

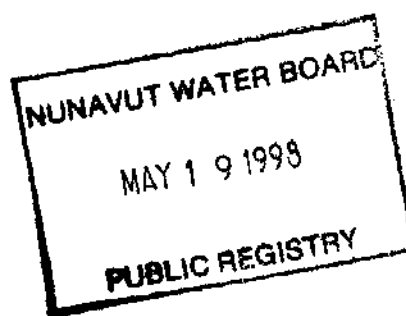


Northwest
Territories Baffin Region

May 6, 1998

By Facsimile: 867-360-6369

Dionne Filiatrault
Technical Advisor
Nunavut Water Board
Gjoa Haven, NT
X0E 1J0



Dear Ms. Filiatrault:

Thank you for your letter of April 27, 1998, concerning the Pangnirtung Sewage Treatment Facility Planning Study. As you note in your letter, Pangnirtung has been in need of a functioning sewage treatment facility for many years and the Government of the Northwest Territories (GNWT) Department of Municipal and Community Affairs (MACA) has been working very closely for several years with the Hamlet to bring this project to fruition.

As I had indicated to you before, the timelines and proposed schedules for this project were very tight and it was essential that comments from the various stakeholders be obtained as soon as was possible. Therefore it is with some concern that we read your letter of April 27, 1998, in which you bring forward a number of comments. We will be initiating a geotechnical study to determine the suitability of locating the sewage lagoon at the Hamlet's granular source and the design required for the berms to resist ice scour and wave action, but it is important to note that this project is still in the planning phase. Therefore, although MACA cannot address all of your concerns at the present time, we trust the information presented below will be sufficient for the Nunavut Water Board to grant tentative approval for this project, with the understanding that all final documentation and reports will be provided to you and that the sewage lagoon option does meet the minimum criteria for sewage treatment.

In response to your comments, we offer the following:

- i. Although the Planning Study would seem to indicate that consultation was not part of the process, rest assured that it was. Over the last several years, MACA, the Hamlet and various consultants have met many times to discuss, in detail, this particular project. Through these meetings, MACA has received feedback from the community and their concerns and desires for the treatment facility. In fact, work had already begun on a sewage lagoon at one particular location, but was halted due to public concern. Approval for this particular sewage lagoon was granted by the Northwest Territories Water Board. Additional studies and tests were undertaken



and as a result, this Planning Study was commissioned. The council advertised and held a public meeting to address any additional concerns that the general public and any community groups may have had about the treatment system and its location as presented in this Planning Study. There was no opposition to this project. We feel that public consultation for this project was quite comprehensive.

- ii. The original scope of the project (dating back several years) did not require the consultant to consider the impacts of a decentralized Nunavut. These impacts will be considered during the final design stage and it is foreseen that they will not have a significant impact on the design.
- iii. The concerns of existing and future land users was not expressed as a major concern or criteria for the Hamlet as they choose the location of the facility. Aesthetic concerns were considered in the process. As there appears to be some concern over impacts on existing and future land use, it will be considered in the selection criteria and design matrix of the final report. Our consultant indicates that inclusion of land use considerations does not alter the design matrix and this will be reflected in a final report to be prepared and forwarded to your office as soon as it is available.
- iv. Environmental considerations are inherent in all aspects of planning, design, construction, operation and decommissioning of a capital asset, including sewage treatment facilities. A general "environmental" criteria is difficult to evaluate and potentially allows for personal biases to enter the decision process. We feel we have addressed the impact of the operation of the facility through considering the treatment levels. If specific "environmental" concerns exist on the part of the Nunavut Water Board, or any other stakeholder, which can be defined and evaluated, the report will be revised to include these criteria in the decision matrix.
- v. The levels of Fecal Coliform will be addressed in the revised report, however MACA is confident that treatment objectives will be met. The concerns regarding the contamination of the clam beds have been mitigated through the location of the sewage lagoon.
- vi. The design of a sewage treatment facility for a 40-year planning horizon would be cost prohibitive. The community needs both an immediate solution to their sewage disposal problem and a sustainable plan for the future. It is our hope that the technology, cost and reliability of other sewage treatment methods will be more attainable (and sustainable) for this community twenty years from now. Therefore, a 20-year planning horizon is appropriate for this community for consideration of sewage treatment options. Currently, there is little choice as to the location of a sewage lagoon considering the size and location of the community.
- vii. Good engineering practice ensures that a failure does not occur under normal operating conditions. As recommended in the planning study, the next phase of the project involves the study of the (geotechnical and structural) feasibility of locating the sewage lagoon on the tidal flats. The results of these studies may potentially

have an effect on the costs and even the treatment method. The studies will be initiated upon tentative approval of the Nunavut Water Board and will be provided to you upon completion. It is hoped that the positive outcome of these studies will allow the Nunavut Water Board to give final approval to the project, such that construction can start in a timely fashion.

- viii. The lagoons' geometry was determined based on the maximum depth allowable in order for a sewage lagoon to operate properly. Additional depth (and thus less area) will adversely affect the level of treatment, and possibly prevent the lagoon from obtaining the required treatment levels. Therefore, the geometry of the proposed lagoon will essentially remain unchanged. Final design will determine the exact geometry of the lagoons.
- ix. As indicated above, the next phase of the project is to study the tidal flats for their suitability for the construction of a sewage lagoon. The study can proceed once we obtain tentative approval from the Nunavut Water Board. The study will be funded by MACA.
- x. It is premature to develop an abandonment (decommissioning) plan at the planning or even design stage of this particular project as an abandonment plan would have to meet the guidelines and restrictions imposed by the regulatory agencies at that time (presumably 20 years from now). Furthermore, the capacity of the sewage lagoon, considering any new technologies in the next 20 years, may permit it to be used beyond its design life.
- xi. Both the opportunities and constraints associated with the operation of a mechanical sewage treatment plant will be incorporated into the planning study to ensure that the community understands both.
- xii. As per (xi) above, the various opportunities for the training and development of personnel required for the efficient operation of a mechanical sewage treatment plant will be incorporated into the study. It is foreseen that even with potential positive opportunities, the decision matrix will remain unchanged.
- xiii. It is recognized that residual heat from the generating station could possibly be used as a inexpensive source of heat for a mechanical sewage treatment plant building. As any treatment plant would consist of a building housing a large tank of water which has a high latent heat compared to the air, it would take an enormous amount of energy to change the temperature of the building from that of the influent, thus the potential savings in using residual heat from the generating station are considered minimal. Furthermore, these potential savings are minimal compared to the overall energy costs for the operation and maintenance of the mechanical plant. Nevertheless, your comments will be incorporated into the study, but again, no impact on the decision matrix is expected.

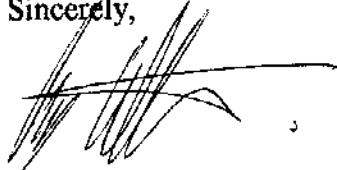
- xiv. The transfer of infrastructure to the communities is an on-going process for the GNWT and is expected to continue under the Government of Nunavut. Once the sewage disposal facility (or any other facility or asset) has been constructed, it will be transferred to the Hamlet for their continued on-going maintenance and operation. As was done in the past, the Hamlet and every other community, in cooperation with the GNWT (and in the future, the Government of Nunavut) will continue to identify 5-year capital needs and a 20-year capital forecast. Therefore, MACA feels that the Nunavut Water Board concern over the availability of funding for Phase 2 of the lagoon option is not warranted. The Phase 2 capital requirements for the sewage lagoon (provided this is the option constructed) will be added to the 20-year capital forecast and will appear on the 5-year capital plan when appropriate.
- xv. The reliability of a mechanical system is not only related to power failures, but is also dependant on the mechanical plant. If a critical piece of the mechanical plant were to fail, depending on the availability of replacement parts (requiring an on-going inventory of replacement parts – an increased capital and on-going operation and maintenance cost), a direct discharge of sewage could occur, and potentially continue until the problem could be rectified. You note that the simple provision of a generator mitigates against a power failure. The point that the consultant was trying to make was that mechanical plants will discharge directly to the fiord if the system fails for any reason. This will be clarified in the study.
- xvi. We are committed to effective and constructive consultation with all regulatory authorities and this will form an on-going component of this project and all issues will be addressed with the various stakeholders as they arise. Normally, we would await final design before seeking approval from the various stakeholders, however, due to the critical timelines associated with this project, it was hoped the tentative approval for the project could be obtained, prior to final design. It was our understanding, that by submitting this planning study to the Nunavut Water Board (and hence the regulatory agencies involved), comments from the Department of Fisheries and Oceans and others, would have been incorporated into your reply to us. Could you please clarify your role such that proper consultation with various regulatory agencies is accomplished. If MACA has to undertake this consultation process with each and every regulatory agency itself, we would like to know as soon as possible as this could possibly delay the implementation of the project.

Lastly, you inquired about the project proponents, to whom to license should be issued and other jurisdictional and financial issues. As indicated above, upon construction of the facility, it will become the property of the Hamlet, thus we foresee that the license should be issued to the Hamlet of Pangnirtung. We are under the impression that for the construction duration, an additional license will not be required. The GNWT Department of Public Works and Services (PWS) acts as the project officer for MACA: essentially MACA is the Client. As for financial responsibilities, as mentioned above, MACA (and the Government of Nunavut equivalent) will continue providing technical and financial support to the communities through the capital planning process.

We sincerely hope that we have addressed your concerns and look forward to your positive response in the form of tentative approval for this project. As indicated at the beginning of this letter, the timelines and schedules for this project are extremely tight and any further delay may be to the detriment of the project implementation schedule. It is understood that upon receiving the tentative approval, all additional studies will be initiated and results provided to the Nunavut Water Board for your final approval.

I will be out of the office until Tuesday, May 19, 1998. Should you have any immediate questions or concerns, please do not hesitate to contact my colleague, Mr. Doug Sitland, Municipal Planning Engineer, at 867-979-5020.

Sincerely,



Sc/ Tanya Smith, P.Eng.
Capital Programs Officer
Municipal and Community Affairs

cc: Joanasie Maniapik, Hamlet of Pangnirtung
P. Smith, Indian and Northern Affairs Canada
K. Chang-Kue, Department of Fisheries and Oceans