



NUNAVUT WATER BOARD

REASONS FOR DECISION INCLUDING RECORD OF PROCEEDINGS

In the Matter of:

Applicant: City of Iqaluit

Subject: Application for Type “A” Water Licence

Date: May 15, 2006

Precedence: Where there is any inconsistency or conflict between the *Nunavut Land Claims Agreement Act* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSTRA)*, the Agreement prevails to the extent of the inconsistency or conflict. Where there is any inconsistency or conflict between the *NWNSTRA* and any other *Act* of Parliament, except the *Nunavut Land Claims Agreement Act*, the *NWNSTRA* prevails to the extent of the inconsistency or conflict.

RECORD OF PROCEEDINGS

Applicant: City of Iqaluit

Address: Box 460
Iqaluit, NU X0A 0H0
Telephone: (867) 979-5600
Facsimile: (867) 979-5922
Email: admin@city.iqaluit.nu.ca

Purpose: Application for Type "A" Water Licence for the City of Iqaluit

Application Received: January 16, 2004

Date(s) of Hearing: Day 1: March 7, 2006
Day 2: March 8, 2006
Day 3: March 9, 2006
Day 4: March 24, 2006

Members Present: Lootie Toomasie, Chair
George Porter
Thomas Kabloona
Raymond Kayarsaq
Guy Kakkiarniun

Board Staff: Chief Administrative Officer: P. di Pizzo, B.Sc., M.Sc.
Director, Technical Services: D. Filiatrault, P. Eng.
Technical Advisor: J. Murdock, B. Eng.
Technical Advisor: D. Hohnstein, C.E.T.
Technical Advisor: S. Gagne, B. Eng. M.I.T.
Manager of Licensing: P. Beaulieu
Licence Traînée: R. Dwyer

Interpreter(s): B. Kogvik
I. Boaz
J. Arreak

Sound Technicians: J. Ekho
T.Kallualik

NWB Legal Counsel: W.A. Tilleman, Q.C.

Court Reporters: D. Hermann, RPR
S. Sonsteby, CSR (A), RPR

Parties:

Applicant: G. Baker, Manager Engineering Services
E. Shieutiapik, Iqaluit Mayor
S. Burden, Trow Associates
C. Jones, Project Officer
M. Hall, Director Public Works
K. Johnson, Earth Tech Canada
K. Peterson, Legal Counsel

Department of Indian and Northern Development (DIAND):
J. Rogers, Acting Director of Operations
I. Rumbolt, Acting Regional Coordinator
P. Kusugak, Manager Field Operations
P. Larocque, Water Resources Officer
R. Hoos, EBA Engineering
L. Webber, Counsel

Environment Canada (EC): A. Wilson, Water Pollution Specialist

Department of Fisheries and Oceans Canada (DFO):
D. Moggy, Habitat Management Biologist
T. Gordanier, Habitat Management Biologist

Government of Nunavut – Department of Environment (GN- DOE):
R. Eno, Manager Pollution Control
M. Atkinson
H. Yeh
M. Mifflin

Bill Mackenzie Humanitarian Society: J. Little

Citizen: Siu Ling Han

K. Irving

P. Crowley

BACKGROUND, REGULATORY AND PROCEDURAL HISTORY

Background

Iqaluit, known as Frobisher Bay until January 1, 1987 when the community reverted to its original Inuktitut name, is located near the site of a traditional Inuit fishing camp, at 2,261 air kilometres east of Yellowknife, and 2,060 air kilometres north of Montréal. It is located on rocky, irregular coastline in a rocky lowland area, flanked by mountains on the northeast and southwest. The vegetation is typical of the sub-arctic tundra bio-region. Average annual precipitation is 19.2 centimetres of rainfall and 25.5 centimetres of snowfall, for a total of 44.7 centimetres precipitation. July mean high temperature is 11.4 degrees Celsius, and low is 3.7 degrees Celsius. January's mean high is -21.5 degrees Celsius, and low is -29.7 degrees Celsius. Winds are NW in the fall and SE in summer, at an annual average speed of 16.7 km/h. Iqaluit is located in a region of continuous permafrost.

The site of Iqaluit remained relatively undisturbed since the first recorded contact with Europeans in 1576. Most of the development of Iqaluit occurred because of the United States Air Force's construction of the largest airbase in the North on the site in 1942-43. The USAF was active until 1963 with a variety of projects: construction of a radar station, expansion of in-flight refueling capabilities, sending men and supplies to the eastern part of the Distance Early Warning (DEW) line then under construction. Iqaluit is also the site of a Forward Operating Location (FOL) built at the beginning of the 1990s.

Iqaluit obtained Town status on October 1, 1980. Over the years, the community, now a City, became the major administrative and political centre for the Baffin region; it is now the capital of the new territory of Nunavut, formally proclaimed on April 1, 1999. Access to Iqaluit is by air and by sea during the ice-free season, generally from July to October. Heavy machinery, vehicles, dry goods, construction material and supplies, and fuel and lubricants, are transported by ship from Southern Canada.

Regulatory History

This matter involves the application for the City's water licence. The City is located on Commissioner's Land, and a water licence regulates water use and waste disposal activities for municipal purposes.

The Nunavut Water Board inherited the regulatory responsibility for the management, regulation and use of water in the Nunavut settlement area from the Northwest Territories Water Board on July 9, 1996. As recorded in the existing public registry for the City transferred to the NWB, the licensing activity for the City began in 1991, when the NWT Water Board issued a Type A Water Licence renewal N5L4-0087 to the town which allowed for water use and waste disposal operations for a municipal undertaking for a period of four years.¹ In 1996 the NWT Water board issued a licence renewal.²

¹ N5L4-0087 issued on January 1, 1991 with expiry date of December 1, 1995. Licence renewal issued in accordance with the *Northwest Territories Water Act*.

² N5L3-0087 issued on January 1, 1996 with expiry date of December 1, 1998. Licence renewal issued in accordance with the *Northwest Territories Water Act*.

The City's regulatory problems began at least as early as the 1990s³. For the majority of 1999 the City operated without a valid water licence until a renewal licence (NWB3IQA9900) was issued by the Nunavut Water Board (the "Board") on December 31, 1999 for a term of one year.⁴ The City of Iqaluit has been without a valid water licence since January 2001.⁵

Procedural History

On January 19, 2004, the City of Iqaluit ("City") filed an application for licence renewal to allow for the use of water and deposit of waste into water for municipal services.

The Board decided that a public hearing would be required in accordance with the *Act*, Section 52(1)(a)⁶, and additionally in accordance with the *NLCA*, Article 13, Section 13.7.2⁷. It should be noted that upon application for a Type A water licence by the City in accordance with the *Act* a hearing was required and triggered by the volume of water requested use of 2000 or more cubic meters per day and waste disposal for a population estimate of greater than 2000 persons in accordance with the *Regulations*⁸.

³ Canada (EC) v. Canada (NWT) (1994) 15 CELR (NS)114(NWTSC)

⁴ Licence NWB3IQA9900 expired on December 31, 2000.

⁵ The City filed an application for renewal of NWB3IQA9900 and the NWB held the appropriate hearing in November 2000 and issued a decision and Licence in the matter on January 1, 2001. The Licence was not approved by the Minister of DIAND.

⁶ A public hearing shall be held by the Board before it disposes of any application in relation to a licence, unless the application is of a class that is exempted by the regulations from the requirements of a public hearing

⁷ Subject to Section 13.7.4 of the *NLCA*, the NWB shall hold a public hearing before approving any application. The NWB may, where there is no public concern expressed, waive the requirement for a public hearing

⁸ Pursuant to the *Northwest Territories Water Regulations* Schedule VI Column IV with respect to volume of water requested and population estimate for waste disposal.

After determining that the application was sufficiently developed for regulatory review⁹ the Board issued a Notice of Application¹⁰ and a Notice of Public Hearing¹¹ on July 21, 2004. Notice of the hearing was given in Nunatsiaq News and at local establishments within Iqaluit, and was also sent directly to interested parties.

In September 2004, a pre-hearing meeting with the applicant and interested parties was held to discuss procedural issues and to identify the matters to be dealt with at the hearing. Following this meeting¹², the NWB determined that the public hearing scheduled for October 4, 2004 would be postponed due to outstanding information requirements.

Upon submission of the majority of the outstanding information, a technical meeting and pre-hearing conference were held in May 2005. A public hearing was again scheduled for July 4-5, 2005 in Iqaluit, NU, and was again postponed due to lack of information.

Following receipt of the outstanding draft Sludge Management Plan, the NWB conducted a pre-hearing conference by teleconference on January 17, 2006. At these meetings, the NWB directed all parties to work toward sharing information and resolving issues in preparation of the Hearing.

⁹ Letter from Philippe di Pizzo to Brad Sokach dated July 21, 2004

¹⁰ As required under s. 55(1) of the Act

¹¹ As required under s. 55(2) of the Act

¹² *NWNSRTA*; Section 53. A public hearing that is held by the Board shall take place in the community or communities within Nunavut most affected by the application before the Board

In consultation with the Applicant and interested parties it was determined that the scope of the hearing would include the water source and proposed changes to infrastructure for increasing capacity of Lake Geraldine; waste water treatment and disposal, including the rehabilitation of the existing lagoon and disposal of sludge; and the operation and expansion of the existing solid waste disposal area referred to as the West 40. The Board agreed that the issues related to the existing gravel source and former metal dump referred to as the North 40 would not be included in the hearing scope¹³.

In accordance with the Board's Rules of Practice and Procedure for Public Hearing, the deadline for interventions was set for February 21, 2006. Revised Notice of Application¹⁴ and Notice of Hearing¹⁵ were posted locally and in Nunatsiak News, a Nunavut-wide weekly newspaper and the distribution list and the Board conducted the public hearing on March 7-9, and 24th, 2006 in Iqaluit, NU¹⁶.

JURISDICTION OF THE BOARD

This Board has jurisdiction over the City's application pursuant to Division 2 of the *Act*.¹⁷

Relevant sections in that Division allow the Board to issue a licence,¹⁸ amend a licence,¹⁹ or in certain circumstances, cancel a licence.²⁰

¹³Letter from Philippe di Pizzo to Geoff Baker dated January 27, 2006.

¹⁴ The Board provided notice of application by written correspondence, communicated to individuals, the Board's Technical Advisor (J. Murdock) and media channels

¹⁵ As required under s. 55(2) of the Act

¹⁶ *NWNSRTA*; Section 53. A public hearing that is held by the Board shall take place in the community or communities within Nunavut most affected by the application before the Board

¹⁷ Section 42-81 of the Act

¹⁸ See section 42, 48, 55, 56, and 70 of the Act

¹⁹ See section 43(1)(b) of the Act

²⁰ See section 43(1)(c) of the Act

In deciding to issue a licence with specific terms and conditions or engage in any other statutory function, the Board must follow the objects of the governing legislation, which are:

“... to provide for the conservation and utilization of waters in Nunavut, except in a national park, in a manner that will provide the optimum benefit from those waters for the residents of Nunavut in particular and Canadians in general”²¹

The Board intends to meet its statutory duty to make *all* reasonable efforts to minimize *any* adverse effects on aquatic ecosystems. Reading the several Articles of the *NLCA* together, which the Board is entitled to do to understand its jurisdiction,²² the Board relies on the broad definition of “ecosystemic” found in Article 12.1.1. to require not only Nunavut Impact Review Board but also the NWB to ensure all components of the ecosystem such as fish and fish habitat are protected within the parameters of section 71 of the *Act*. The Board also has the statutory²³ and Land Claims²⁴ authority to make recommendations to Government regarding marine areas. This kind of environmental stewardship is required of governments by the courts in Nunavut and in particular, for the City of Iqaluit.²⁵

At the hearing, the Board received evidence concerning public health issues.²⁶ While health and water are obviously related, the Board reminds parties and especially the City of the authority held by Territorial Public Health Officials under the *Public Health Act*,

²¹ Section 35 of the Act

²² See Article 2, section 2.9.1

²³ NWSRTA, Section.41

²⁴ NLCA, Section 15.4.1

²⁵ See the decision of Kilpatrick, J. in *R. v. Iqaluit*, 50 CELR (NS) 116 (2002).

²⁶ For example, Exhibit 1, page 6.

Public Sewage Regulations and *Public Water Supply Regulations*. Regarding waste, there is a local Iqaluit By-Law that prevents unlawful conduct in a variety of areas often discussed in Water Board hearings: indiscriminate disposal of hazardous waste,²⁷ littering,²⁸ failing to dispose as directed,²⁹ placing hazardous waste in an unsuitable container,³⁰ hauling uncovered waste,³¹ unsegregating garbage,³² and many others. Some of the citizens at the hearing raised concerns with the above referenced By-Law issues; therefore, the Board expects the enforcement of those matters, should they become a problem, to be dealt with by the City.

JURISDICTIONAL COMPLEXITIES AND PRELIMINARY MATTERS

At the hearing, several public interest matters arose that the Board feels compelled to address before issuing a new licence. Those matters related to the licensee's history include: (1) enforcement and compliance,³³ (2) approving placement of waste onto known contaminated sites,³⁴ (3) the dispute³⁵ over land ownership,³⁶ (4) lack of

²⁷ By-Law 341, section 205(4)10.

²⁸ By-Law 341, section 205(12).

²⁹ By-Law 341, section 401(5).

³⁰ By-Law 341, section 401(7).

³¹ By-Law 341, section 401(12).

³² By-Law 341, section 401(11).

³³ The topic is covered in the next section.

³⁴ Regarding the proposed expansion site, GN stated: "However we recognize that it is contaminated land, and we contend that someone cannot rid themselves of any liability just by transferring these lands carte blanche." (Transcript p. 156)

³⁵ This issue arose several times during the Hearing. For example, this exchange took place between GN and DIAND:

"MR. SITLAND: Thank you, Mr. Chairman. Doug Sitland, Department of Community and Government Services, Government of Nunavut. During the questioning of the City, DIAND had indicated that the City had some liability with respect to the proposed expansion of the solid waste site. I'm just seeking clarification from DIAND whether they are speaking with respect to what is currently above the ground there or what is below the ground there. Thank you Mr. Chairman.

THE CHAIRMAN Thank you. DIAND, your response.

MR. RODGERS: Jim Rogers, DIAND. The City is operating and administering these sites; therefore, they have some responsibility to ensure that what is at these sites and any additional problems occur, therefore they have some liability. Its – it would be the same as if you knowingly went in and built a house

consultation with Iqaluit residents,³⁷ (5) disagreement within DIAND over the NWB jurisdiction regarding burning of wastes,³⁸ and others. These matters will be addressed as follows.

(1) Enforcement and Compliance

To place enforcement into perspective, DIAND's inspector, who inspected the Iqaluit water licence issues in late 2003, revealed these problems:

on a contaminated area; you would be party responsible. It's – I don't think Doug is indicating the City has no knowledge of what's underneath the ground, it's a question of whether the City should clean it up. I believe that's the difference. But we do state because they are operating it, they do have an agreement on some of these areas, that they have some responsibilities. ...

MR. SITLAND. With respect to the Board's questioning with relationship to ownership of lands, there was a question whether the Board should be concerned about ownership, and the City did mention that they thought "yes". The ownership of these lands is an extremely complicated land administration issue for which the Commissioner and DIAND have been in dispute since likely 1971, and the likelihood of it being resolved is likely not going to happen today." (Transcript, pp. 153-154)

And the City's Legal counsel said this:

"It should be made clear to the Board that the City is not, for the purposes of this application or otherwise, accepting liability with respect to pre-existing contamination of the site, and further, that that issue is not an issue that needs to be resolved for the purposes of this particular license application, and in fact, it's probably beyond the scope of the Board's consideration of this matter. Pragmatic issues that have to be addressed in this portion of the license application, namely, that the proposed life span of the existing landfill is very short and has to be addressed in terms of expansion in this licensing application, and then there are longer term legal issues that have to be sorted out, mainly, land ownership issues and pre-existing contamination issues." (Transcript, pp. 170-171; see also pp. 466-7, 471-2).

³⁶The City agrees this problem should be resolved as soon as possible. Geoff Baker for the City stated: "Yes, I do think [dispute over ownership] should be a concern to the Board, definitely. However, in saying that, the City does have correspondence from the Government of Nunavut that states if, in fact, the landfill site was transferred to the GN under the land transfer agreement, that they would ultimately propose – ultimately propose that that land be turned over to the municipality for use as a landfill site. In saying that, we do have correspondence from Indian and Northern Affairs Canada which states, in fact, that yes, this land was transferred to the GN under the block land transfer agreement. Why we can't come up with a clear, concise owner of this property, I don't know if I can really speak to that. It's probably a matter of bringing everybody into a room ... We would appreciate within the jurisdiction of this Board if it could assist in the final resolve of this matter, because for the next five years, or until 2011, it is a critical component of the interim waste management practical limitations available to the City of Iqaluit. And as a parallel exercise, a major parallel exercise during that period of time will be commencement of the environmental requirements, the public consultations for a full-scale, full-service permanent landfill site. Without the ability formally to occupy this site, subject to regulatory authority, without the imperative of ownership, it remains difficult for the City, in fact, to move forward this matter. So, the assistance of the Board would be appreciated." (Transcript, pp. 127-128)

³⁷ Exhibit 27, Slide 3.

³⁸ See Transcript p. 163 and letter of Minister Nault (8/13/01), part of the previous record incorporated into this record. See Transcript pp. 83-85.

“In the course of the inspection, problems were identified with ponding and uncontrolled discharge of landfill leachate, the presence of hazardous materials in the landfill, improper disposal of waste in the North 40 Metal Dump and gravel extraction in an area known to contain unclassified waste. It was also noted that the sewage lagoon does not have the capacity to effectively treat the communities [sic] wastewater and that there have been a number of uncontrolled sewage discharges into Koojessie Inlet in the past year....

[Regarding Solid Waste Disposal] The area is known to contain contaminants in addition to municipal landfill waste [cite omitted] and uncontrolled release will result in contravention of the NWNSRTA. ...

The City has been out of compliance with respect to sewage discharges, both in the town and at the lift station near the breakwater...³⁹

The hearing uncovered compliance issues in several areas, some related to the licence, legislative requirements, and other Guidelines: Geraldine Dam Safety review,⁴⁰ Landfill leachate containing BTEX,⁴¹ Sewage Treatment Plant and *Fisheries Act* problems,⁴² commissioning a plant without knowledge or approval of the NWB,⁴³ and so on. For the *Fisheries Act* situation and how serious it is, (something not denied by the City⁴⁴) DFO's position at the hearing was this:

“So, the City had stated yesterday on a couple of occasions that they will not be in compliance with subsection 36.3 of the *Fisheries Act*. For the benefit of those in the audience or on the Board or in the room who aren't familiar with this section, it's a direct prohibition against depositing a deleterious substance into fish-frequented waters. It's just, you can't do it. There's no permit or license or authorization that will allow this activity; it's just a direct prohibition. The only way it can be approved, if I could call it that, is through a regulation, and there's currently no regulation in existence that would allow for this type of deposit.”⁴⁵

³⁹ DIAND Inspection letter, addressed to the Chief Admin Officer, Iqaluit, March 11, 2004.

⁴⁰ See Geoff Baker's testimony stating the City was in "... non-compliance with regards to an emergency preparedness plan operation and maintenance manual." Transcript, p. 49.

⁴¹ GNDOE evidence, Ex. 8, p. 2, and Transcript pp. 182-3.

⁴² DOE submission.

⁴³ See Transcript, p. 273.

⁴⁴ See Transcript, p. 277.

⁴⁵ Tania Gordanier, DFO, Transcript pp. 399-400.

Related to that, Mr. Paul Crowley, a citizen, asked this question:

“Based on the question that Anne Wilson just posed, so we will not be meeting standards that will meet the *Fisheries Act* requirements? Is that a \$5 million upgrade, and we’re not going to meet the Fisheries standards, *Fisheries Act* standards; is that correct?”⁴⁶

The seriousness of compliance with *Fisheries Act* and Waters legislation comes from several places, including the courts. The Board’s particular concern with the Fisheries Act compliance comes directly from the Nunavut Court of Justice. In 2002, Mr. Justice Kilpatrick fined the City of Iqaluit for violating section 36(3) of the *Fisheries Act*. In discussing the situation in Iqaluit and the north in general, the Court said this:

“The marine reclamation technologies in common use in the south are not easily adapted to arctic conditions. The cost of using such technologies in remote areas is likely to be many times more expensive than in the south.... Experience has shown that damage to an arctic environment is easier to prevent, than it is to repair. All of these circumstances suggest that the commission of an environmental offence in an arctic region should attract severe penalties, penalties commensurate not only with the elevated risk of environmental damage, but with the high costs associated with rehabilitation of the affected areas.

In Nunavut, corporate citizens who knowingly engage in activities that have the potential to cause damage to an arctic environment are “stewards” of the lands and waters upon which they operate. They have a duty when undertaking such a venture to exercise a high standard of care.”⁴⁷

The other concern the Board has is its role in knowingly regulating non-compliance, should the license be approved and the City proceed without implementing Phase 2. That exact issue— a probable regulatory body’s involvement in what ended up as a non-compliance—faced our sister Board, the Yukon Water Board in 2003. In that case, the same *Fisheries Act* issues arose as in Iqaluit, a City operating a sewage plant knowing it

⁴⁶ Transcript pp. 255-6.

⁴⁷ R. v. Iqaluit, 50 CELR (NS) 116, 118-119. Nunavut Ct. of Justice 2002.

violated the *Fisheries Act*. The City plead guilty, but the part of the decision that is important to the NWB, is the part dealing with the Water Board's role in perpetuating a faltering regulatory scheme. The court said this, with remarkably similar facts to Iqaluit:

“The conduct of the Water Board in granting a second and then third water-use license to the City of Dawson in circumstances where the City was in substantial breach of the first and then the second, constituted passive encouragement of non-compliance by the City. The Water Board's willingness to extend the third water-use license for five years, until 2005, is consistent with this message. [The Court quoted United Keno Hill Mines...]

Similarly, the government department responsible for enforcing the provisions of the Fisheries Act [federal DOE] ignored and failed to prosecute the numerous breaches of the Fisheries Act since 1983 as evidenced by the repeated failures of the LC50 bioassay. This lack of action over a period of almost 20 years sent only one clear message to the City of Dawson: non-compliance is not a serious matter...”

For the NWB, compliance is a serious matter; there are at least two problems with approving a license in circumstances of regulatory uncertainty. First, the proposed technology, if licensed but still unproven, may be more harmful and costly than helpful, and second, promoting non-compliance in Iqaluit in 2006 is to do so in the framework of an existing contaminated environment.

Both circumstances face the Board. On the latter point, according to the University of Manitoba study referred by EC, in it's conclusion:

“The levels of SCCPs and MCCPs are higher in the sediments/soils and water in the Iqaluit area than can be explained by atmospheric transportation although this is the likely reason for the background levels found at Petershead and Iqalugaaruliut. In fact concentrations of CPs in Iqaluit are higher than reported from many industrial areas of North America. There are hot spots within the community of Iqaluit that are correlated with old dumps but there is also the possibility of new sources. There is evidence that significant amounts of SCCPs and MCCPs are entering the ocean from two streams and the sewage lagoon.”⁴⁸

⁴⁸ Exhibit 9, page 7.

Not only that, the Board is troubled by the fact that the City has already begun commissioning the sewage treatment plant and placing sludge in the landfill area without the Board's permission. The Board does not understand how this can be done, given the provisions of the *Act* that state this:

- 12.** (1) Subject to subsection (2) and except in accordance with the conditions of a licence, no person shall deposit or permit the deposit of waste
- (a) in waters in Nunavut; or
 - (b) in any other place in Nunavut under conditions in which the waste, or any other waste that results from the deposit of that waste, may enter waters in Nunavut.

The Board also does not understand why it had to constantly encourage DIAND to inspect problem areas more frequently.⁴⁹

On the bright side, all parties agreed that the City has made tremendous progress in the improvement of municipal water and waste management.⁵⁰ And, while it is the Board's impression that the current municipal officials responsible for this water application are the best that the NWB has seen in 10 years, the Board is still quite concerned that the City will not be undertaking significant studies and plans. To point out one example, the City said this:

"The City at this time could certainly not financially take on such projects as a bathymetric survey, another water supply study, a watershed investigation, an emergency preparedness plan, an O&M manual, a permanent log file, water level monitoring, watershed protection measures, identify a second source for raw water supply, as well as undertake treatability studies."⁵¹

⁴⁹ Public Hearing Transcript, pages 158 to 159.

⁵⁰ See, e.g. EC's summary, written submission, Feb. 21, 2006, p.18.

⁵¹ Transcript, p. 60.

(2) Placement of Waste onto known Contaminated Sites

The City's Consultant raised the issue of contamination in the dump:

“There was some elevated contaminants identified on north half of the site and that was at that time, again, with – the town of Iqaluit wanted to move forward with taking the existing Honey Bag Hill out of commission and developing an engineering site. So the north half of the site was set aside, recognizing that there would be additional studies and negotiation, as Mark Hall has already mentioned, to do with what the existing contamination, what – the ownership of that portion of the site.”⁵²

The consultant went on to say:

“I guess the reason it may be that it is an existing contaminated site, thereby trying to stabilize the existing contaminants as much as possible and then utilizing it as a landfill, because, of course, as the landfill increases in elevation height, the permafrost continues to move, I guess, up the soil profile. So in fact, with those contaminants, they would become essentially more, I guess, more stable or more frozen, I suppose, that the temperature would decrease within those as the landfill profile increases with time in the development of the north portion of the site.”⁵³

(3) Dispute over Land Ownership

Once again, the issue of ownership of lands arose. Either the federal government owns or is responsible for the lands occupied by waste,⁵⁴ or it is the territorial government,⁵⁵ and/or the City, who at a minimum occupy or propose to occupy and manage such sites⁵⁶ -without on the City's part losing the right to argue that it does not assume the liability for the site(s) as a result of the management.⁵⁷

In the absence of better and complete information,⁵⁸ the Board has decided to issue the license without requiring (as a prerequisite to the 2006 license) a resolution of the problem. However, since the determination of the ownership or interest in lands question is relevant to the management and cleanup and no doubt relevant and appropriate for the A and R phase of the licensed activities, the Board will require answers to these questions *before* the next license is issued in 5 years.

⁵² Ken Johnson, Earth Tech, Transcript pp. 117-118.

⁵³ Ken Johnson, Earth Tech, Transcript pp. 120-121.

⁵⁴ See the further discussion in these reasons regarding Jurisdictional complexities.

⁵⁵ See e.g., Transcript p. 127.

⁵⁶ See e.g., Transcript pp. 117-18, 128, 154, 176.

⁵⁷ See e.g., Transcript pp. 170-71.

⁵⁸ See e.g., Transcript pp. 155-56, 440, 466-68.

To assist the parties, the Board will be sending out Guidelines for the applicant under the authority of section 48(3)(f) that states:

“... the Board may provide guidelines to the applicant ... including the following:

...

(f) the interests in and rights to lands and waters that the applicant has obtained or seeks to obtain...” (emphasis added)

These Guidelines will be forwarded to the City and other governments for comment within 60 days of the Minister’s approval of the license under section 56 of the Act. Following a 60 day comment period, not including an additional opportunity for the City to reply, the Board will finalize the Guideline.

(4) Lack of Consultation

On the matter of consultation, several residents questioned the propriety in moving ahead without community support. Ms. Han, for example, said this:

“I’m getting at – I guess what I’m getting at, there seem to be a lot of things that in a public consultation – that might have been more appropriately addressed during a public consultation process on this, on this whole thing, rather – not necessarily having the Board have to sit through what’s essentially, you know, public questions about things that are of great interest to the public. And I don’t know if I missed the public consultation part where all – like, in this process of the solid waste management, sludge management planning, or has there just not been an actual formal public consultation on this?”⁵⁹

Mr. Little, for the BMHS, said this:

“The other thing has got to do with public consultations. I know I noticed my organization’s name in this sewage sludge management plan regarding, you know, people in the community, but I was never asked. Our organization was never asked for input, ever, and you know, I’ve rankled a lot of people within the community here, within the administration of the City, but that’s at the core of my frustration because I want to contribute and have never been asked. So to – for me to hear – If I heard you right, it bothers me to have stated that we were asked for public consultation when I’ve never heard of that once.”⁶⁰

⁵⁹ Transcript, pp. 321-2.

⁶⁰ Transcript, p. 332.

Mr. Crowley, recognizing the problems associated with spending money before all of the options are considered, said this:

“And what would be the cost of simply reinforcing the lagoon and continuing with that, and why is that no longer an option? Just a comment to accompany that, it seems that phase one is only meaningful if phase two follows quickly after, and without phase two and a plan and a financial plan to make it happen, we are investing an awful lot of money on something that we’re not sure is going to happen.”⁶¹

DECISION TO ISSUE

Following the public hearing and for reasons elaborated further below, the Board has decided to issue Water Licence 3AM-IQA0611 subject to the conditions set out therein.⁶²

The Licence contains terms and conditions the Board feels are necessary to protect the environment, conserve the water resources around the community of Iqaluit, and provide appropriate safeguards in respect of the Licensee’s use of waters and deposit of wastes. The Board will also be issuing guidelines under the legislation⁶³ and NLCA⁶⁴, to the City, requiring the City to bring forward information before the expiry of the current licence, regarding either expropriation (usually a last option), or the interest in and rights to lands that the City has obtained or seeks to obtain.

Issuance of a Licence

As stated above and subject to s.42(1) of the *Act*, the Board has decided to issue a Water Licence subject to the terms and conditions set out therein. In issuing the licence, the

⁶¹ Transcript, p. 257.

⁶² The Licence has been issued under separate cover

⁶³ NWNSRTA, Section 48 (3) (f)

⁶⁴ NLCA, Section 13.8.1 (f)

Board is satisfied that the application contains the required information and is in the proper form having regard to the Board by-laws and guidelines.⁶⁵

Having said this, the Board is setting its own strict licencing parameters which, in the absence of regulations, it is authorized to do under section 57 (a) of the *Act*. Further, the Board expects the City to provide the financial commitment to move towards Phase II before this licence expires, or else the Board will not be able to issue a renewal as per Section 57(b) of the *Act*.

Applications in Relation to Licenses

The proponent urged the Board to grant the licence, arguing that to do so would meet the needs of Nunavummiut and Canadians in general.⁶⁶ The Board agrees and has issued a licence that it believes meets the needs of Canadians and in doing so, the Board is cognizant of each party who provided written⁶⁷ and oral evidence,⁶⁸ that the environment and in particular inland waters ecosystems must also be protected.

The Board is satisfied that s.48 of the *Act* have been satisfied. The City filed an application which complied with the Board's rules and accompanied with the application fee⁶⁹ as required by the regulations. The Applicant provided the necessary information to evaluate the qualitative and quantitative effect of the use of water or the deposit of waste on water.

⁶⁵ See s. 48 of the Act

⁶⁶ Transcript, pp. 526

⁶⁷ For example, DFO's written submission at pp. 6-11; DOE's written submission at pp. 2-6

⁶⁸ For example, DFO's oral evidence see transcript pp. 354-361; DOE's oral evidence at pp. 300-313

⁶⁹ In accordance with section 48(1) of the Regulation fee of \$30 provided with the application

Term of Licence

In accordance with s.45 of the *Act*, the term of a licence or any renewal shall not exceed twenty-five years.

Even though the Applicant wanted a longer term,⁷⁰ the Board has decided to issue a licence for five years. The term of the license is also intended to coincide with limited capacity of the landfill and for that reason the Board required the following:

- Proposed plans for a new site;
- Complete Abandonment & Restoration Plan for the existing site; and
- Resolution to the land ownership.

These requirements are due one year before the expiry of the licence or one year before the expanded site reaches capacity, whichever is earlier.

During this term, the licensee will have accumulated enough monitoring information which will be used by the Board to assess the performance of the licensee in the context of this licence renewal.

WATER LICENSE TERMS AND CONDITIONS

Most of the conditions that have been set forth in the Licence are self-explanatory and have been imposed in order to address those concerns raised during this proceeding, including the various concerns raised by the interveners at the hearing into this matter. These reasons below address the more significant of those concerns.

⁷⁰ See Transcript.

Water Quality Concerns

The Board's response to these concerns it found in the issuance of a licence that include but not limited to the following: general and aquatic effects monitoring requirements,⁷¹ and specific regulated⁷² water quality parameters, contingency plan,⁷³ remediation plan,⁷⁴ and additional monitoring.

This Board takes Inuit culture, customs, and knowledge seriously, and once again, where there are stricter licence terms than those proposed by the Applicant the Board justifies this out of the Board's obligation to give "due regard and weight" to these Inuit values⁷⁵.

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

Scope

The scope the application as applied for by the City and further developed throughout the hearing allows the City to use water from Lake Geraldine for municipal purposes and to carry out structural improvements to the dyke and berms of the reservoir, and to dispose of waste at the West 40 Landfill site, to expand this site to the North and to implement a site drainage management plan aiming at collection leachate, to dispose of sewage in the Wastewater Treatment Plant and to use the current lagoon as a back-up facility in case of

⁷¹ General water quality objectives would seek to ensure the waters of Nunavut remain free, as much as possible, from discharges with concentrations that may be toxic or harmful to the aquatic ecosystems and human health

⁷² Regulated parameters include limits on ph, metals, nutrients, etc that must be achieved for final discharge to occur

⁷³ See Part J of the Licence

⁷⁴ See Part M of the Licence

⁷⁵ See Section 33 of the NWSRTA and Section 13.3.13 of the NLCA

Plant failure. The License also authorizes the City to continue a pilot project to dispose of sewage sludge.

Enforcement, Compliance, etc

For the purpose of ensuring compliance with the licence or regulations, an Inspector designated by the Minister may inspect or examine works, waters or waste and exercise other powers according to the *Act*.⁷⁶ For additional detail refer to Part K below.

The *Act* does include serious penalties for breach of the licence including furnishing or maintaining security⁷⁷ and any investigation or inspection is done by persons designated and empowered by the Minister.⁷⁸

In accordance with the Section 70(2) of the Act, the Board recommends to DIAND that the Inspector, designated by the Minister, monitor compliance with the licence by visiting the site at least quarterly during construction and file each site visit report with the Board within sixty (60) days of each quarterly inspection. The legislation allows the Board to “specify responsibilities of the Applicant, the Nunavut Impact Review Board or Her Majesty in right of Canada” and this would include DIAND, EC, or DFO in our opinion.

The Board believes it critical as approved by this Board that DIAND assist in it’s regulatory oversight role to the fullest extent possible, coordinate this with other regulators such as Environment Canada.

⁷⁶ Section 85-94 of the Act

⁷⁷ Section 90 of the Act

⁷⁸ Section 85-88 of the Act

PART B: GENERAL CONDITIONS

Reports filed with the NWB

The NWB requires all licensees to file an Annual Report with the Board and in this case no implementation plan would be required.

Every other plan, or report (“plan”) submitted to the Board under this licence shall include a proposed timetable for implementation. The Board may alter or modify any such plan if necessary to the achievement of its legislative objectives and will notify the Applicant in writing of acceptance, rejection, or alteration of the Plan. Any such plan must be carried out in the timeframe set by the Board and cannot be undertaken without Board approval unless otherwise indicated in the licence.

Every plan to be carried out pursuant to the terms and conditions for this licence shall become a part of this licence. Any additional terms and conditions imposed upon approval of the plan(s) by the Board become part of this licence.

PART C: CONDITIONS APPLYING TO SECURITY

The *Act* allows the Board to require a licensee to furnish and maintain security with the Minister in a form determined by the regulations or satisfactory to the Minister.⁷⁹ In this

⁷⁹ Section 76(1) of the Act states: “The Board may require an applicant, a licensee or a prospective assignee to furnish and maintain security with the Minister in the form , of the nature, subject to such terms and conditions an in an amount prescribed by, or determined in accordance with, the regulations or that is satisfactory to the Minister.”

License, the Board decided not to require the applicant to furnish security, mainly because to do so would expand the financial risks of local taxpayers who are already burdened.

PART D: CONDITIONS APPLYING TO WATER USE AND WATER MANAGEMENT PLANS

The *Act* states “... no person shall use, or permit the use of, water in Nunavut except in accordance with the conditions of a licence.”

Briefly, the Applicant presented slides and written materials to show that water flows from Lake Geraldine to the water treatment plant, undergoes treatment and from there to the water distribution system where it is either piped or trucked to homes and other buildings.

Water Source

Lake Geraldine, located in the northwest part of Iqaluit, and built in the 1960s, has an area of 386 ha and receives an annual average precipitation of 424.1mm, for a total yearly volume of precipitation of 1,633,000 cubic metres.

For the current application, and as it relates to Water Supply, EC wants measures to be taken to prevent the release of sediment into the water flowing from and into Lake Geraldine such as silt fences or curtains.⁸⁰

⁸⁰ EC written submission, Feb 21, 2006, page 5.

Water Treatment

As for Water Treatment and Storage, the design life of the Water Treatment Plants is for 20 years, to 2022. The gross design capacity for the WTP is set at 9,500 cubic metres a day based on a population of 11,300 and the City design consumption rate of 400 litres per capita per day.

Water Quantity

In 2002 it was estimated that the City would utilize 27% of this volume to meet demands, and further it would require an estimated 89% to meet demands by the year 2023.

Concerns with the watershed's ability to meet the needs of the City led in part to a study in 2004 which recommend that the maximum available runoff be considered to be 60%, and therefore identified the future need of the City to supplement its water supply.

Although preliminary recommendations were in made in 2004, no further work has been undertaken and no decision regarding how the City will meet its long term needs have been made.

The City indicated in the water licence application⁸¹ that the water quantity projected use would be approximately 1,100,000 cubic metres assuming 24 hours per day for 365 days in operation), and the Board accepted this requested volume.

Expansion of Lake Geraldine and Additional Recharge for Lake Geraldine Reservoir

⁸¹ Application filed by the City on January 19, 2004.

Raw water is stored in the Lake Geraldine Reservoir which was created by the construction of a concrete gravity dam the early 1960's. The dam has been extended three times from its original crest elevation from 106.22 m to its current elevation of 109.m. During the summer of 2006, the dam will be further extended 2.0 metres to meet the over winter raw water storage needs until the year 2023.

For matters related to the increase in storage, EC wants monitoring to deal with fluctuations in the level of the reservoir, and, if a new area is to be developed, EC wants the City to submit these to the NWB.⁸²

As for Water Supply, DIAND, following EC's lead, wants the levels of the Reservoir monitored beginning this Spring 2006.

Fisheries and Oceans Canada, like EC, stressed throughout the hearing, and in written submissions, the need to comply with the *Fisheries Act*, in particular, section 36(3). In its written submissions, DFO stressed the need to protect aquatic resources as the City looks for other water sources, or to expand Lake Geraldine.⁸³ As a general recommendation,

DFO wants the City to employ "Best Practices" in the following areas:

- The implementation and maintenance of sediment and erosion control measures to prevent sedimentation into adjacent watercourses,
- The restoration of disturbed areas adjacent to water bodies,
- The limitation on the use of machinery in the water bodies,
- The restriction on the use of explosives in or near fish-bearing waters, and
- The use of fish screens during any water taking activities as outlined in the DFO guidelines.

⁸² EC written submission, Feb 21, 2006, page 5.

⁸³ DFO written submission, Feb 21, 2006, pages 4-5.

Dam Safety

The Canadian Dam Safety Guidelines requires that all structures exceeding prescribed height and volume minimums be subject to Dam Safety Reviews (DSR's) and Dam Safety Inspections (DSI's) at regular intervals. The Lake Geraldine Dam requires a DSR every seven (7) years. The DSR for the facility was conducted in 2001 and is now out of date. The site inspection and reporting took place from February 9-11, 2005. No significant changes in condition were observed since the previous inspection. However, evidence of small volume seepage exists at some hairline crack locations; the extension of the dam and presumably inspections/reviews in 2006 will address this problem.

PART E: CONDITIONS APPLYING TO WASTE DISPOSAL AND WASTE MANAGEMENT PLANS

From an enforcement and compliance perspective, the Board endeavored to write this licence fairly and properly; we have tried to outline clearly the discharge parameters and other limits of the licence in a way that will not over regulate (or under regulate); failure to do so could lead to over/under enforcement.

Fortunately, for the licence terms, most parties agreed on discharge parameters and limits, with few exceptions. Where parties did not agree, for example on the general issue of monitoring versus regulation, the Board has decided to regulate at this time, recognizing that at licence renewal, or earlier, the Board can amend any condition of a licence.⁸⁴

⁸⁴ Section 43(1) of the Act

Again, DFO's submission did not get into specifics, other than to say there should be best practices to protect Fish and Fish Habitat.⁸⁵

SOLID WASTE DISPOSAL

West 40 Solid Waste Management Facility

For the City of Iqaluit's Solid Waste Collection and Disposal system consists of 2 garbage trucks, a solid waste disposal area, 5 collection staff and 3 landfill staff. The landfill staff utilize a dozer, compactor, loader and shredder in daily landfill operations. Recycling is currently limited to the collection and diversion of aluminum cans. It is the City's opinion that with the expansion of the landfill into the northern adjacent site and with the excess landfill space created from a proper drainage plan, the West 40 landfill site may be able to serve the needs of the community through to 2010.

The City's landfill also includes a hazardous waste management site. The site consists of 5 sea lift containers for storage of hazardous waste. The City acknowledges the fact that the hazardous waste site is required to be registered, licensed and approved by the GN Department of Environment and will endeavor to initiate this process in a reasonable time frame following the hearings.

EC recommends that, before receiving contaminated soils, the City should test the soils for a full heavy metals scan, PCBs, and hydrocarbons via the BTEX⁸⁶ test. The CCME Guidelines for Industrial Sites would be the limit for soils acceptance. Finally, there

⁸⁵ DFO submission, Feb. 21, 2006, pp. 3-4.

⁸⁶ Benzene, toluene, ethyl benzene and xylene. See EC submission, Feb. 21, 2006, p.7.

should be a proper Emergency Response Plan⁸⁷ for hazardous wastes, and also, should be a proper Operation and Maintenance manual⁸⁸ dealing with waste management matters.

While acknowledging that the City has “...come a long way over the past 10 years...”⁸⁹ the GN is concerned with the lack of information including failure to have in place a long-term solid waste management plan.

Leachate Containment

The City is proposing to develop leachate monitoring procedures in the landfill as indicated in the City’s Operations and Maintenance Manual developed in 2005. The collection ditch at the southeast corner of the landfill will be used for both surface water and leachate water collection and sampling. Water samples will be taken in accordance with standard sampling procedures. Until the drainage improvements have been completed at the landfill, the City is proposing a weekly sampling frequency for pH, electrical conductivity, metals, BTEX (Benzene, Toluene, Ethyl benzene, Xylene) and Fractional Hydrocarbon Analysis. To reduce sampling costs the City is proposing a monthly sampling frequency for phenols, PAH’s and PCB’s. The City believes this should provide an adequate reflection of the quality of leachate leaving the landfill and aid in the development of an adequate treatment system. Once the drainage improvements are complete and a treatment system in place the City is proposing a monthly sampling frequency during the summer months for pH, electrical conductivity,

⁸⁷ EC submission, Feb. 21, 2006, p.8.

⁸⁸ EC submission, Feb. 21, 2006, pp. 8-9.

⁸⁹ GNDOE submission, Exec. Summary, p.2, Feb. 21, 2006.

metals, BTEX and hydrocarbons and an annuals sampling frequency for phenols, PAH's and PCB's.

Environment Canada wants the City to do several things to properly manage waste. First, secure and characterize all leachate from the landfill operations,⁹⁰ capture the leachate,⁹¹ monitor,⁹² and report it to the NWB. The monitoring suggestion applies to several sites, not just the West 40 main dump site.

Environment Canada also raised concerns over contamination contributed to either the sewage lagoon or a solid waste site. The Board speaks to this issue below.⁹³

The GN raised several other concerns, for example, runoff and leachate control. Mr. Eno said this:

“In the presentation given by the town, and this has already been repeated by one of the intervenors before, all leachate shall be collected periodically and dumped on the sewage lagoon. This has already been addressed by other intervenors, but we understand that leachate from the landfill has been tested and it does contain substances such as BTEX and metals which are likely to have a detrimental effect on the sewage lagoon. So, I'm uncomfortable with the statement that you're going to collect the leachate and just dump it on the sewage lagoon. It should be analysed.”⁹⁴

The GN strongly urged the City to quickly implement a drainage improvement system,⁹⁵ to register to become a hazardous waste storage facility,⁹⁶ and to deal with leachate, with

⁹⁰ EC submission, Feb. 21, 2006, pp.6-7.

⁹¹ And to prevent leachate from filtering into groundwater. See EC written submission, Feb. 21, 2006, p.6.

⁹² EC submission, Feb. 21, 2006, p.9.

⁹³ EC, referencing University of Manitoba Study, See transcript pp. 109-110.

⁹⁴ Transcript, p. 182.

⁹⁵ GNDOE submission, item 4. Waste Disposal-Solid Waste.

⁹⁶ GNDOE submission, item 4-Waste Disposal-Solid Waste.

all of its inherent problems.⁹⁷ Like EC, the GN wanted a better Operation and Maintenance and Emergency response Plan and expected it to be in place.⁹⁸

For Solid Waste matters, the DIAND, at least in written submissions, reiterated EC's concerns.⁹⁹ Significantly, DIAND agreed that burning in the landfill causes problems with leachate,¹⁰⁰ which is in the Board's jurisdiction. That statement contradicts and corrects the position taken previously by the Minister of DIAND, who on August 13, 2001, said this to then-NWB Chair:

“In particular, I refer to those clauses in the Iqaluit municipal licence that the NWB issued on December 31, 2000, that deal specifically with the open burning of unsegregated municipal and commercial wastes within the waste disposal facility.

There already exists competent regulatory authorities with the necessary legislation to act on issues that the NWB, via the licence, has given the department primacy. As such, it is unacceptable for the NWB to assign jurisdictional inspection and enforcement responsibilities to the department in those areas.”

Landfill Expansion

As indicated earlier the City's intention is to expand its landfill operations into the Northern adjacent site.¹⁰¹ The City originally intended to expand into the adjacent site in

⁹⁷ GNDOE submission, item 4 Waste Disposal-Solid Waste.

⁹⁸ GNDOE submission, item 4 Waste Disposal-Solid Waste.

⁹⁹ DIAND written submission, Executive Summary, pp ii-iii and pp. 17-18.

¹⁰⁰ J. Rogers, DIAND, said this (Transcript, p. 163).

“So, if it was part of the application, we just wanted the City to clarify that either they're burning or not burning. Incomplete combustion, of course, causes problems eventually with the leachate production, types of leachate production, so we were just – we wanted the City to clarify that burning was not part of the thing, or if burning was, how they were going to do it. “

¹⁰¹ In December of 2005 the City submitted a request to the Nunavut Water Board for use of the expansion facility as a landfill facility. The request outlined the myriad of issues facing the expansion of the site and the City's plan to address them. The issues outlined in the request include ownership of the expansion area, existing contamination, runoff management and long term solid waste management planning.

2001. The City, at that time, graded the site, created ditching around the site to collect runoff, constructed soil berms and erected fencing around the site. The existing waste on the site, including mostly wood, cans, barrels and other metal debris, for the most part were placed by parties other than the City. As part of the expansion the existing waste was capped with 0.5 m of fill to raise the permafrost level and create an impervious liner for the expansion site. Due to funding issues, the city could not undertake a detailed characterization of the site.

In the City's opinion, it has taken significant steps in responsible waste management and hazardous waste management over the last 10 years. However, much work remains to be done, because the current landfill is full and the expanded site, if approved, will be at capacity shortly:

“We do anticipate that the landfill will reach its capacity by 2010, 2011. We certainly don't, don't have budget this year to investigate alternate sites for another landfill; however, within the next couple of years we will certainly be looking at a new landfill site, and it is high on our priority list. And, yes, I guess we would seek an amendment to the license at that time.”¹⁰²

Regarding the expansion of the current dump site, the GN—though uncomfortable—said this:

“Nevertheless, to reiterate DOE's verbal comments at the Feb 2nd meeting, the City of Iqaluit should be fully aware that the sampling and analysis undertaken at this old dump site in 1995 is far from comprehensive and that there are many constituents which might be present and which were not sampled for. The City would therefore be held responsible should these substances suddenly manifest themselves after the City has begun to use this site for solid waste disposal.

During the Feb 2nd meeting, the City indicated that they would provide environmental regulatory agencies with a written request for direction on this

¹⁰² Transcript, p. 106.

matter. A rough outline of their intentions was to be included with this request. At the time of compiling this submission, DOE has not received anything in writing from the City.”

Composting and Recycling

On behalf of the BMHS, Jim Little discussed the benefits including costs and other efficiencies to support composting.¹⁰³ Most of the BMHS presentation, in writing and orally, focused on waste management and the virtues of composting and recycling.¹⁰⁴

Siu-ling Han

Ms. Han raised several concerns, mainly directed at the waste water management, as opposed to solid waste management.¹⁰⁵

Ms. Han attended the hearing, participated as did BMHS and others at the community session, and discussed several issues but focused on waste management¹⁰⁶ as did Paul Crowley.¹⁰⁷

SEWAGE AND EFFLUENT TREATMENT FACILITIES

The City’s Sewage Collection infrastructure consists of a network of collection pipes, four (4) sewage trucks, two (2) dumping stations, three (3) lift (pumping) stations and a “new” sewage treatment plant.

¹⁰³ BMHS written submission, Feb. 21, 2006, pages 1-2.

¹⁰⁴ BMHS Presentation Feb. 21, 2006.

¹⁰⁵ See Exhibit 27.

¹⁰⁶ See Exhibit 27, tabled by Ms. Han on the last day of the hearing.

¹⁰⁷ See, e.g. Transcript, pp. 255-258; 310-314; 346.

The sewage collection system consists of approximately 20,000 metres of sewers and forcemains and 4 sewage pumping trucks. Approximately 62% of the City's population is currently on piped sewage services and 38% serviced by truck. Piped sewage flows by gravity to one of the two lift stations located in the City, or to the lift station located at the new sewage treatment plant. This creates limits of the expansion of the system without the construction of additional lift stations. With trucked services, pumper trucks extract sewage from household sewage tanks and deliver the sewage to the dump station adjacent to the lagoon. For the dump station the sewage flows by gravity to the Sewage Treatment Plant (previously to the sewage lagoon).

Of the City's two (2) sewage dumping stations, the station located adjacent to the lagoon is the only one operational. The station location in the expansion area has never been operational due to insufficient sewage pipe capacity in the area.

As indicated earlier, Phase I of the treatment facility will provide primary treatment of sewage.¹⁰⁸ (It will also violate the *Fisheries Act*.¹⁰⁹) The second phase (not yet planned) will provide secondary treatment and the third phase to expand the capacity of the plant to service a population of 12,000. After Phase II is complete (and this is pending funding) the City is anticipating meeting effluent requirements of 45 mg/L for BOD, 45 mg/L for TSS and 10mg/L for Ammonia.

¹⁰⁸ With primary treatment only, the City anticipates it will meet the currently following effluent requirement in Nunavut of 120 mg/L BOD₅ and 180 mg/L TSS. The City is proposing to develop a monitoring protocol for its wastewater effluent to be submitted to the NWB and regulators for approval.

¹⁰⁹ This is the City's own evidence. See Ken Johnson, Transcript, pp. 254, 277.

EC

Environment Canada again reminded the City of the need to follow the law, in this case, again, the *Fisheries Act*.¹¹⁰ While EC seemed pleased to see the phased in approach, and the new proposal by EarthTech Canada on behalf of Iqaluit, EC reminded the Board that Phase II of the Iqaluit Plan (which the City is not proposing at this time due to the ten million dollar price tag¹¹¹) will be the only phase that *may* comply with the *Fisheries Act*. Further, in 2006, Canada will be focusing on a nation-wide strategy to manage wastewater effluents, which by volume, “. . . is one of the largest sources of pollution...discharged to surface water bodies in Canada.”¹¹²

Regarding the decommissioning of the sewage lagoon, EC warned the City:

“Given the concerns regarding the inadequate sizing of the lagoon, the insufficient retention time, and the stability of the berms, EC does not recommend using the lagoon for purposes other than as a back-up facility for the WTP.”¹¹³

For sludge management, EC simply wanted the City to decide whether it would accept EarthTech’s proposal, and if so, to develop and submit to the NWB for a review of the sludge management plan.¹¹⁴

For monitoring, EC wants several parameters tested,¹¹⁵ and the establishment of monitoring stations to monitor effluent discharge. On top of this EC wants a QA/QC program to be submitted under the monitoring program.¹¹⁶

¹¹⁰ EC written submission, Feb. 21, 2006, pp. 10-11.

¹¹¹ Transcript, p. 316.

¹¹² EC written submission, Feb. 21, 2006, p.11.

¹¹³ EC written submission, Feb. 21, 2006, p.12.

¹¹⁴ EC written submission, Feb. 21, 2006. p.13.

Finally, for Emergency Response and Spill Contingency, EC wants the plans updated and should include and reflect current wastewater operations and any changes to those operations.¹¹⁷

DFO

In brief, DFO agreed with EC and especially with recommendations for water quality parameters as it relates to effluent discharge.¹¹⁸

GN DOE

For Sewage, the GN has several specific concerns, including: repairs/upgrades to the lagoon, Contingency Plans, and Abandonment and Reclamation Plans.¹¹⁹ In fact, the GN submission summarized by saying:

“One of DOE’s main concerns with this application pertains [sic] the paucity of information regarding the short and long term management of the existing sewage lagoon. In particular, DOE is concerned that the well-documented (as expressed in many technical studies) requirements of repairs and upgrades appear to have been ignored. Alternatively, there does not appear to be a comprehensive plan for decommissioning the lagoon, should this become necessary.”¹²⁰

¹¹⁵ The parameters include BOD, COD, TSS, pH, ammonia, total N, total Phosphorous, metals including mercury, oil and grease, phenols, total and fecal coliforms, and E. coli. Bioassay testing should occur for the SNP stations 4x/year. See EC written submission, Feb. 21, 2006, pp. 13-14.

¹¹⁶ EC written submission, Feb. 21, 2006, p.13-14.

¹¹⁷ EC written submission, Feb. 21, 2006, pp.14-15.

¹¹⁸ DFO written submission, Feb. 21, 2006, p.3.

¹¹⁹ GNDOE written submission, item 3. Waste Disposal-Sewage.

¹²⁰ GNDOE written submission, Executive Summary, p.1.

DIAND

Once again, DIAND's recommendations mirrors EC's, thus, we will not repeat it here.¹²¹

BMHS

Mr. Little's written and oral presentation, including several slides taken of the dump sites and community, urged the Board to consider composting facilities to save costs and improve the health and safety of residents and users of Iqaluit.¹²²

Siu-ling Han

Ms. Han raised several concerns: lack of consultation,¹²³ high contamination levels,¹²⁴ toxicity of sewage sludge,¹²⁵ human exposure sources,¹²⁶ run-off from the landfill,¹²⁷ impact on life,¹²⁸ fate of the sewage sludge,¹²⁹ and operational or practical concerns such as lack of staff and funding.¹³⁰

Admittedly, there was no evidence of actual harm based on the City's current "Phase I" wastewater application. In other words, there is no evidence that fish will be killed; however, the Board does not believe that kind of proof is necessary; what is needed in Iqaluit is:

¹²¹ DIAND written submission, Feb. 22, 2006, pp.9-17.

¹²² BMHS written submission, Feb. 21, 2006.

¹²³ Exhibit 27, slide 3.

¹²⁴ Exhibit 27, slide 9.

¹²⁵ Exhibit 27, slide 10.

¹²⁶ Exhibit 27, slide 11.

¹²⁷ Exhibit 27, slide 12.

¹²⁸ Exhibit 27, slide 15.

¹²⁹ Exhibit 27, slide 16.

¹³⁰ Exhibit 27, slides 17-20.

- a) Respect for the environment;¹³¹
- b) The City cannot operate a sewage treatment plant without committing to secondary treatment and expect the Board to licence it;¹³²
- c) The City cannot discharge deleterious substances and expect Courts to be pleased;¹³³ and
- d) The City cannot expect to do this in an area of rich resources protected by settled land claims.¹³⁴

The Board has included conditions applying to Waste Disposal and Waste Facilities in Part D of the licence. With respect to effluent quality limits to be achieved at the discharge point of the Wastewater Treatment Plant, the Board has prescribed limits that will protect water quality and aquatic life in the receiving waters. Effluent quality criteria for the Wastewater Treatment Plant discharge to the receiving environment has been carefully considered by the Board. The Board has given considerable attention to the setting of effluent quality criteria for the Plant and to achieving improved environmental quality at all points involving a discharge to the environment. The Board has considered all the information provided by the Applicant, the interveners, and applicable legislation, and has decided, after reviewing all evidence, that the criteria set out in the licence will be sufficiently stringent to prevent any adverse effects to water.

¹³¹ R.v.Iqaluit, 50 CELR (NS), 116, 118 para 5 (Nun. Ct Justice 8/8/02)

¹³² NWSRTA, Section 57(b)

¹³³ R.v.Iqaluit, and R v. Dawson City, supra

¹³⁴ 1994 15CELR(NS) 114 (NWTSC)

In Conclusion, the Board has imposed in this Licence very stringent conditions with respect to waste that are necessary to ensure the protection of water, the environment, and the health and safety of the public.

PART F: CONDITIONS APPLYING TO CONSTRUCTION

In the absence of detailed implementation schedule with the Applicant, the Board attempted to provide maximum flexibility to the Applicant while ensuring necessary information will be provided for the Board's consideration. The conditions applying to construction are self-explanatory and are in the Licence to ensure that all new construction activities are carried out properly and follow best practices to avoid the possibility of impacts to water.

PART G: CONDITIONS APPLYING TO MODIFICATIONS

These conditions are self-explanatory and are imposed on the Licensee to ensure that modifications to facilities approved under this Licence are carried out within the scope of the Licence and do not involve a breach of Licence conditions or of legislation.

PART H: CONDITIONS APPLYING TO CONTINGENCY PLANNING AND OPERATION AND MAINTENANCE

The conditions found in Part H of the licence are self-explanatory and are imposed on the Licensee to ensure that measures are in place in the event of spills, and that the operation and maintenance of all facilities are carried out in proper fashion. In particular, the Board recognizes the importance of effective management of waste and therefore requires the City to submit standard management plans for the waste facilities¹³⁵ to ensure proper monitoring and treatment of wastes.

PART I: CONDITIONS APPLYING TO GENERAL AND AQUATIC EFFECTS

MONITORING PROGRAM

As stated previously, for the purpose of ensuring compliance with the licence or regulations, an Inspector designated by the Minister may inspect or examine works, waters or waste and exercise other powers according to the *Act*.¹³⁶ For the purpose of monitoring, the Board may include conditions in its licence (and it has) regarding monitoring programs to be undertaken.¹³⁷

The Board agrees, and pursuant to this licence and subject to section 70(2) of the *Act*, has required the proponent to be fully responsible for the monitoring Programs and Plans identified in Section K and Section L, respectively, of this water licence. The monitoring Programs call for extensive and ongoing sampling and analysis to be conducted at those stations identified in those Parts. The number of stations, the sampling frequency, and the

¹³⁵ This includes: Wastewater treatment facilities, Landfill and Landfarm operation and management plan(s). This can be submitted as stand alone documents or as one complete Operation and Management Plan

¹³⁶ Section 85-94 of the Act

¹³⁷ Section 70 (1)(c) of the Act

list of parameters to be analyzed have been carefully looked at by the Board in order to monitor the effectiveness of the waste treatment facilities and provide an early warning of potential effects to water.

PART J: CONDITIONS APPLYING TO CLOSURE AND RECLAMATION

The Board must consider, under section 57(b)(iii) of the Act, the restoration of a site in the event of any future closing or abandonment of that undertaking. Accordingly, the Board requires in this licence that the Licensee prepares and submit, for review and approval at various stages of the life of a facility, detailed abandonment and restoration plans for all facilities that will be abandoned during the term of this Licence in general, and more particularly for the West 40 Landfill which should become full at the end of the term of this Licence.

SCHEDULES

Schedules provide instructive detail to the conditions appearing in more general terms in the main body of the Licence and are spelled out in this format for greater clarity. Schedule except for definitions are for reports to be filed with the board.

APPENDIX A-LIST OF SUBMISSIONS & CORRESPONDENCE

Application:

1. Cover letter and initial submission of application for Water License by City of Iqaluit dated January 16, 2004.

Initial Submissions & Correspondence:

1. Department of Justice Canada Lee F. Weber Legal Counsel Submission Proceedings relating to water license for Town of Iqaluit and re: Counsel to DIAND dated February 9, 2004
2. Letter to Brad Sokach Director of Engineering City of Iqaluit dated February 9, 2004 Re: Acknowledgement and Receipt of Application Fee for Iqaluit Renewal Water License. Phyllis Beaulieu Licensing Administrator Nunavut Water Board (NWB).
3. Letter to Jim Wall Technical Advisor NWB dated March 11, 2004 Re: City of Iqaluit Water License. Brad Sokach Director of Engineering City of Iqaluit.
4. Received March 29, 2004 by the NWB from the City of Iqaluit Proposed WWTP Outfall Drawings & HWM location Drawing.
5. Received March 29, 2004 by the NWB from the City of Iqaluit Water Treatment Plant Pre-Design Brief dated March 2002.
6. Letter to Colette Meloche Environmental Assessment Specialist Environment Canada (EC) dated April 5, 2004 Re: Comments/Recommendations on Effluent Quality Guidelines for Iqaluit WWTP. Jim Wall Technical Advisor NWB.
7. Letter to Brad Sokach Director of Engineering City of Iqaluit dated April 6, 2004 Re: Application Acknowledgement for Water License for the City of Iqaluit. Jim Wall Technical Advisor NWB.
8. EC Colette Meloche Environmental Assessment Specialist Submission NWB3IQA04 – Earth Tech Canada Inc. Effluent Quality Criteria for the Iqaluit Water Treatment Plant dated April 15, 2004.
9. Letter to Jim Wall Technical Advisor NWB dated April 16, 2004 Re: Reports for Water License Application. Brad Sokach Director of Engineering City of Iqaluit.
10. Received April 26, 2004 by the NWB from the City of Iqaluit 2001 Lake Geraldine Reservoir Dam Safety Inspection.

11. Received April 26, 2004 by the NWB from the City of Iqaluit 2002 Trow Dam Safety Review for Sewage Lagoon dated October 4, 2002.
12. Letter to Brad Sokach Director of Engineering City of Iqaluit dated April 29, 2004 Re: Receipt Additional Documents for Water License for the City of Iqaluit. Jim Wall Technical Advisor NWB.
13. Received June 22, 2004 by the NWB from the City of Iqaluit 2004 Earth Tech Draft Iqaluit WWTP Design Report date May 2004.
14. Letter to Brad Sokach Director of Engineering City of Iqaluit dated July 21, 2004 Re: application for Type “A” Water License for the City of Iqaluit. Jim Wall Technical Advisor NWB.
15. Received August 05, 2004 by the NWB from the City of Iqaluit 2002 Trow Water & Sewer Study dated May 2002.
16. Received August 05, 2004 by the NWB from the City of Iqaluit 2002 Trow Water & Sewer Study Technical Annex dated May 2002.
17. Received August 05, 2004 by the NWB from the City of Iqaluit 2002 Water Distribution System Recording Drawing.
18. Received August 19, 2004 by the NWB from the City of Iqaluit 2004 Trow Raw Water Supply & Storage Review dated April 2004.
19. Letter to Scott Stewart Water Resource Officer Department of Indian & Northern Development (DIAND), Doug Sitland Manager Capital Projects Community & Government Services (CGS) dated August 24, 2004 Re: Iqaluit Landfill Expansion Approval. Mark Hall Director Public Works City of Iqaluit.
20. DIAND Stephanie Hawkins Qikiqtani Regional Coordinator Intervention Comments NWB3IQA – Technical Questions with respect to the City of Iqaluit Water License Application dated August 27, 2004.
21. EC Colette Meloche Environmental Assessment/Contaminated Sites Specialist Intervention Comments NWB3IQA – City of Iqaluit Water License Renewal Application – Technical Meeting Comments dated August 27, 2004.
22. Fisheries & Oceans Canada (DFO) Derrick Moggy Habitat Biologist Intervention Comments Re: Comment regarding the Type “A” Water License application for the City of Iqaluit dated August 30, 2004.
23. DIAND Scott Stewart Water Resource Officer Submission Iqaluit Landfill Expansion dated September 1, 2004.

24. DOE Earle Baddaloo Director Environmental Protection Service Intervention Comments City of Iqaluit Renewal application for water License dated September 2, 2004.
25. Memo to NWB dated September 2, 2004 Re: North 40 Issues. City of Iqaluit.
26. Received September 04, 2004 by the NWB from the City of Iqaluit 2002 Trow Landfill Waste Audit dated October 18, 2002.
27. Memo to Iqaluit Distribution List dated September 7, 2004 Re: Thank you letter to participants of technical meeting and pre-hearing conference. Patrick Duxbury Project Coordinator NWB.
28. Paul Crowley Public Participant of the City of Iqaluit Intervention Comments NWB3IQA – City of Iqaluit Water License Renewal Application – Technical Meeting Comments dated September 8, 2004.
29. EC Colette Meloche Environmental Assessment/Contaminated Sites Specialist Intervention Comments NWB3IQA – City of Iqaluit Water License Renewal Application – Closing Comments from Pre-hearing Conference, September 3, 2004 dated September 9, 2004.
30. DFO Derrick Moggy Habitat Biologist Intervention Comments Re: Comments regarding the Type “A” Water License application for the City of Iqaluit dated September 10, 2004.
31. DIAND Stephanie Hawkins Qikiqtani Regional Coordinator Intervention Comments NWB3IQA – Requests for additional information dated September 10, 2004.
32. Waste Matters Inc. Board of Directors Shirley Alder, Guy D’ Argencourt, Nick Dennahower, Neida Gonzalez, Carolina Palacios, Lynn Peplinski, Linda Tingley Intervention Comments Iqaluit Water License Application – Technical Meeting dated September 10, 2004.
33. Letter to Brad Sokach Director of Engineering City of Iqaluit dated September 27, 2004 Re: No Subject Philippe di Pizzo Executive Director NWB.
34. Letter to Brad Sokach Director of Engineering City of Iqaluit dated October 5, 2004 Re: Application for a Municipal Water License for the City of Iqaluit. Philippe di Pizzo Executive Director NWB.
35. Received October 29, 2004 by the NWB from the City of Iqaluit 2003 CH2M WWTP Completion Study dated October 2003.

36. Received October 29, 2004 by the NWB from the City of Iqaluit, City of Iqaluit General Plan.
37. Received October 29, 2004 by the NWB from the City of Iqaluit Environmental Study of a Military Installation and Six Waste Disposal Sites at Iqaluit, NWT Volume 1: Site Analysis dated March 1995.
38. Received October 29, 2004 by the NWB from the City of Iqaluit Environmental Study of a Military Installation and Six Waste Disposal Sites at Iqaluit, NWT Volume 1: Appendices dated March 1995.
39. Received October 29, 2004 by the NWB from the City of Iqaluit 2004 Lake Geraldine Reservoir Dame Safety Inspection dated January 7, 2004.
40. Received November 1, 2004 by the NWB from the City of Iqaluit 1991 Sewage Lagoon Reconstruction & Drainage Improvement Record Drawings.
41. Letter to Philippe di Pizzo Executive Director Nunavut Board dated November 9, 2004 Re: Response to NWB Letter dated September 27, 2004. Brad Sokach Director of Engineering City of Iqaluit.
42. Letter to Brad Sokach Director of Engineering City of Iqaluit dated November 15, 2004 Re: Application for a Municipal Water License for the City of Iqaluit. Philippe di Pizzo Executive Director NWB.
43. Community & Government Services Tom Rich Deputy Minister Submission Letter of August 24, 2004 from Mark Hall to Doug Sitland concerning expansion of the Iqaluit Landfill dated November 22, 2004.
44. Letter to Philippe di Pizzo Executive Director NWB dated November 30, 2004 Re: Additional Information Supporting the City of Iqaluit Letter dated November 9, 2004. Brad Sokach Director of Engineering City of Iqaluit.
45. Department of Indian Affairs & Northern Development Stephanie Hawkins Qikiqtani Regional Coordinator Submission Request for clarification on procedure for continuing with water licensing process dated November 30, 2004.
46. Received December 02, 2004 by the NWB from the City of Iqaluit 1995 Lake Geraldine Reservoir Record Drawings date April 1995
47. Received December 02, 2004 by the NWB from the City of Iqaluit 2003 Sewage Lift Station Spill Contingency Plan dated May 29, 2003
48. Received December 02, 2004 by the NWB from the City of Iqaluit Summary of repairs to Lake Geraldine Reservoir since last DSI.

49. Received January 04, 2005 by the NWB from the City of Iqaluit 1962 Lake Geraldine Reservoir Record Drawings.
50. Received January 04, 2005 by the NWB from the City of Iqaluit 1985 Lake Geraldine Reservoir Record Drawings date January 1985.
51. Received January 04, 2005 by the NWB from the City of Iqaluit 1994 UMA landfill O&M Plan.
52. Received January 04, 2005 by the NWB from the City of Iqaluit 1998 FSC Sewage Treatment Lagoon Investigation Final Report dated February 5, 1998.
53. Received January 04, 2005 by the NWB from the City of Iqaluit 2001 Dillon Landfill Facility Expansion Preliminary Design Report.
54. Received January 04, 2005 by the NWB from the City of Iqaluit 2002 Dillon Landfill O&M Plan.
55. Received January 04, 2005 by the NWB from the City of Iqaluit 2002 Trow Sewage Lagoon Annual Inspection dated January 7, 2003.
56. Received January 04, 2005 by the NWB from the City of Iqaluit 2003 Trow Geo-Technical Investigation Sewage Lagoon dated October 8, 2003.
57. Received January 04, 2005 by the NWB from the City of Iqaluit 2003 Trow Surface Water to Sewage Lagoon dated October 2003.
58. Received January 04, 2005 by the NWB from the City of Iqaluit 2004 Earth Tech Iqaluit WWTP Conversion & Expansion (95% Review Design Plans Vol.1) dated October 2004.
59. Received January 04, 2005 by the NWB from the City of Iqaluit 2004 Earth Tech Iqaluit WWTP Conversion & Expansion (95% Review Design Plans Vol.2) dated October 2004.
60. Received January 04, 2005 by the NWB from the City of Iqaluit 2004 Updated Spill Contingency Plan dated November 2004.
61. Received January 04, 2005 by the NWB from the City of Iqaluit 2005 Dillon Landfill O&M Plan Table of Contents.
62. Received January 04, 2005 by the NWB from the City of Iqaluit Electric & Instrumentation O&M Manual for the WTP.

63. Received January 04, 2005 by the NWB from the City of Iqaluit Primary Treatment Option Memo dated March 7, 2004.
64. Received January 04, 2005 by the NWB from the City of Iqaluit Proposed WWTP Outfall Construction Design Drawing.
65. Received January 04, 2005 by the NWB from the City of Iqaluit Sewage Lift Station Monitoring Information.
66. Received January 04, 2005 by the NWB from the City of Iqaluit Sludge Management Memo dated October 8, 2004.
67. Received January 04, 2005 by the NWB from the City of Iqaluit WTP Project Record Drawings.
68. Received January 04, 2005 by the NWB from the City of Iqaluit WTP Process Record Drawings.
69. Received January 04, 2005 by the NWB from the City of Iqaluit WTP Electrical & Instrumentation Record Drawings.
70. Received January 04, 2005 by the NWB from the City of Iqaluit WTP O&M Record Drawings.
71. Letter to Brad Sokach Director of Engineering City of Iqaluit dated January 17, 2005 Re: Nunavut Water Board response to the City of Iqaluit's November 30, 2004 submission of information Philippe di Pizzo Executive Director NWB.
72. Letter Stephane Gelinas, Kudlik Construction Ltd dated February 10, 2005 Re: Requirement of Water License for continued operation of concrete plant in the North 40. Brad Sokach Director of Engineering, Geoff Baker Project Officer City of Iqaluit.
73. Letter to Chris Groves Manager of Operations 4577 Nunavut Ltd. dated February 10, 2005 Re: Requirement of Water License for continued operation of asphalt & concrete plants in the North 40. Brad Sokach Director of Engineering, Geoff Baker Project Officer City of Iqaluit.
74. Letter to Philippe di Pizzo Executive Director NWB dated March 8, 2005 Re: Response to NWB Letter dated January 17, 2005. Brad Sokach Director of Engineering, Geoff Baker Project Officer City of Iqaluit.
75. Received (with CD) March 22, 2005 by the NWB from the City of Iqaluit, Iqaluit Wastewater Treatment Plant-Conversion & Expansion-Phase 1 (Volume 1 of 2: Front End, Division 1 to Division 14)

76. Received (with CD) March 22, 2005 by the NWB from the City of Iqaluit, Iqaluit Wastewater Treatment Plan-Conversion & Expansion-Phase 1 (Volume 2 of 2: Division 15 to Division 17)
77. Received March 24, 2005 by the NWB from the City of Iqaluit Sludge Management RFP (Proposals Due: April 29, 2005).
78. Letter to Jim Wall Technical Advisor NWB dated March 30, 2005 Re: City of Iqaluit, Plateau Subdivision. Michele Bertol Director Planning & Lands City of Iqaluit.
79. Memo to John Keyuk, Jonathan Browne dated April 5, 2005 Re: Iqaluit Comments on Earthtech's Activated Sludge & NWC's EVC Wastewater Treatment Plan Proposals for Iqaluit. Jeffery White President Northern Watertek Corporation.
80. Memo to Mayor & Council City of Iqaluit dated April 11, 2005 Re: Northern Watertek Corporation Sewage Treatment System. Brad Sokach Director of Engineering, Ian Fremantle Chief Administrative Officer City of Iqaluit.
81. Memo to Nunatsiaq News dated April 13, 2005 Re: Request to Place Ad for City of Iqaluit – NWB3IQA. Phyllis Beaulieu Manager of Licensing NWB.
82. Letter to Michele Bertol Director Planning & Lands City of Iqaluit dated April 18 2005 Re: City of Iqaluit, Plateau Subdivision. Dionne Filiatrault Senior Tech NWB.
83. Memo to Jeffery White President Northern Watertek Corporation dated April 19, 2005 Re: Snowfluent Questions. Mark Hall Director of Public Works City of Iqaluit.
84. Letter to City of Iqaluit dated April 20, 2005 Re: Confirmation of Snowfluent Questions Received. John Keyuk.
85. EC Colette Spagnuolo Environmental Assessment/Contaminated Sites Specialist Submission Re: Notice of Hearing – Application for a Municipal Water License for the City of Iqaluit dated April 21, 2005.
86. DIAND Stephanie Hawkins Qikiqtani Regional Coordinator Submission Request for opinion on wastewater treatment technology dated April 22, 2005.
87. EC Colette Spagnuolo Environmental Assessment/Contaminated Sites Specialist Intervention Comments Iqaluit Sewage Treatment Plant, Snowfluent and Water License dated April 25, 2005.

88. Letter to Iqaluit Distribution List dated April 25, 2005 Re: Agenda for technical meeting and pre-hearing on the Iqaluit Water License Renewal Application. Dionne Filiatrault Senior Tech NWB.
89. Memo to Jeffery White President Northern Watertek Corporation dated April 25, 2005 Re: Confirmation Memo. Mark Hall Director Public Works City of Iqaluit.
90. Letter to Philippe di Pizzo Executive Director NWB dated April 25, 2005 Re: Municipal Infrastructure Conference – Iqaluit, NU – July 5 to 7 2005. Tom Rich Deputy Minister Department of Community & Government Services.
91. Notice to Iqaluit Distribution List dated April 26, 2005 Re: Notice of Application & Public Hearing. Phyllis Beaulieu Manager Licensing NWB.
92. DIAND Stephanie Hawkins Qikiqtani Regional Coordinator, Collette Spagnuolo Environmental Assessment/Contaminated Sites Specialist EC, Gladis Lemus Manager Pollution Control Department of The Environment Government of Nunavut, Derrick Moggy Habitat Management Biologist DFO Intervention Comments NWB3IQA – City of Iqaluit technical meeting and pre-hearing dated May 5, 2005
93. Department of Environment DOE Gladis Lemus Manager Pollution Control Intervention Comments City of Iqaluit Water License Renewal-Technical Hearing dated May 11, 2005.
94. Received May 20, 2005 by the NWB from the City of Iqaluit solid Waste Facility Operation & Maintenance Manual dated May 18, 2005.
95. Letter to Brad Sokach Director of Engineering City of Iqaluit dated May 31, 2005 Re: NWB Technical & Pre-Hearing Meeting Decision. Philippe di Pizzo Executive Director NWB.
96. Letter to Philippe di Pizzo Executive Director NWB dated June 1, 2005 Re: Submission of Additional Information. Brad Sokach Director of Engineering, Geoff Baker Acting Manager Capital Projects City of Iqaluit.
97. Received June 16, 2005 by the NWB from the City of Iqaluit Electrical & Instrumentation Operation & Maintenance Manual for the Iqaluit Water Treatment Plant.
98. Received June 16, 2005 by the NWB from the City of Iqaluit Mechanical Operation & Maintenance Manual for the Iqaluit Water Treatment Plant.
99. Received June 16, 2005 by the NWB from the City of Iqaluit Process Operation & Maintenance manual for the Iqaluit Water Treatment Plant.

100. DIAND Stephanie Hawkins Qikiqtani Regional Coordinator, DFO Derrick Moggy Habitat Management Biologist, EC Colette Spagnuolo Environmental Assessment/ Contaminated Sites Specialist Submission City of Iqaluit – Municipal wastewater treatment information dated June 17, 2005.
101. Letter to Brad Sokach Director of Engineering City of Iqaluit dated June 23, 2005 Re: Notice of Postponement of Hearing Application for a Municipal Water License for the City of Iqaluit. Phyllis Beaulieu Manager of Licensing NWB.
102. Letter to Philippe di Pizzo Executive Director NWB dated July 5, 2005 Re: Additional Information to Support the City of Iqaluit Water License Application. Geoff Baker Manager Capital Projects City of Iqaluit.
103. Letter to Brad Sokach Director of Engineering City of Iqaluit dated July 6, 2005 Re: Procedural Directions. Philippe di Pizzo Executive Director NWB.
104. DIAND Scott Stewart Water Resource Officer Submission Contaminated soil excavation in the Lower Base area of Iqaluit dated July 15, 2005.
105. Received July 26, 2005 by the NWB from the City of Iqaluit Contract Documents & Technical Specifications dated June 2005.
106. Received July 26, 2005 by the NWB from the City of Iqaluit Contract Documents & Technical Specifications dated July 2005.
107. Letter to Philippe di Pizzo Executive Director NWB dated July 29, 2005 Re: Declaration of Conflict of Interest. Robert D. Hanson Acting Chairman NWB.
108. Letter to Philippe di Pizzo Executive Director NWB dated August 4, 2005 Re: Outstanding Issues for Iqaluit Water License Application. Brad Sokach Director of Engineering, Geoff Baker Manager Capital Projects City of Iqaluit.
109. Received by the NWB, Note to Regulatory Stakeholders dated August 4, 2005. Brad Sokach Director of Engineering City of Iqaluit.
110. Letter to Philippe di Pizzo Executive Director dated August 8, 2005 Re: Outstanding Issues for Iqaluit Water License Application. Brad Sokach Director of Engineering, Geoff Baker Manager Capital Projects City of Iqaluit.
111. EC Colette Spagnuolo Environmental Assessment/Contaminated Sites Specialist Submission Sewage Sludge Management Planning dated August 31, 2005

112. Letter to Geoff Baker Manager Capital Project City of Iqaluit dated September 1, 2005 Re: City of Iqaluit Water License Application. Philippe di Pizzo Executive Director NWB.
113. Received by the NWB from the City of Iqaluit Sewage Sludge Management Plan Prepared by Earth Tech Canada Inc. City of Iqaluit (Draft Planning Report Prepared by Earth Tech Canada Inc.) dated December 13, 2005.
114. Letter to Geoff Baker Director of Engineering City of Iqaluit dated December 27, 2005 Re: City of Iqaluit Water Licence Notice of Public Hearing Philippe di Pizzo Executive Director NWB.
115. Memo to Geoff Baker Director of Engineering City of Iqaluit dated January 9, 2006 Re: Pre-Hearing Conference Application for a Type A Licence, City of Iqaluit (Agenda Enclosed) Philippe di Pizzo Executive Director NWB
116. Public Hearing Agenda sent to distribution list January 27, 2006 Philippe di Pizzo Executive Director NWB
117. Letter to Geoff Baker Director of Engineering City of Iqaluit dated January 27, 2006 Re: Nunavut Water Board Pre-Hearing Meeting Decision Philippe di Pizzo Executive Director NWB.
118. Notice to Local Organizations dated January 30, 2006 (Notice of Public Hearing attached) Richard Dwyer Licensing Trainee NWB.
119. Memo to Nunatsiaq News to place ad dated January 30, 2006 Re: Request to Place Ad for City of Iqaluit – NWB3IQA Richard Dwyer Licensing Trainee NWB
120. Received February 2, 2006 by the NWB from City of Iqaluit Agenda City of Iqaluit Solid Waste Facility Expansion.
121. Received February 3, 2006 by the NWB from Mark Hall City of Iqaluit to Jim Little Bill Mackenzie Memorial Society Re: Safe Storage of Car Batteries
122. Submission dated February 21, 2006 from Peter Blackall EC titled: Environment Canada's Submission to the Nunavut Water Board regarding the Type A Water License Application Submitted by the City of Iqaluit Final Public Hearing.
123. Submission from Bill Mackenzie Memorial Society titled: Solid Waste Presentation To The Nunavut Water Board.

124. Submission from Bill Mackenzie Memorial Society titled: A Presentation on The Iqaluit Waste Water Treatment Plan To The Nunavut Water Board.
125. Intervention submission dated February 21, 2006 from DOE titled: Intervention to The Nunavut Water Board Regarding the Matter of The City of Iqaluit's (Type A) Water License Renewal Application Final Public Hearing-March 2006
126. Intervention submission dated February 21, 2006 from Derrick Moggy DFO Re: DFO Intervention Comments – City of Iqaluit's Type "A" Water Licence
127. Intervention submission from Jim Rogers DIAND titled: City of Iqaluit Type A Water License Application Submission to the Nunavut water Board by the Department of Indian Affairs and Northern Development Final Public Hearing Intervention.
128. Letter to Philippe di Pizzo Executive Director & Bill Tilleman Legal Counsel NWB dated March 15, 2006 Re: IQALUIT WATER LICENCE: Confirmation of certain matters. Lee Webber Legal Counsel DIAND.
129. Letter to Lootie Toomasie Chairperson of the Board NWB dated March 22, 2006 Re: Application by the City of Iqaluit – Board file number NWB3IQA; Issues relating to proposed site of landfill extension. Carl McLean Director of Operations DIAND.
130. Letter to Lootie Toomasie Chairperson of the Board NWB received March 22, 2006 Re: Submission by the City of Iqaluit, Outstanding Water Licence Issues. Geoff Baker Manager Engineering Services City of Iqaluit.
131. Submission received March 23, 2006 from Siu-Ling Han Public Citizen titled Submission to Nunavut Water Board.
132. Letter to Lootie Toomasie Chairperson of the Board NWB received April 4, 2006 Re: Nunavut Water Board Hearing – City of Iqaluit Water License. Doug Sitland Director Community Infrastructure and Lands CGS

**APPENDIX B – LIST OF EXHIBITS FILED AT OR FOLLOWING THE
March 6 – 10 IQALUIT PUBLIC HEARING**

- Exhibit 1 Submitted by City of Iqaluit named City of Iqaluit Water License Application, March 2006 Power Pint Presentation – Hard Copy.
- Exhibit 2 Submitted by City of Iqaluit named City of Iqaluit Water Board Presentation, March 2006 – Electronic Copy.
- Exhibit 3 Submitted by City of Iqaluit named Memorandum dated March 3, 2006 regarding City of Iqaluit Landfill Site Expansion.
- Exhibit 4 Submitted by Indian & Northern Affairs Canada (DIAND) named Iqaluit Water License; DIAND Submission Power Point Presentation – Hard Copy.
- Exhibit 5 Submitted by DIAND named DIAND Power Point Presentation – Electronic Copy.
- Exhibit 6 Submitted by City of Iqaluit named City of Iqaluit Type “A” Water Licence General Water & Supply Services Power Point Presentation – Hard Copy.
- Exhibit 7 Submitted by Department of Fisheries & Oceans (DFO) named DFO Power Point Presentation – Hard Copy
- Exhibit 8 Submitted by Government of Nunavut Department of Environment (DOE) named GN Power Point Presentation – Hard Copy
- Exhibit 9 Submitted by Environment Canada (EC) named University of Manitoba Report regarding short & medium chain chlorinated parafins.
- Exhibit 10 Submitted by City of Iqaluit named Trow Associates drawings to support raw water storage expansion report, 2004 (4 drawings).
- Exhibit 11 Submitted by EC named Environment Canada, presentation, intervention, priority list – Electronic Copy.
- Exhibit 12 Submitted by EC named Environment Canada, Presentation on Solid Waste Management – Hard Copy.
- Exhibit 13 Submitted by DIAND named DIAND – Suggestions to NWB for priorities under the Iqaluit Water Licence by DIAND.

- Exhibit 14 Submitted by City of Iqaluit named City of Iqaluit – sludge Management Plan presentation, Ken Johnson.
- Exhibit 15 Submitted by City of Iqaluit, Solid Waste Facility O&M Manual, April 2005 (include Table 3.4)
- Exhibit 16 Submitted by Bill McKenzie Humanitarian Society (BMHS) named BMHS – Presentation (both) – Electronic Copy.
- Exhibit 17 Submitted by NWB Public Hearing named Iqaluit Sewage Treatment Planning Study (July 11, 1997) Dillon Consulting Limited, Electronic Copy
- Exhibit 18 Submitted by DIAND named DIAND – Sampling & Inspection Reports.
- Exhibit 19 Submitted by DFO named DFO – Presentation Electronic.
- Exhibit 20 Submitted by NWB named Guideline List.
- Exhibit 21 Submitted by EC named Environment Canada, Recommendations & Suggested Priority List – Hard Copy.
- Exhibit 22 Submitted by BMHS named BMHS – Economics of Composting Power Point Presentation – Hard Copy
- Exhibit 23 Submitted by BMHS named BMHS – Presentation – Electronic Copy.
- Exhibit 24 Submitted by EC named Environment Canada – Presentation on wastewater treatment – Hard Copy.
- Exhibit 25 Submitted by DOE named GN-DOE Power Point Presentation, closing statement and priorities, 9/03/06.
- Exhibit 26 Submitted by DFO named DFO closing statement.
- Exhibit 27 Submitted by Public Citizen Siu-Ling Han named Submission to the NWB- Siu-Ling Han
- Exhibit 28 Submitted by City of Iqaluit named Earth Tech Canada’s report regarding Phase 1 – Primary Treatment Discussion (March 7, 2007)
- Exhibit 29 Submitted by City of Iqaluit named Preliminary Workplan Submission March 9/06.
- Exhibit 30 Submitted by City of Iqaluit named Sewage lagoon, Lake Geraldine Bathymetric study & West Dyke upgrade (March 9/06) – Electronic Copy.

Exhibit 31 Submitted by City of Iqaluit named Trow Associates – Raw water Storage Expansion Site Plan (Dec/04).

Exhibit 32 Submitted by City of Iqaluit named Trow Associates – Lake Geraldine Current & Proposed Water Elevations (Dec 03)

Exhibit 33 Submitted by City of Iqaluit named Document Regarding the Submission of the City of Iqaluit Outstanding Water License Issues.

Exhibit 34 Submitted by DIAND named Letter From DIAND dated March 22, 2006.

Exhibit 35 Submitted by CGS named Letter From Doug Sitland to Nunavut Water Board

Exhibit 36 ESG Study

Exhibit 37 Submitted by the City of Iqaluit named Schematic Outlining the City's Obligation and Commitments.

Exhibit 38 Submitted by Siu-Ling Han named Submission to Nunavut Water Board

Exhibit 39 Submitted by Jim Little - Resumes of Daryl McCartney and James Martel.

