homes located on the mainland at Cedar Point.

Infrastructure

Ninety-eight percent are of those living on the island are on a new water system which became operational on November 6, 2000. The remainder rely on private wells. All of the First Nation's residents rely on private septic systems; there is no communal sewage system for this community. Based on projected long-term growth of this community, a communal system might be needed within approximately 12 years.

Beausoleil First Nation has a good level of confidence in its water supply after the installation of the ZeeWeed immersed membrane water purification plant which came on line on November 6, 2000. The new plant was funded through DIAND capital funding and is designed to meet the most stringent drinking water quality regulations.

Before coming on-line, however, Christian Island was served by 19 pump houses that simply provided raw ground water to homes on the island. There was no formal operator or budget for repair of these pump houses. Rick Monague, one of the two operators currently employed by the First Nation, maintained the system by himself without training and on a volunteer basis "because no one else was there to do it".

Health Canada identified the water quality from the original ground water source as poor because of sodium and aluminium exceeding allowable levels under the *Canadian Drinking Water Guidelines*. It nevertheless took some 14 years from the first discovery of these water quality

results before the necessary studies, funding approvals and construction were completed and an operational water treatment facility was brought to Christian Island. Kelvin Jamieson, from his experience as a tribal council engineer assisting several First Nation communities in the Georgian Bay area, suggested that the Christian Island project actually moved relatively quickly when contrasted with other capital infrastructure projects funded by Indian Affairs. Once it was selected for capital funding, the project itself moved from the planning study stage in 1995/96 through to completion in late 2000.

While Beausoleil ultimately obtained a state-of-the-art facility, the First Nation was met with continuous resistance from DIAND to spending money. DIAND's first response to Beausoleil's request for funding for a water treatment facility was that the community should instead fix the pump-houses with the band's "minor capital" fund. Not until extensive documentation of water quality problems with impacts on human health was presented were more significant monetary commitments even considered. A conventional plant was the only option DIAND was initially willing to contemplate, until a *cryptosporidium* scare in nearby Collingwood in the early 1990's provided compelling evidence that conventional treatment would be inadequate.

Operations

Although its current facility is well-engineered and provides good quality water, Beausoleil First Nation does face problems in operating its plant, most notably with the level of O&M (operation and maintenance) funding it receives from DIAND. It was estimated that DIAND only provides about half of what is needed to run the plant effectively. Beausoleil First Nation Council's policy is to pay, at a Council level, the \$85 user fee that DIAND expects the First Nation's community members to contribute and has factored into its funding formula. Even after taking this into account, formula funding received for operation and maintenance still comes up about 50% short. Beausoleil "deals with" this by running its water treatment facility at a considerable deficit.

Beausoleil First Nation has about 80% unemployment and the interviewers were told that Council has a hard enough time coming up with even the \$85. per household per year it is

expected to contribute by the user fees it is unable to charge. It cannot do more without assistance – in Jamieson’s words “there is simply no squeezing blood from a stone”.

There are two operators for the Christian Island water treatment plant. They are both full time and are paid based on a 40 hour work week although they are also always on call 24 hours a day, 7 days a week. According to the band’s draft policy, one of these operators should be on the island and available to respond to a water treatment problem at all times. At the time of the interview, they were just beginning their training under the Circuit Rider training program and had also enrolled in MOEE programs. They were not yet provincially certified.

The operators responsible for the operation of the water treatment facility at Beausoleil First Nation are nevertheless more qualified than most First Nations operators. They have grade 11 and grade 12 education respectively, and some technical background. Both were working towards provincial certification. By way of contrast, the interviewers were told that in remote northern communities, a second or third grade education level is common and certification unheard of.

Kelvin Jamieson suggested generally that Circuit Rider training, while valuable, was not designed to deliver the full training an operator needed. In his view, an effective hands-on program would require a senior operator to be working on a daily basis with the trainees for four to six months; operators need to know more than just the *plant* - which is the focus of the Circuit Rider training program - they also need to know entire water *system* and how it works. Furthermore, all training offered to First Nations, including Circuit Rider, invariably comes after the operator is hired – this means that operators learn on the job with other people’s health on the line. While Circuit Rider was viewed as useful in helping operators to develop routines for operations and maintenance, it was still just a “stop gap measure” and not good enough to secure a safe water supply.

Views on Standards and Policies

Notwithstanding policy documents suggesting a federal commitment to “highest standards”, the interviewers were told DIAND does not enforce any real standards with respect to First Nations water treatment plants. There is no capacity within the federal system to check whether proper operations and maintenance are being carried out, whether standards are being met, or whether the needs of First Nations are covered by the levels of funding provided by DIAND. As an example, there was no federal or provincial inspection of the water treatment plant on Christian Island before it came on line.

In terms of water testing, the interviewers were told that there was biannual testing of the well water; the community health representative collected water results every two weeks and that the Christian Island water treatment plant was set up for on site testing. By testing on site, which is unusual, Beausoleil effectively assumed part of Health Canada’s mandate.

Health Canada, which still does some water testing, reports to the community but not to the funding agency. Its mandate is unduly restrictive - environmental health officers focus on bacteria levels at the plant and ignore the effectiveness of treatment at the end of the line, which is where it is most important. Health Canada also does not test raw water which means that they do not generate data that is of assistance in determining what might be necessary in a new plant design. Finally, Health Canada’s hesitancy to provide any advice to First Nations is a problem, as Jamieson related through an example from the experience of another First Nation which he assists as a tribal council engineer. On one occasion, Jamieson was called in after Health Canada had told Chief and Council that *e.coli* had been discovered at its day care, but had given no directions about what this meant and what the appropriate response was. When Jamieson called Health Canada asking them why they had taken no measures to address the threat, Health Canada simply responded that whether or not to shut down the water to the daycare was “a council issue” and not their job. In other words, Health Canada saw itself as a conduit of data – not of direction or advice on how that data should be acted upon.

Jamieson's view was that operation of plants should remain at the First Nation level but that there needed to be standardized terms and conditions applicable to all facilities as in the provincial system. Classification, certification, reporting and reviews of water treatment plants for compliance with clear standards, coupled with a mechanism for corrective action to be taken was needed. All of these elements were glaring omissions in the current system which leaves each First Nation on its own to deal with training and standards, and which attaches all operations and maintenance to an inadequate dollar figure.

As a further example of the failings of the current regime, Jamieson related that one of the other First Nation members of the Ogemawahj Tribal Council had been operating a water treatment plant for eight years and had kept absolutely no records. The plant's chlorinator was turned off or had broken down, its operator had one day of training, and (in keeping with operations and maintenance levels funded by DIAND) the band had only allocated sufficient funding for the operator to spend ten hours per week to run the plant. The operator in question was clearly incompetent. The treatment plant was treated "just as a big pump house" and had fallen into a state of disrepair. In Jamieson's view, the band council was not to blame – they simply did not know what needed to be done because there are no ground rules for council to follow.

DIAND formula funding was also seen as a root cause of problems with the state of water treatment in First Nation community, because funding levels assume that the job of a water treatment plant operator is a part time job for one person. Beausoleil has two operator requirement built into its own policy, and Jamieson suggested that this was a minimum necessity for safe operation of the plant. Some jobs require two persons for safety reasons - for example cleaning out a reservoir (which is a confined space). Moreover, neglect of operations and maintenance issues wastes resources. Inadequate operation and maintenance funding and the inadequate systems in place to monitor water treatment plants may be the reason why plants only last eight to ten years in my First Nations when they should last much longer.

CASE STUDY #3: SANDY LAKE FIRST NATION

Based on Interviews With: Deputy Chief Harry Meekis, Joseph C. Meekis (Executive Director/Project Manager), Barbara Fiddler (Band Administrator) and Derek Mosketaywenene (Water Plant Operator)

Size and Location of First Nation

The community of Sandy Lake First Nation is located in northwestern Ontario near the Manitoba border. It is classified geographically as remote with special access (Zone No. 4, Public Works Canada cost reference manual). The nearest large commercial centre is the City of Winnipeg, which is located approximately 400 kilometers southwest. Goods and services are may be brought into the community only by air except for during one month each winter when conditions allow for access by a “winter road”. DIAND lists the total registered population in Sandy Lake is approximately 2,071 (DIAND, November 2000).

Water and Sewage Infrastructure

Approximately 80% of the homes are connected to the water and sewer pipe systems. Non-residential users of the communal water treatment plant include two schools, 21 “teacherage” (teacher’s residences), a nursing centre and nurse’s residences, a Northern Store, a learning centre, a training centre, and the administration building.

The water distribution system (WDS) is designed to provide drinking water and minimum fire protection.

Water for the community is drawn from Severn River, which flows to Hudson Bay. The intake pipeline, which is 250 mm in diameter high density polyethylene pipe supplies raw water to a treatment plant. The intake structure consists of stainless steel slots, which are 2 mm in diameter with slot velocity of approximately 0.43 ft. per second. The intake is designed to draw water from the river by gravity. Its capacity is estimated to be 800 imperial gallons per minute. The raw water is high in natural organic material, which causes high colour.

The water treatment plant consists is one package Ecodyne Graver monoplant. This type of plant is known as a conventional package plant, which requires chemicals to remove particulate matter and chlorine to kill pathogens such as *e. coli*. It is not capable of killing protozoa cysts such as *cryptosporidium* and *giardia*.

While from a community perspective water quality problems were not considered an issue, the interviewers were informed that capacity was a concern, as the plant was not producing to its capacity of approximately 250 U.S. gallons per minute. The reasons for this were partly lack of poor mixing of chemicals, lack of optimization and inherent design features which make it difficult to produce water at high rates. The filter backwash cannot be easily optimized to expand the filter media, there is a lack of an opportunity to filter to waste after each backwash cycle, and there is lack of redundancy regarding filters and backwash pumps.

Mr. Mosketaywenene, the plant operator advised that he was conducting jar testing to optimize the chemical addition. However, Mr. Mosketaywenene determined that the constraint to produce sufficient water and achieve clarification of the water required a mixing mechanism in front of the flocculation tanks. Both Joe Meekis and the plant operator expressed interest in undertake further optimization studies in order to determine the performance of the plant, although there is no current funding to do so.

During the site visit, it was observed that there was no documentation to indicate that the quality of water from the source and up to the point where it enters the WDS was being monitored, in terms of bacteria, taste, colour, pH and residual chlorine. It was also noted that Health Canada's role was not well understood by the First Nation.

Operations

From a community perspective, operation and maintenance costs and processes were the primary issue with respect to water treatment. Sandy Lake First Nation is dependent on a one-month window each year where conditions are such that goods can be brought in by an "ice road". The First Nation attempts brings in all of the chemicals needed for the operation of the water

treatment plant during this month. However, if there is unforeseen inclement weather, or if the First Nation miscalculates its annual needs, it becomes extremely difficult to obtain the needed chemicals. Transportation by air is exponentially more expensive than road transportation

Barbara Fiddler advised that there is an approximately \$125,000 annual discrepancy between levels of DIAND formula funding for O&M and the actual cost of running the water plant because DIAND's cost manuals are not in line with actual costs, particularly those incurred by remote communities. Sandy Lake has passed a resolution which would implement the \$85 user fee set by DIAND as the expected contribution by the First Nation to the cost of operating a water treatment plant. However, even if all fees could be collected, this would only provide \$40,000 in additional resources and Sandy Lake First Nation would continue to suffer a shortfall of \$85,000/year.

Sandy Lake has tried to address the issue of its O&M costs with DIAND, but that such efforts have been consistently futile. The First Nation is always asked for more proof of the disparity between actual and projected costs but no results ever seem to materialize. A standard response to Sandy Lake's concerns about the inherently higher cost of operating a plant in a remote community like Sandy Lake is that this is addressed by a "remoteness factor" in the general funding formula. However, to the knowledge of the Sandy Lake community, no remote First Nation has ever been consulted on how this remoteness factor should be calculated. As a formula, it provides no flexibility to respond to exceptional circumstances such as a winter when the ice road cannot be used or a sharp rise in fuel costs.

An additional operational issue identified as one of concern to Sandy Lake First Nation was training – not only for hands on instruction on the operation of the plant but in management issues like budgeting under the unpredictable weather conditions that this First Nation operates under. The interviewers were told the if operators or administrators had a better sense of what was needed in order to operate the plant, more appropriate planning could be done in advance and exorbitantly high air transportation costs could be minimized.

The operators of the Sandy Lake treatment plant, of which there are two full time persons working Monday to Friday (and on a “as needed basis” on the weekend, if for example, there is a water shortage) have not been formally trained. After the plant was built, some trainers did come in from a private firm of contractors formerly affiliated with the Ministry of Natural Resources to provide training for “a few weeks here and there” over a year-long span. The hands on training provided was considered invaluable, but there has been operator turnover since that time. More training would be very much desired; if funding were available formal provincial certification would be the favoured route. Sandy Lake would also like to increase the number of operators so that trained people were available for backup. With the existing shortfall on the operation and maintenance front, however, neither increasing operators or seeking formal training was seen as possible, although enrolment in Circuit Rider Training might be considered.

Views on Standards and Policies

Although there is no current or planned water or sewage treatment project in Sandy Lake, the First Nation is going through a design-build capital plan in connection with the construction of a new school. Interviewers were told that this process is considered better than the slow expensive course that capital funding usually follows. It was suggested that a similar approach to water treatment funding would be an improvement; i.e., a single contractor would be employed to both design and build the plant, thereby losing the inefficiencies and other problems related with having preliminary and effective approval stages separately funded and staffed.

Streamlining any capital approval process was viewed as particularly important by Sandy Lake because of the remoteness of the community. Unless the February/March window of opportunity for using the ice road is capitalized upon, a project can be delayed for an entire year waiting for that window of opportunity to open again. This was cited as another example of how the unique circumstances of remote northern communities required special consideration by the funding authority.

CASE STUDY #4: SIX NATIONS OF THE GRAND RIVER TERRITORY

Based on Interview With: Dayle Bomberry (Director, Public Works)

Size and Location of the First Nation

The Six Nations of the Grand River First Nation occupies the Six Nations and Glebe Farm Reserves which are located 8 km southeast of Brantford and on the north shore of the Grand River southeast of Brantford. The population living on-reserve is approximately 10,000.

Infrastructure

The Six Nations communal water treatment and distribution system draws water from the Grand River. Three submersible pumps and a 200mm diameter high density polyethylene intake pipe supply raw water to the treatment plant located approximately 300 metres from the water intake structure. The communal system primarily serves the Ohsweken village. Users include schools, a shopping and services plaza, businesses, an arena and about 1,500 homes. About 25% of the community gets water from the communal system either in their residences or by virtue of attending work or school in the village. Those Six Nations residents who live too far from town to be on the communal system rely on wells or cisterns for their water needs.

The water treatment system consists of two package Ecodyne monoplant water treatment units. The design was taken off the market approximately two years after it was purchased by the community. As a conventional package plant, it requires chemicals to remove particulate matter and chlorine to kill pathogens such as *E-coli*. Its filters require back washing at regular intervals and is designed in such a way that continuous monitoring of turbidity from each filter compartment is impossible. The plant is not capable of killing protozoa cysts such as *giardia* and *cryptosporidium* and is not capable of meeting current and anticipated water quality standards. Dayle Bomberry related that in addition to its age and obsolescence, the design has known safety hazards. Six Nations is currently in the process of commissioning a study for a

new treatment plant to replace this system. Six Nations would like to expand its service area, but as the existing system is outdated and at its maximum capacity, this is not currently possible.

Technically adequate facilities are of concern as the Ohsweken water treatment plant is one of the last to take water from the Grand River (being downstream from other communities such as Brantford) and its intake is located at a point in the river where clay and silt are a consideration. As well, while the First Nation's regular testing of its water confirms that the water is currently safe for consumption, as with any surface water source, the potential for protozoa is always present.

The community also has a three cell lagoon sewage system, some components of which are 35 years old. Septic services are a real problem for the Six Nations community – Bomberry related that the state of many residents' private septic systems are in a severe and potentially dangerous state of disrepair. As a stop gap measure, the First Nation's Public Works department operates a septic truck on a fee-for-service basis pumping out private septic systems and transporting the sewage to the lagoons which serve the village. The septic truck runs forty to fifty hours per week. The demand for this service ties up one Public Works employee full time and prevents the department from being able to use the employee in the capacity of a treatment plant operator where his help would be of great benefit. Bomberry estimates that two trucks running full time could barely keep up with the community's demand.

Given high demand, and the age of the system, Six Nations' sewage lagoons are approaching maximum capacity with the concomitant risk of contaminating the ground source (which is the source of drinking water for those not on the community water system).

The communal water and sewage systems have roughly the same coverage area. Although fewer residences and businesses are directly connected to the sewage system, the fact that the sewage truck picks up sewage from other locations means that, overall, more of the community is covered by the sewage plant than by the water treatment plant.

There is no backup generator at the water treatment plant, which is a concern. Another concern is that gasoline contamination has been found in the sewage lagoons.

Operations

There are two full-time operators, who are responsible for both the water treatment plant and sewage system. They work 40 hours per week and are supplemented by the septic truck driver. All work Monday to Friday. One operator has a Level I MOEE certificate and has been in his position for 21 years. The other, who has worked in Public Works at Six Nations for two years, is working towards certification.

Operation and maintenance of the sewage and water services provided in the Six Nations community is heavily dependent on DIAND funding. Other than modest user fees (a flat fee of \$20. for two months and up to 3,000 gallons plus a surcharge of \$1.99 per 1,000 gallons for additional use), there is no other funding source for this community service. Six Nations does not have a “tax base” per se, and like many First Nations has very high unemployment rates. The community currently runs a deficit of over \$100,000.00 on its operation and maintenance costs.

Water testing is a very high internal priority for the Six Nations community because of an NDMA scare in 1993, shortly after the Hagersville tire fire, which occurred not far away. Because of this community priority, Public Works takes daily water samples for testing - exceeding the provincial requirement. The samples are analyzed at a provincial health lab in Hamilton; if there is any problem, water is trucked in. While very regular testing in a provincially accredited lab provides quality assurances, Bomberry also relates that it is a strain on resources since it means that one of the operators is continually on the road delivering water samples to the lab rather than available to help with hands-on operations, to do maintenance, or to attend training.

Bomberry identified human resources and training for operators as the primary operational concerns with its water and sewage systems. The Six Nation community cannot afford for a 24

hour coverage of the water treatment plant, nor can it afford the time and financial resources to send its operators for regular training. With operators regularly delivering water samples to Hamilton, collecting sewage from private homes, and coping with the inevitable breakdowns that occur with an ageing plant, it is simply impossible to send them out for training upgrades. More staff is needed, but given that the operations and maintenance budget is already overdrawn, hiring another operator is not feasible.

Views on Standards and Policies

The biggest concerns of Six Nations with its facilities are:

1. underfunding generally;
2. the age of the current system, i.e., Six Nations has to spend half the cost trying to make the old system work; and
3. the lack of designated and recognized training for First Nation water operators along the lines of the certification program that the province requires for its operators.

All three are closely tied to DIAND policies on major capital and operations and maintenance funding.

In terms of major capital, Bomberry related that Six Nations had met with continuous resistance from the federal government to spending any money on new facilities. While that the funding authority's need to "go by the books" is understandable and fair, he complains that DIAND's funding arm lacks the requisite knowledge to evaluate the requests placed before it. As an example, he related that he recently spent some three months going back and forth trying to get adequate terms of reference for the current study. DIAND kept coming back to its corporate manuals and demanded repeated explanations as to why anything not covered in those manuals was necessary.

In terms of operations and maintenance funding, Bomberry suggested that dollars allocated for First Nations facilities should follow the new costs of running such facilities, and that they fall short of doing so under the outdated DIAND formula funding model.

The key overall changes needed in the “federal system” of water and sewage infrastructure management were, the interviewers were, according to Bomberry, for DIAND to better listen to First Nations people, and to move from a “crisis management approach” towards a program stressing a preventative and sustainable approach to providing potable water to First Nations. Some First Nations water systems are in “third world” condition. The Six Nations facility is among the more advanced notwithstanding that it is outdated and in need of upgrading.

By contrast, Bomberry’s view was that the provincial system works well, is designed on solid principles, and that there was no sound reason why First Nations should not be following it. He felt that Six Nations would be amenable to more regulation of its water treatment facility if it was properly funded to meet those expectations.

As a point of contrast between the federal and provincial systems, Bomberry pointed out the discrepancy in groundwater data. No data is collected at the federal level and due to the disinterest of the province which does not regulate First Nations, almost no First Nations water data is available. There are, accordingly, otherwise excellent groundwater flow maps of Ontario where First Nations are just a blank spot as if the water suddenly ceased to flow at the boundaries of the reserve.

Chapter 6: Perspectives from Aboriginal Knowledge Holders

Presented in the following pages is a collection of comments received from ten Aboriginal people identified as holders of Aboriginal knowledge on the subject of water. They are loosely grouped under several themes which emerged from the interview responses and discussions. From time to time, direct quotes were taken from individuals or authors to highlight certain points. For the most part, however, the actual words have been paraphrased.

The Significance of Water

Water is a sacred thing. This is reflected in many traditional beliefs, values and practices. Ann Wilson, Elder

Water is, and always has been, viewed as precious by indigenous people. Concern for water is not new in our communities. It hasn't just come about because of the pollution we face today. Water has always been, and continues to be, recognized as a fundamental life-giving force. While the paragraphs on to provide further details about the significance of water, perhaps the most telling expression below go of this is that, without exception, all those interviewed stated that water *is* life. They did not state merely that water is closely associated with life, or that it is part of life, but rather that water is life itself.

Water in our traditions has cleansing and purifying powers. It is the giver of life with which babies are born. It is imperative in our traditions to keep the water clean so it can continue to fulfil its purpose. Imperative also is the paying of respect to water. This is frequently done by offering tobacco to the water. Such intimate and spiritual ties to water and the rest of the environment are reflected in our languages.

Water has significance symbolically as well. For example, when offering condolences for sorrow - the act of drinking water cleans out the sorrow.
Norman Jacobs

Recognizing the vital nature of water to our survival is the beginning of a healthy perspective. Water is the blood of mother Earth. As in the blood which circulates throughout in the body,

nutrients flow into the land via water. Without our blood serving its proper functions, we would die. It is the same with water. If it cannot perform its functions, we will perish.

In addition to people, water supports the lives of other beings or aspects of Creation that are important in the whole web of life. Again, indigenous people benefit from this life-giving support. For example, there are medicines under and around the water. Water is the basis of life; we cannot live without it. We have a responsibility to look after it.

Water is the blood of Mother Earth - without water she can't fulfil her responsibilities. Carol and Norman Jacobs

Water has tremendous significance before birth, during the birthing process and after birth. Water is used in child rearing as well. Water is even used to discipline children (e.g. a short squirt given immediately after child has ignored three warnings, instead of dragging them off for a spanking), as it gets the message across that a boundary has been crossed without hurting them.

Water was also used a medicine, or as a part of medicines. It has medicinal properties and should be collected in a certain way. For example, it should be taken early in the morning and you should dip with the flow of the water. If you dip in the upstream direction it interrupts the balance, the flow. We are never supposed to upset nature.

Water is also highly significant in the Creation stories, where it plays a life-giving role. For example, in the Haudenosaunee Creation story, the woman who fell down to Earth was saved by "water beings".

Respecting Water

Tobacco is offered to water in recognition of the water's life-giving forces. Water forms an integral part of many ceremonies. In the Creation, people were given instructions on how to respect water. These duties continue to be taken very seriously and form an important part of daily life for many Aboriginal people. If water is not respected, the consequences are often

disastrous. We have seen the impacts of poor water quality and we have not been prepared to deal with them. There needs to be more awareness that water is essential for life and should be treated as such.

Water as part of Creation has a right to be clean, not interfered with. Water has as much right to be as we do. But because the water can't speak for itself, we have to speak for it. We have to advocate for it. Carol and Norman Jacobs

Viewing the Ecosystem Holistically

If we want to take care of water, we must look at the whole ecosystem, not just water itself. A holistic approach is required. We must look at the life that water supports (plants/medicines, animals, people, birds, etc.). We must realize that the rains that carry the responsibility of cleansing the Earth, now bring pollution along with the water (e.g. acid rain).

It is very important to understand and view the environment holistically; one thing is not the problem. The challenges we face are a result of many things that must be considered holistically, looking at how they relate to each other. Everything is connected to everything else. Lillian McGregor

Our traditions tell us that we must look at all elements of Creation (as acknowledged in the Thanksgiving Address) equally and holistically. We cannot just focus on one element, fix that element (or think we fixed it) and forget about the rest. They are all connected. We need to look at the big picture. Although it is essential, we don't rely only upon the water to grow food, for example. We also need the sun and soil for life to continue. All is important and this is understood in our tradition.

If one part of the system, such as water, is out of balance, then the whole system will be out of balance. This creates an unhealthy ecosystem and all aspects will suffer.

Defining the Problem

It is not water that is the problem. It is what people are putting in the water that is the problem. It is what is happening to water that is the problem.
Lillian McGregor

My grandma told me that there would come a time when we would have to go a long way to buy water - she sounded almost like we were going to have to fight for it. I was young then, a teenager, and I couldn't imagine it then, but now here we are buying water. Carol Jacobs

Many people identify “water quality” as their most significant environmental problem, when in fact the problem is not water itself, but what has been done to water, by people.

The current state of water is poor. Poor water quality has affected people in tragic ways, and Walkerton is just one example. People do not trust water anymore. It is not water that must be distrusted, but the people who contaminate it, who do not care for it. If one does not have respect for water, as larger, dominant society seems not to, then it cannot perform its duty as a giver of life. It is abused and contaminated. Industries pollute water and governments let it happen. They fail to realize that we are all connected, everything, animals, birds, plants, etc., and we all rely on the water. It has been this way for awhile and now people notice and are starting to panic. It seems now that people are finally paying attention.

People are fighting over water and starting to ration it. People set boundaries on water and hostilities are surfacing in relation to water. It is viewed as a “natural resource” rather than a gift from the Creator. Society's relationship with water is characterized by fear, anger and concern. Water is viewed as a commodity; there are proposals that surface now and again about exporting water from Canada to the United States or other places in the world where water has been degraded and cannot be trusted. There are enormous battles over water these days. People's relationship with water is thus distorted and will not lead to increased water quality. By degrading water with dams, pollution, etc., we have interfered with water's ability to cleanse itself and provide life for the rest of Creation. We have interfered with the natural processes that ensure the continuity of life.

Duties and Responsibilities

We have simply let the interviewees speak for themselves on this topic. No further paraphrasing or interpretation is required.

We all have a collective responsibility to protect the environment – there aren't specific people responsible for specific parts of the environment.

Carol and Norman Jacobs

Everyone has a responsibility to care for the water. Women, however, carry the responsibility to talk to the water.

Ann Wilson

Our relationship to water is almost like a marriage – you have a responsibility to your partner. Without the water we wouldn't be here – we have to look after it. It's possible for us to be selfish, without a thought as to what's around us, but the water (and the environment) wasn't put there for our pleasure without any responsibility attached. We have to look after it – it's the responsibility of all of us.

Carol Jacobs

Seeking Solutions

There is no quick fix. Lillian McGregor, Elder

Approaches to resolving the problem of poor water quality must be holistic. Forms of water (lakes, streams, underground rivers, creeks, etc.) are all related. Because water quality is influenced by so many factors, it is important to realize that there is no easy solution to this problem.

While industry is main polluter of water, governments and industry must cooperate and remove or control the forces that pollute water. Just as important, however, is the fact that we all have a responsibility to keep the water healthy. Wholesale changes are required, and long term solutions must be considered. There is no simple answer. We all have a role if we value water and wish to make a difference.

Chapter 7: Findings and Recommendations

FINDINGS

1. The federal government has primary jurisdiction over water and sewage treatment in First Nation communities. Ontario's comprehensive water and sewage regulatory regime is constitutionally inapplicable to First Nations.
2. The differences between the federal and provincial systems are marked and are problematic. While Ontario's system may be in need of improvement, there is really no comparable federal system in place at all to support First Nations; there is only a poorly coordinated and incomplete patchwork of programs and services.
3. There have been few improvements in the overall level of quality of the federal government's water and sewage delivery to First Nations since 1996, when the Royal Commission on Aboriginal Peoples found that there was "authoritative evidence that community services in First Nation communities are a direct threat to health".
4. Federal departments have downloaded their responsibility for on-reserve water-works to First Nation governments without providing guidance or resources to build capacity to assume those responsibilities within First Nation communities. In particular, funding levels for capital construction and operation and maintenance fall short of what is necessary to build, operate and maintain effective water treatment facilities.
5. The downloading of unlimited responsibility for limited funds, which DIAND expressly purports to do to First Nation governments in its standard form funding contracts, is unacceptable and inconsistent with the fiduciary duty to First Peoples which is owed by the federal government.
6. Federal policy relating to water treatment infrastructure on reserves has created a dangerous state of affairs for the efficacy of on-reserve water treatment. In particular, safe water supplies are threatened by the fact that:

(a) Training of First Nations water treatment plant operators is done on an *ad hoc* basis and, almost without exception, *after* the operator has been hired. Few First Nation water treatment plant operators are trained to the most basic level that Ontario accepts as standard;

(b) Because capital funding from DIAND is based on minimum “level of service standards” (LOSS) rather than sound engineering principles, water treatment plants are built that are not appropriate and adaptable to local conditions and which may not provide safe water; and

(c) Operation and maintenance funding levels fall far below the actual costs of operating a modern water treatment facility, and have been developed by DIAND without any meaningful consultation with First Nations.

6. First Nations embrace the concept of caring for water resources and have significant aboriginal rights over water which are affirmed and protected by the Canadian Constitution. Insufficient respect has been paid to date within Canadian society for the value of aboriginal knowledge of and perspectives on water and for the right of aboriginal peoples to safe and clean water.

7. First Nation perspectives and concerns about water have been systematically ignored, and an intolerable situation has been imposed by governments whose own policies are driven by budget rather than by sound judgment as to appropriate methods of achieving and maintaining safe and clean water.

RECOMMENDATIONS

1. The federal government must provide more money and better infrastructure to support First Nation efforts to provide clean and reliable drinking water to their communities. In particular, operation and maintenance funding needs to be increased and capital projects designed to the higher standards which have been implemented in the rest of the province of Ontario rather than to the substandard “level of service standards” currently used by DIAND.

2. The federal government should ensure that individual First Nations are provided with better institutional support in the form of proper training, regular testing and monitoring, and

professional guidance in the design and construction of water treatment plants. The institutional framework should be practical, comprehensive, and designed to respect and enhance First Nation self-government rights and aspirations.

3. Ontario, and more particularly the provincial MOE, has considerable existing infrastructure to assure the attainment of water quality standards. This is far superior to anything that exists federally for First Nations at the current time. Given that Health Canada and DIAND already refer to these standards, and given that water is a resource shared by Ontarians residing both on and off reserve, Canada and First Nations should consider forging more direct connections between on-reserve facilities and Ontario's system of certification and monitoring of water treatment plants to help to fill the federal infrastructure gaps.

4. Tripartite government-to-government negotiation involving First Nations as equal participants are a constitutional and practical precondition to instituting any changes which would see closer integration of on-reserve water treatment facilities and the provincial system of monitoring and certification. Direct and meaningful involvement of community active groups, Elders and band leadership in the decision-making process is required in shaping the future direction of water treatment and management in First Nation communities.

5. Full and meaningful First Nation participation should, moreover, become a standard feature of all water-related decision-making processes with the potential to impact First Nations in Ontario. "Acceptable levels" - of pollution, of water treatment, of funding - should not be externally imposed by other governmental bodies on First Nations. First Nations have an inherent right to fully participate in decision-making on water quality issues which affect their ways of life, and possess valuable knowledge of water which they are willing to share if non-natives are willing to listen.

6. Regardless of the direction that future initiatives may take, the federal government must recommit to its past promises and to its fiduciary duty to provide sufficient resources to First Nations so that a safe and reliable source of drinking water is available to all Ontarians residing in First Nation communities.

BIBLIOGRAPHY

Abele, F. and Graham, K., "High Politics is Not Enough: Policies and Programs for Aboriginal Peoples in Alberta and Ontario" **Chapter 5 In:** Hawkes, D.C. (ed.) *Aboriginal Peoples and Government Responsibility* (Ottawa: Carleton University Press, 1989).

Akii Kwe. *Minobimaatisiwin - We Are to Care for Her. Position Paper from Women of Bkejwanong* (Walpole Isl.: Walpole Island First Nation, 1998)

American Water Works Association, *Water Quality and Treatment, A Handbook of Community Water Supplies*, 5th ed. (AWWA, 1999).

Anderson, K. *A Recognition of Being: Reconstructing Native Womanhood* (Toronto: Second Story Press, 2000)

Arquette, M. "The Animals" **In:** Haudenosaunee Environmental Task Force, *Words That Come Before All Else: Environmental Philosophies of the Haudenosaunee* (Cornwall Island, ON., Native North American Travelling College, 1999)

Assembly of First Nations (AFN). *Reclaiming Our Nationhood: Strengthening Our Heritage. Report to the Royal Commission on Aboriginal Peoples* (Ottawa: AFN, 1993)

Benton-Banai, E., *The Mishomis Book: The Voice of the Ojibway* (Hayward, WI.: Indian Country Communications, 1988).

Cajete, G. *Igniting the Sparkle: An Indigenous Science Education Model*. (Skyand, NC.: Kivaki Press, 1999).

Canada, *Royal Commission on Aboriginal Peoples*, Volume 3: Gathering Strength " (Ottawa: Public Works and Government Services, 1996).

Canada, *Royal Commission on Aboriginal Peoples*, Volume 5: "Renewal: A Twenty-Year Commitment" (Ottawa: Public Works and Government Services, 1996).

Cook, K. "Grand Mother Moon" **In:** Haudenosaunee Environmental Task Force, *Words That Come Before All Else: Environmental Philosophies of the Haudenosaunee* (Cornwall Island, ON.: Native North American Travelling College, 1999). [pp. 139-142]

Delisle, C., and Bouchard, M. (eds), *Managing the Effects of Hydroelectric Development. (Proceedings of a Symposium, April 6-7, 1989)* (Toronto: Canadian Society of Environmental Biologists, 1990).

Department of Indian Affairs and Northern Development (DIAND), *Community Drinking Water and Sewage Treatment in First Nation Communities* (Ottawa: Ministry of Public Works and Government Services, 1995)

Department of Indian Affairs and Northern Development (DIAND), *Gathering Strength - Canada's Aboriginal Action Plan* (Ottawa: Minister of Public Works and Government Services Canada, 1997).

Department of Indian Affairs and Northern Development (DIAND), *Water Quality Issues in First Nation Communities in Ontario: Draft Report* (unpublished draft of DIAND Funding Services, Ontario Region, July 31, 2000)

Department of Indian Affairs and Northern Development (DIAND), *Water Quality Issues in First Nation Communities in Ontario: Phase I Report* (unpublished draft of DIAND Funding Services, Ontario Region, October 25, 2000).

Department of Indian Affairs and Northern Development (DIAND), *Water Quality Issues in First Nation Communities in Ontario: Short Term and Medium Term Task Team Reports* (unpublished and uncollated drafts of DIAND Funding Services, Ontario Region, December 2000/January 2001).

Fixico, D., *The Invasion of Indian Country in the Twentieth Century: American Capitalism and Tribal Natural Resources* (Niwot, CO.: University Press of Colorado, 1998).

Hogg, P.W., *Constitutional Law of Canada*, 4th ed. (Toronto: Carswell, 1997).

IFNA-3DN Engineers Ltd., *Water Treatment Processes with Performance Criteria* (December 1998).

Jacobs, D. "Bkejwanong - The Place Where the Waters Divide: A Perspective on Earth, Water, Air and Fire" **In:** McNab, D. (ed.). *Earth, Water, Air and Fire: Studies in Canadian Ethnohistory*. (Waterloo, ON.: Wilfrid Laurier University Press, 1998)

Jacobs, J., "The Thunderers" **In:** Haudenosaunee Environmental Task Force, *Words That Come Before All Else: Environmental Philosophies of the Haudenosaunee*. (Cornwall Island, ON.: Native North American Travelling College, 1999).[pp. 136-138]

Johnston, B., *Ojibway Ceremonies*. (Lincoln, NK.: University of Nebraska Press, 1982).

Johnston, B., *Ojibway Heritage: The ceremonies, rituals, songs, dances, prayers and legends of the Ojibway*. (Toronto: McClelland and Stewart, 1977).

McNab, D. (ed.), *Earth, Water, Air and Fire: Studies in Canadian Ethnohistory*. (Waterloo, ON.: Wilfrid Laurier University Press, 1998).

Mercredi, O., and Turpel, M., *In the Rapids: Navigating the Future of First Nations* (Toronto: Penguin Books, 1993).

Mitchell, M., "Creation Story" **In:** North American Indian Travelling College, *Traditional Teachings* (Cornwall Island, ON.: North American Indian Travelling College, 1984). [pp. 3-13]

Ontario Ministry of the Environment, *Drinking Water in Ontario: A Summary Report* (Toronto: Queen's Printer for Ontario, 2000).

Ontario Ministry of the Environment, *Guide for Applying for Approval of Municipal and Private Water and Sewage Works under Sections 52 and 53 of the Ontario Water Resources Act* (March 1998).

Pratt, A., "Federalism in an Era of Aboriginal Self-Government" **Chapter 2 In:** Hawkes, D.C. (ed.) *Aboriginal Peoples and Government Responsibility* (Ottawa: Carleton University Press, 1989).

Puxley, P. "The Colonial Experience" **In:** Watkins, M. (ed.). *Dene Nation - the colony within* (Toronto: University of Toronto Press, 1977). [pp. 103-119]

Ransom, J., "The Waters" **In:** Haudenosaunee Environmental Task Force, *Words That Come Before All Else: Environmental Philosophies of the Haudenosaunee* (Cornwall Island, ON.: Native North American Travelling College, 1999). [pp. 25-43]

Ransom, J. "Building New Partnerships Between Canadians and First Nations Societies to Achieve a Sustainable Seventh Generation for All Peoples" **In:** Shrubsole, D., and Mitchell, B. (eds.), *Practising Sustainable Water Management: Canadian and International Experiences* (Ottawa: Canadian Water Resources Association, 1997). [pp. 61-74]

Royal Commission on Aboriginal Peoples (RCAP), *People to People, Nation to Nation: Highlights from the Report of the Royal Commission on Aboriginal Peoples* (Ottawa: Minister of Supply and Services, 1996).

Ross, R., *Returning to the Teachings: Exploring Aboriginal Justice* (Toronto: Penguin Books, 1999).

Thorpe, D. (ed.), "An Interview with Renee Senogles (Anishinaabe)" **In:** *People of the Seventh Fire: Returning Lifeways of Native America*. (Ithaca, NY: Akwe:kon Press, 1996). [pp.170-179]

T'Seleie, F., "Statement to the Mackenzie Valley Pipeline Inquiry" **In:** Watkins, M. (ed.), *Dene Nation - the colony within* (Toronto: University of Toronto Press, 1977). [pp. 12 –17]

Tyler, K.J., “Indian Resources and Water Rights”, [1982] 4 C.N.L.R. 1.

Waldram, J., *As Long as the Rivers Run: Hydroelectric Development and Native Communities in Western Canada* (Winnipeg: University of Manitoba Press, 1988).

Wilkins, K., “Still Crazy After All These Years: Section 88 of the Indian Act at Fifty”, (2000) 38 *Alberta Law Review* 458.

XCG Consultants Ltd., *Guidance Manual for First Nations Wastewater Treatment Plant Monitoring* (1999).

Appendix A – Haudenosaunee Thanksgiving Address

Thanksgiving Address - Greetings to the Natural World

The People

Today we have gathered and we see that the cycles of life continue. We have been given the duty to live in balance and harmony with each other and all living things. So now, we bring our minds together as one as we give greetings and thanks to each other as people.

Now our minds are one.

The Earth Mother

We are all thankful to our Mother, the Earth, for she gives us all that we need for life. She supports our feet as we walk about upon her. It gives us joy that she continues to care for us as she has from the beginning of time. To our mother, we send greetings and thanks.

Now our minds are one.

The Waters

We give thanks to all the waters of the world for quenching our thirst and providing us with strength. Water is life. We know its power in many forms-waterfalls and rain, mists and streams, rivers and oceans. With one mind, we send greetings and thanks to the spirit of Water.

Now our minds are one.

The Fish

We turn our minds to the all the Fish life in the water. They were instructed to cleanse and purify the water. They also give themselves to us as food. We are grateful that we can still find pure water. So, we turn now to the Fish and send our greetings and thanks.

Now our minds are one.

The Plants

Now we turn toward the vast fields of Plant life. As far as the eye can see, the Plants grow, working many wonders. They sustain many life forms. With our minds gathered together, we give thanks and look forward to seeing Plant life for many generations to come.

Now our minds are one.

The Food Plants

With one mind, we turn to honor and thank all the Food Plants we harvest from the garden. Since the beginning of time, the grains, vegetables, beans and berries have helped the people survive. Many other living things draw strength from them too. We gather all the Plant Foods together as one and send them a greeting of thanks.

Now our minds are one.

The Medicine Herbs

Now we turn to all the Medicine herbs of the world. From the beginning they were instructed to take away sickness. They are always waiting and ready to heal us. We are happy there are still among us those special few who remember how to use these plants for healing. With one mind, we send greetings and thanks to the Medicines and to the keepers of the Medicines.

Now our minds are one.

The Animals

We gather our minds together to send greetings and thanks to all the Animal life in the world. They have many things to teach us as people. We are honored by them when they give up their lives so we may use their bodies as food for our people. We see them near our homes and in the deep forests. We are glad they are still here and we hope that it will always be so.

Now our minds are one

The Trees

We now turn our thoughts to the Trees. The Earth has many families of Trees who have their own instructions and uses. Some provide us with shelter and shade, others with fruit, beauty and other useful things. Many people of the world use a Tree as a symbol of peace and strength. With one mind, we greet and thank the Tree life.

Now our minds are one.

The Birds

We put our minds together as one and thank all the Birds who move and fly about over our heads. The Creator gave them beautiful songs. Each day they remind us to enjoy and appreciate life. The Eagle was chosen to be their leader. To all the Birds-from the smallest to the largest-we send our joyful greetings and thanks.

Now our minds are one.

The Four Winds

We are all thankful to the powers we know as the Four Winds. We hear their voices in the moving air as they refresh us and purify the air we breathe. They help us to bring the change of seasons. From the four directions they come, bringing us messages and giving us strength. With one mind, we send our greetings and thanks to the Four Winds.

Now our minds are one.

The Thunderers

Now we turn to the west where our grandfathers, the Thunder Beings, live. With lightning and thundering voices, they bring with them the water that renews life. We are thankful that they keep those evil things made by Okwiseres underground. We bring our minds together as one to send greetings and thanks to our Grandfathers, the Thunderers.

Now our minds are one.

The Sun

We now send greetings and thanks to our eldest Brother, the Sun. Each day without fail he travels the sky from east to west, bringing the light of a new day. He is the source of all the fires of life. With one mind, we send greetings and thanks to our Brother, the Sun.

Now our minds are one.

Grandmother Moon

We put our minds together to give thanks to our oldest Grandmother, the Moon, who lights the night-time sky. She is the leader of woman all over the world, and she governs the movement of the ocean tides. By her changing face we measure time, and it is the Moon who watches over the arrival of children here on Earth. With one mind, we send greetings and thanks to our Grandmother, the Moon.

Now our minds are one.

The Stars

We give thanks to the Stars who are spread across the sky like jewelry. We see them in the night, helping the Moon to light the darkness and bringing dew to the gardens and growing things. When we travel at night, they guide us home. With our minds gathered together as one, we send greetings and thanks to the Stars.

Now our minds are one.

The Enlightened Teachers

We gather our minds to greet and thank the enlightened Teachers who have come to help throughout the ages. When we forget how to live in harmony, they remind us of the way we were instructed to live as people. With one mind, we send greetings and thanks to these caring teachers.

Now our minds are one.

The Creator

Now we turn our thoughts to the creator, or Great Spirit, and send greetings and thanks for all the gifts of Creation. Everything we need to live a good life is here on this Mother Earth. For all the love that is still around us, we gather our minds together as one and send our choicest words of greetings and thanks to the Creator.

Now our minds are one.

Closing Words

We have now arrived at the place where we end our words. Of all the things we have named, it was not our intention to leave anything out. If something was forgotten, we leave it to each individual to send such greetings and thanks in their own way.

Now our minds are one. [Source: www.slic.com/mohawkna/thankgv.htm]

United Nations Mission for the Referendum in Western Sahara United Nations Mission in the Democratic Republic of the Congo memorandum of understanding MÃ©decins Sans FrontiÃ©res needs assessment mission North Atlantic Treaty Organization non-governmental organization Norwegian Peoples Aid non-self-governing territory Organization of American States Office for the Coordination of Humanitarian Affairs Operations Evaluation Department Office of the High Commissioner for Human.Â DPKO works very closely with the Department of Political Affairs (DPA), which is the focal point in the UN system for conflict prevention, peacemaking and peacebuilding.Â These groups are often replicated on the ground in the mission area.