P.A. Cape Dorset Sewage P3.

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Nunalingni Kavamatkunillu Pivikhaqautikkut
Department of Community and Government Services
Ministère des Services communautaires et gouvernementaux

WITHOUT PREJUDICE

Hand Delivered

June 1, 2004

Environment Canada
Environmental Protection Branch
Prairie and Northern Region
Iqaluit District Office
P.O. Box 1870
Iqaluit, Nunavut
X0A 0H0

Attention: Mr. Sid Bruinsma

Dear Mr. Bruinsma:

The Department of Community and Government Services (formerly Community Government and Transportation – CGT)) and the Hamlet of Cape Dorset were issued an Inspector's Direction on March 25, 2002 in relation to the sewage treatment system in the community. Thus far, CGS (or our Consultant) has provided five responses/updates as follows:

- May 7, 2002 – Initial Response – Outlines immediate action and long term solution
- August 28, 2002 (from Consultant) – Outlines technical issues and levels of treatment
- September 27, 2002 – Progress on repair work in the 2002 construction season
- March 6, 2003 – Intention to proceed with design in Spring 2003
- October 1, 2003 – Update on planning with the Municipality

We are now in receipt of another Inspector's Direction dated May 13, 2004 with respect to the sewage treatment system. In response to that Inspector's Direction, CGS and the Hamlet of Cape Dorset provide this joint response.

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Actions Taken in the Last Two Years

- Berm at the far end of the "old lagoon" was elevated with extra fill in order to control seepage.
- Three 3-foot high berms were placed on the downslope side of the "old lagoon" to aid in filtration/retention
- The side and end berms of Cell 1 of the "new lagoon" were elevated with extra fill
- Culvert in Cell 1 of the "new lagoon" was moved to prevent runoff to the main road
- The capacity of Cell 2 of the "new lagoon" was increased with additions to the berms on the sides and ends
- A side wall of Cell 3 of the "new lagoon" was repaired and capacity increased
- Ditching was undertaken near the side of the mountain to divert runoff
- Ditching was undertaken on the town side of Cell 3 of the "new lagoon" to divert runoff

Therefore, both the Government of Nunavut and the Hamlet of Cape Dorset take exception to your assertion that "…reasonable measures…have not been taken by the Territorial Government of Nunavut and the Hamlet of Cape Dorset…". That being said, in the interests of fostering positive and productive relations with our federal partners and in the interests of providing adequate sewage treatment systems for all communities, the following additional immediate actions have been taken:

- The ditch above Cell 1 of the "new lagoon" will be cleared of snow to allow runoff to by-pass Cell 1
- The culverts in Cells 1,2 and 3 will be cleared of snow and ice to permit flow as intended
- The single culvert in Cell 2 has been replaced with 2 culverts to encourage positive drainage
- The ditch (and associated culverts) that extends from the dumpsite down past Cell 3 of the "new lagoon" will be cleared of snow and ice so as to encourage positive drainage and prevent flow across the road and into either Cells 2 and 3.

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- o Public Service Announcements on local radio alerting residents of the issue and asking them to conserve water

As of June 1, 2004, the Hamlet has completed these tasks as best they can, within reason.

Over the summer of 2004, the following "intermediate" term actions will be taken.

- o Examine options to increase the capacity of the existing 3-Cell "new lagoon"
- o Examine options to increase the capacity of the "old lagoon"
- o Continue with Public Service Announcements and ask residents to conserve water in an effort to lessen the demand on the existing sewage treatment systems
- o Review operations and maintenance practices to ensure they are updated.

Details on a PRELIMINARY plan to increase the capacity of the existing systems is included for your review. CGS intends to examine in more detail the feasibility of undertaking these works, obtaining permission from the Nunavut Water Board (and relevant stakeholders) and implementing the works in the summer of 2004.

In addition, the following long term actions are proposed for the summer of 2004 and future years.

- o As the community preference of "P Lake" is known to have fish, CGS could not move forward as intended over the winter of 2003/04. CGS will initiate fish and bird habitat studies to ensure that the use of "P Lake" and the associated wetland is acceptable to all stakeholders
- o CGS will initiate planning and pre-design to estimate the level of treatment that will be obtained with the proposed "P Lake" solution and ensure it is acceptable to all stakeholders
- o Pending the successful approval of the "P-Lake" option, CGS will undertake design so that the works can be publicly tendered for the summer of 2005.

It should be noted that the construction of the lagoon system and associated civil works at the "P Lake" site is a minimum 2 construction season job and the earliest that a system could be commissioned is the fall of 2006.

In the event that "P Lake" is not approved, CGS together with the Hamlet will examine other sustainable options for waste water treatment.

As you are no doubt aware, the Federal Department of the Environment recently provided information with respect to wastewater effluent quality guidelines for the City of Iqaluit. While there is no assertion that these guidelines would apply to other communities, it is worth noting that these parameters will be extremely difficult to attain through traditional sewage treatment options and may require the adoption of mechanical treatment systems. As you can imagine, the capital and operations and maintenance costs of these systems is often higher than traditional systems and the skilled work force to operate these systems is not resident in Nunavut. Forcing advanced infrastructure on small, isolated, northern communities with no tax base to generate revenues to offset operations and maintenance costs is a luxury that neither the Government of Nunavut can afford and by extension, nor our Federal partners.

I trust that this response satisfies your needs as outlined in the Inspector's Direction and that no further action will be taken against either the Hamlet of Cape Dorset or the Government of Nunavut. We will continue to involve Environment Canada, and indeed all relevant stakeholders as the planning, design and construction of the Cape Dorset sewage system evolves.

Sincerely,

Tom Rich
Deputy Minister

Art Stewart
Senior Administrative Officer

Cc Doug Sitland, Ddirector Capital Planning
Linda Tingley, Legal Counsel
Timoon Toonoo, Regional Director Baffin Region
Bruce Trotter, Senior Environmental Health Officer

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3-Cell system

The current configuration for the Cell 1 only allows for a friction of the potential capacity of be utilized. CGS in conjunction with the Hamlet, propose that another berm be constructed at the mid-point of Cell 1. Basically creating two cells form Cell 1. Figure 1 (attached) shows the approximate location of the proposed berms and the resulting cells.

Figure 2 shows what the new approximate volumes of the two cells will be as compare to the original cell. It is expected that the two new cells will have an increased capacity of be 45%. There may also be the opportunity to further expand the capacity of Cell through excavation. As preparations for the construction of the new berm commence, test pits will be excavated along the cell bottom to determine if is possible to further excavate the cell to create additional capacity.

It is important to note that neither CGS nor the Hamlet have all physical properties of the existing 3-cell system. For example, the actual slope of the bottom of Cell 1 has been approximated based on current site conditions. After Cell 1 is decanted this summer, final dimensions can obtained to verify the proposed work.

As witnessed this past winter, the wastewater would freeze before it was able to enter Cell 3 and therefore remained empty. There is currently a rough road that allows excess to Cell 2 & 3, but there is not a suitable working area for the sewer trucks to turn around and discharge. CGS and the Hamlet will examine any potential to increase the workability of this access area such that it would be safe for the operators to discharge their sewer trucks into Cell 2/3.

Old Honey Bucket Lagoon.

When the Hamlet was no longer able to discharge into the 3-cell system, they started to use the old sewage lagoon. The Hamlet placed additional fill along the roadside of the lagoon in hopes of increasing the capacity of the lagoon. Unfortunately, the volume seepage under the roadway kept the water level constant in the lagoon.

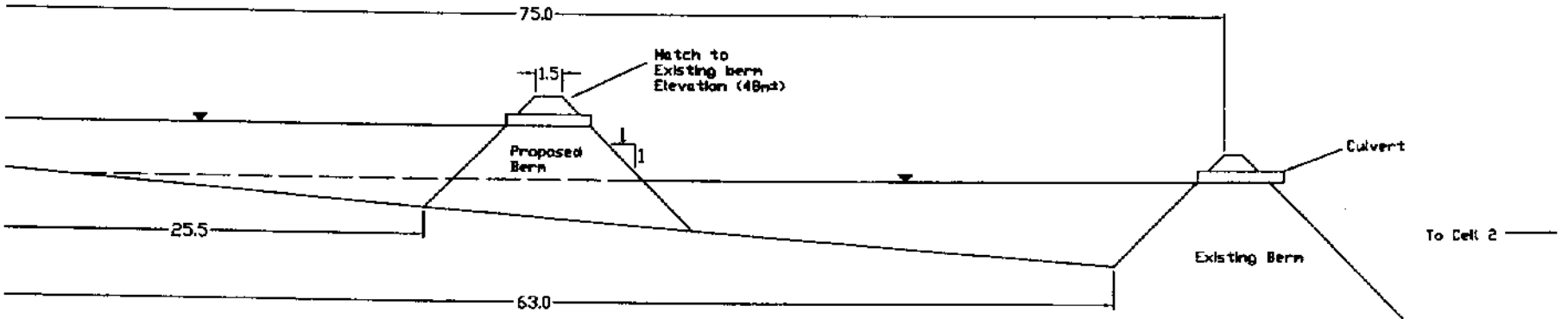
CGS & the Hamlet will examine the potential to increase the road height as a means to increase lagoon capacity. In order to accomplish this, the surrounding bedrock will have to be examined to determine the degree of fracturing to assess the potential for bypassing. Also, the existing roadway would have to be removed and a material placed in order to stem the seepage. The current road profile would allow CGS & the Hamlet to significantly increase the elevation of road surface. In essences, it would be proposed that we would use the road as a berm.

Another option that will be explored will be expanding the capacity through excavation. This lagoon will have to be decanted before work could be started, once it was decanted, test pits would be dug to determine if there was any potential to expand the lagoon through additional excavation.

It is important to acknowledge that the completion or success of all proposed works will be determined by:

1. Operator safety
2. Availability of resources (i.e. suitable granular material, equipment, etc.)
3. Regulatory Approvals
4. Suitability of on-site conditions

All efforts will be made to carry out the described work, however there may circumstances (as listed above) that may limit or change the scope of work proposed. CGS and the Hamlet will ensure that open dialogue is maintained between all stakeholders such that any issues arise that require changes to the proposed work can be addressed in a reasonable amount of time.



ge Assessment

al Volume	2484 m^3 ±
ge loss	(756.00) m^3 ±
ge Gained	1883 m^3 ±
Volume	3611 m^3 ±

Overall gain in capacity of 45 %.

Note:
The volume calculations use approx. data related to the slope of Cell 1. Final volume calculations will have to be determine on-site after decanting.

Further capacity could be realized after completing test pits in the bottom of Cell 1 to explore the potential to expand capacity through excavation.

Figure 2. Proposed Berm Configuration for Cell 1

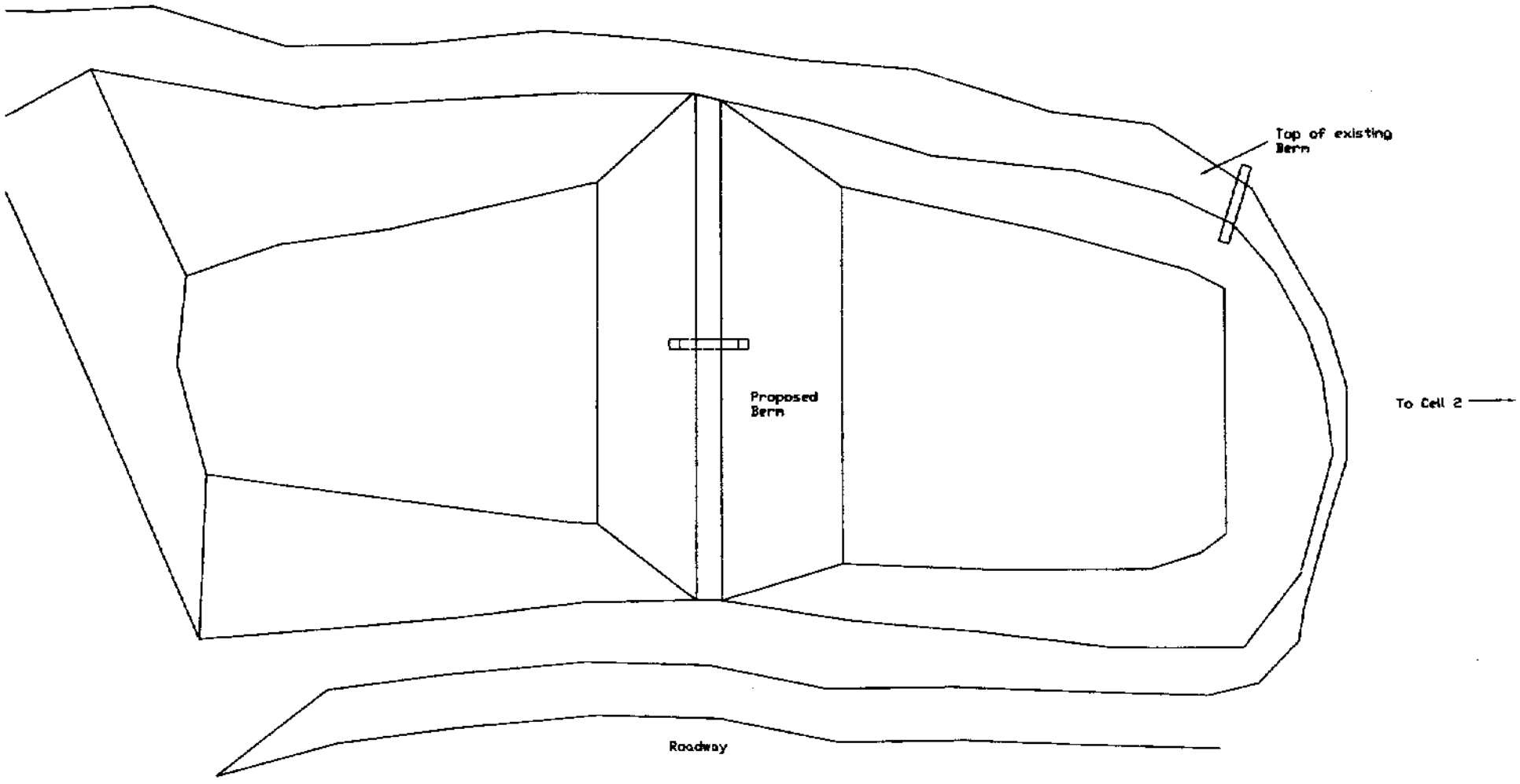


Figure 1. Proposed Layout for Expansion of Cell 1