Submission to Nunavut Water Board
From: Siu-Ling Han
Re: Hearings March 24, 2006

I am employed full-time and unfortunately cannot take the time from work to attend the second session of hearings on March 24th. As I cannot be there in person, please accept this written expression of concern with regard to the City of Iqaluit's water license application. My apologies for not providing a copy in Inuktitut.

1. Availability of Advance Information

The information that the City could present on March 24th will not be available in advance of the hearing. The public will therefore not have an opportunity to review the information or to prepare questions or comments in advance of the hearing.

2. Relevance of Alternative Options for Sludge Management

The relevance (to the Board) of presenting alternative options for sludge management has been questioned. It is suggested that if the options carry differing risks and outcomes with respect to discharges to the environment, then this should be considered relevant.

Testimony at the first session of the hearing indicated that the consultant's proposed pilot project was not planned to accommodate the amount of sludge that would be generated by a water treatment plant operating to provide secondary treatment of the sewage (i.e Phase II), or for Iqaluit's projected population growth to 12, 000.

- Does the short-term planning timeframe for the sludge management plan proposed by the consultant pose a risk that environmental quality and discharge will be inadequate in the medium to long term if there is no plan to accommodate the ultimate sludge production of the sewage treatment plant?
- Is there any accommodation for clean-up of sludge in the sewage lagoon?

Currently sewage sludge is transported by road to the landfill.

- Notwithstanding any mitigation or monitoring proposed, there is a risk that sewage sludge could be leaked or spilled along the transport route of the 'honey wagon'

If feasible, the sewage sludge management option presented by the consultant requires a large land area at the landfill for disposal/manipulation of the sewage sludge.

- If the landfill is reaching capacity, any sludge management plan that does not make efficient use of available space will accelerate the need for a new landfill amd the consequent new approvals from the Water Board
- A requirement for a new landfill in a new location has significant environmental implications

DIAND (letter to NWB dated March 22, 2006) states the following:

DIAND also agrees with the idea that the City must identify an alternative solid waste disposal site, and shift its disposal activity to that site, as quickly as possible and subject to the requirements of licensing processes.

While a new landfill site is not the topic of the present hearing, as DIAND's letter forms part of the hearing evidence, the comment must be made that unnecessary or premature creation of new or expanded landfill sites has impacts that are directly relevant to the Board's mandate. The position taken by DIAND in this case is disturbing.

- In most major jurisdictions in Canada, waste management practices are such that, to the extent possible, reduction and diversion of waste is throughly explored before site expansion or new site creation are pursued. To do otherwise is to disregard the environmental and social impacts of landfill creation.
- It is unfortunate, to say the least, that the federal government's primary land manager in the north, by encouraging without reservation the creation of a new landfill, is taking a position that is both cavalier about the use of Crown lands for garbage disposal; and not reflective of modern reduction/diversion waste management approaches common elsewhere in Canada.

If feasible, the sewage sludge management option presented by the consultant will result in a very large surface area of sewage sludge deposited in a relatively uncontained/exposed environment. The larger and more open an area is, the more difficult it is to control all the factors (melting, run-off, wind, temperature, snow deposition, etc.) that may influence that area and the processes that are intended to occur there.

- How well can a 'small-scale' pilot project for managing sludge in the open, as proposed, predict the real operating conditions when at capacity? Has the size of the 'pilot project' been specifically calibarated to allow accurate predictions of efficacy at 'full-operating size'?
- How well are the environmental risks identified and controlled? Does reliability of models predicting how the system will operate vary with size of land area being managed?

If the sewage sludge management option presented by the consultant is not feasible, testimony at the hearing indicates that untreated sewage sludge will be deposited directly to the landfill.

- What are the risks, hazards and anticipated regulatory requirements associated with direct disposal of untreated sewage sludge to the landfill?
- Given the limitations of the proposed containment of the landfill run-off, and the lack of commitment to treatment of contained run-off, is there an increased risk that unsuitable sewage sludge discharge will reach the environment if sludge is deposited in the land fill?

It is noted that the sludge management option presented by Mr. Jim Little, if feasible, appears to:

- eliminate the risk of raw sewage sludge being discharged to the environment through spillage or leakage during transport
- reduce the risk of raw sewage sludge run-off reaching the environment due to incomplete containment at the land fill
- diminish the need for a large land area to treat the sewage sludge
- diminish the unknowns associated with handling the sludge in a large, exposed area

- offer the opportunity to treat leachate from the sewage sludge when the treatment plant is operating at capacity
- offer the opportunity to treat sludge from the sewage lagoon

3. Impartial Analysis of Technical Issues

It is noted that in testimony provided at the first session of the hearings, the consultant indicated a lack of direct project experience with extreme cold-climate sludge management projects.

It is noted that the alternative proposal presented by Mr. Jim Little was prepared by a project team that includes members with direct project experience with extreme cold-climate sludge management and composting projects.

The City's technical analysis of the issues raised by the members of the public, and the alternative options proposed by Mr. Jim Little, are being prepared by a consultant retained by the City to design and implement the waste water treatment plant and sludge management plan, and not by an objective third-party expert witness.

It is hoped that the Board will ascertain:

- Whether the consultant has a vested interest in a specific outcome (i.e. ensuring acceptance of the sludge management plan that the consultant has proposed).
- Whether the consultant can provide a completely impartial review of the alternative option for sludge management presented by Mr. Jim Little. If Mr. Little's alternative proves to minimize the risk of release of sewage sludge and/or sludge run-off to the environment, does this diminish the business opportunities for the consultant with the City of Iqaluit?
- Whether the best possible specialized technical expertise has been applied to the analysis of the sludge management options and their potential impact on environmental and water quality.

4. Current Run-off from Experimental Sludge Bed

The sewage sludge that is currently being generated by the plant is being deposited on a bed of sand which is above grade and not bermed or otherwise contained.

- What will be done to limit contamination of adjacent waters during the spring run-off in 2006?
- Will all of the run-off from the sludge pile be captured by the proposed 'containment' ditches that are to be constructed in the summer of 2006? When will this take effect?
- What is being done to ensure that contaminant levels in run-off from the landfill are not exacerbated during construction of the ditches?
- What will be done to limit contamination of adjacent waters due to run-off from the sludge bed prior to completion of the containment ditches?

The run-off from the sewage sludge bed will eventually be accumulated in the containment ditching for the landfill. Treatment will not occur unless funding becomes available. Based on testimony provided by the City's consultant during the first session of the hearings, the ditches will not contain 100% of the run-off from the landfill.

- The consultant's plan will therefore always result in discharge to the environment of untreated run-off from the sewage sludge.
- How much sewage-sludge leachate will be discharged to the environment?
- What is the risk or likelihood of untreated run-off from the sewage sludge bed being discharged directly to the environment (i.e. if the containment ditches reach capacity before funding for treatment is available)?

5. Enforcement and Monitoring

Based on testimony provided at the first session of the hearing, the City is operating the water treatment plant at full capacity. This means that 100% of the sludge generated from the City's raw sewage is being transported to, and deposited in a land fill that currently does not contain its run-off. Other waste is also now being deposited in the landfill expansion site which is the subject of this hearing.

- Federal regulators were present at the first session of othe hearing and are aware of the circumstances.
- The City does not currently hold a license for disposal of waste into waters.
- Is the current situation in compliance with the NLCA, the Nunavut Waters Act and other legislation relevant to disposal and discharge to the environment?
- Is the "new" discharge (i.e. from the treatment plant and from the sludge bed and expansion site at the landfill) being tested to ascertain if it meets legal requirements? If not, why not? And when will it be?
- If it is being tested, is the discharge meeting applicable regulatory requirements?
- Are the discharges being monitored now? Will they be monitored through the summer?
- If regulatory thresholds are exceeded, will the disposal of sludge in the landfill be allowed to continue?

At the first session of the hearings, DIAND indicated that they would monitor water quality once a year. Based on testimony provided at the first session of the hearing, it was acknowledged that the discharges will not meet 36(3) of the Fisheries Act.

- What is the statistical /scientific rationale justifying the proposal to sample annually rather than more frequently?
- Will the timing of the sampling be completely random or will it target specific times of year?
- Is it standard practice to sample only once per year in cases where discharges are expected to exceed normal regulatory standards?
- Will the sampling be for both the treatment plant discharge as well as for discharge from the landfill?

6. Prior Contamination of Landfill Expansion Area

It is understood that the liability for clean-up of existing contamination at the site is uncertain, and that the City would take responsibility only for cleaning up contamination resulting from expansion of the landfill, and for containing any exposure of old contaminants that their activities in expanding and operating the land fill might cause.

- Has an assessment of the current contamination level at this site been undertaken? What were the results?
- How has the staging of the work been planned to ensure specifically that the construction activities to occur this coming summer (i.e. before containment of landfill run-off) will ensure that old contaminants at the site are not exposed; and if they are, that the problem will be detected and they will be contained?

There is currently no plan or direction on how ultimately the site will be reclaimed/decommissioned. It is not unreasonable to expect that extended legal disputes will ensue regarding responsibility for clean-up once the expansion site is at capacity and in need of decommissioning.

- Conditions at the landfill expansion site will decline (i.e. through creation of sludge beds, disposal of sludge, deposition of municipal waste). However, in 4 years when it is at capacity and in need of decommissioning, clean-up will not occur until liability/responsibility has been ascribed and responsible parties agree upon how to divide costs. This may take years to resolve.
- To prevent this from occurring, an agreement on clean-up responsibility should be reached BEFORE site conditions are permitted to worsen through addition of new waste.

The Board's consideration of these matters is much appreciated.

Sincerely,

Siu-Ling Han