

Subject: FW: Clyde River Renewal 3BM-CLY0308

From: Wilson, Anne [Yel] [mailto:Anne.Wilson@EC.GC.CA]
Sent: Friday, January 16, 2009 1:10 PM
To: dts@nunavutwaterboard.org
Cc: Ogilvie, Carey [Yel]; Ruiu, Cristina [Reg]; Fitzgerald, Jane [Yel]; Broome, Craig [Yel]; Challen-Urbanc, Jane [Burlington]
Subject: RE: Clyde River Renewal 3BM-CLY0308

Hi Dave,

Nice to talk with you this morning, and thanks for the opportunity to provide some further thoughts on this renewal, following on Jane's letter dated January 6th, 2009.

1. EC does not support the use of the wetlands as the only compliance point; rather, the wetlands outflow quality should be monitored and the results used to manage the discharge for optimum treatment/uptake. Trow has made the point that there is control over flow into the wetland, and that equates to control over what flows out of the wetland. This would only be an acceptable argument if there was "real time" data available for effluent quality; given the time lapse for results we feel the further "upstream" the compliance point, the better, in order to try and minimize the potential for release of poor quality effluent to Patricia Bay.
2. I note that the term of the licence is proposed to be 4 years. By the time this licence is up for renewal again, there should be more information available on both the potential range of performance standards which could be expected to apply to Northern facilities, and perhaps on optimizing treatment of such facilities. With this in mind, EC is not averse to using the 1992 Guidelines levels to set discharge criteria at the lagoon for the duration of this licence. To address the appropriate value to be used, the Hamlet should investigate using the system to hold sewage in one cell while a longer decant is done from the second cell which takes advantage of the growing season without overwhelming the wetlands vegetation. If the shorter decant is used, then lower limits would be appropriate, with some allowance made for the polishing by the wetlands.
3. With respect to the use of acute toxicity testing for small municipalities, we agree with Trow that there will not be a requirement under the Canada-wide Strategy for the municipality to conduct toxicity testing, unless there are industrial inputs to the system. Removing this requirement from the licence would be acceptable. However, it should be noted that the *Fisheries Act* Section 36(3) requirements still stand, should EC have reason to sample the effluent to assess deleteriousness. In practical terms, over the implementation period for *Fisheries Act* regulations in connection with the Strategy, acute toxicity testing could be done as part of the risk assessment and monitoring efforts, if logistical constraints can be dealt with, but would not be a regulated parameter. Chronic testing would not be used.

As you noted, there are a number of other municipal licences coming due, and I'm sure there will be further discussions on these aspects for each site. For Kimmirut, as noted in our comment letter from January 2007 there wasn't enough information to assess discharge criteria. Is there further information available now? A key question would be the presence/absence of fish in the downstream lake.

Thanks, and have a great weekend!
 Anne

From: David Hohnstein [mailto:dts@nunavutwaterboard.org]
Sent: Tuesday, January 13, 2009 1:06 PM
To: Wilson, Anne [Yel]
Subject: Clyde River Renewal 3BM-CLY0308
Importance: High

Hi Anne,

Busy, busy? Going to toss something more your way...

We received a submission from the GN (on TROW letterhead) in response to the renewal application request for review, on some of the conditions that were issued with the Clyde River Amendment, approved by the Board. I would appreciate your input and advice on the points made by TROW and the application to the Clyde River sewage treatment and effluent release. This letter came in as a submission under the renewal application, so it is being treated as such, however given the content and the impact with respect to the previous amendment that was issued, Dionne and I thought it best to forward the information and see if EC could provide some comment.

I tried going back through some of the previous licences, Cape Dorset for one, to see if there may have been a good example of where to regulate and where to provide monitoring for future consideration, however I could not seem to find what I was looking for and what I thought should be on file. Here are the three points brought up by TROW in their letter of January 8, 2009 for your consideration. I've also included the letter as well as the licence amendment that was issued recently.

- 1) Final point of discharge; the applicant has argued that a "final discharge point" can only be at one location for a single effluent and therefore there should only be one set of discharge criteria for that effluent; it is also argued that the operator has control over the effluent from the lagoon and ultimately the quality of effluent from the wetland, therefore the final discharge point should be at the wetland (would this require a single point discharge?) and is requesting that the compliance point at the lagoon be removed;
- 2) The second issue raised is that of the effluent limits imposed on the licensee; the limits incorporated into the licence amendment were (mistakenly) taken from the application as the proposed limits, and not as clarified in the letter, as the projected treatment levels, providing an "order of magnitude" safety over the current licence effluent quality limits. Based on the Guidelines (1992), the Licensee has indicated that levels of treatment of 120/180 BOD/TSS should remain and that the treatment system proposed would more than meet these requirements at the wetland discharge point. These criteria, based on the Guidelines, however are on an effluent discharge of <600 lcd. The application has indicated that effluent release would be over a period extending from Mid-August to Mid-September, a roughly 30 day period. Based on the projected volume of effluent, release would have to take place over a period greater than 60 days in order to stay below the 600 lcd (2006 population of 820). If release were to be over less than 60 days, then the effluent quality that should be attained would be 80/70 BOD/TSS, according to the Guidelines;

It appears as though the projected effluent quality (97/116) from the lagoon would meet the 120/180 guideline, is this adequate, given the projected downstream treatment with the wetland? Is there a need to impose effluent criteria on the wetland effluent, or simply maintain the monitoring to provide treatment data from the wetland? Or would imposing effluent criteria on the wetland be more effective and provide a greater comfort level for the receiving water, keeping in mind that there is no real operator control on the wetland release?

- 3) The third issue raised is that with toxicity testing; my understanding of the applicable section of the Fisheries Act is that it is not dependent on the "size" of the facility, but is focused on effluent quality and its toxicity. Possibly the requirement for Chronic toxicity testing would not be necessary, however acute toxicity testing would be? The NWB has, for some of the smaller communities and their licences, omitted the requirement from the licence, but referred to the need to comply with the fisheries Act and any other applicable legislation as part of the decision. What is EC's position on requiring the toxicity testing, and is that something that should be a part of the licence or carried out as part of the O&M to ensure meeting that requirement of the FA? This is one item that may automatically put the Licensee into non-compliance due to the lack of qualified personnel for carrying out the sampling, as well as the lack of flights to get the sample(s) to a lab within the specified period.

Any thoughts on the above? Any input you may be able to provide will no doubt be able to be applied with other municipal files the NWB currently has on the table. These include, currently the Kimmirut renewal/amendment and Arctic Bay amendment, further off are Kugluktuk and Igloolik.

With respect to the Kimmirut renewal/amendment which the NWB is finalizing for issuance, any decision on the Clyde River renewal will have a direct affect on the Kimmirut decision as there are some of the same issues with utilizing a lagoon system followed by the wetland treatment. With Kimmirut however, the projected water quality from the lagoon system does not meet the 120/180 that everyone seems to have adopted, and further, the effluent from the wetland would be entering into a lake (not known if fish bearing) followed by a stream channel to the coastline. In previous comments submitted, EC recommended maintaining previous licence limits for the Lagoon system (if the treatment system was not to include the wetland). If the treatment system does not include the wetland for regulatory purposes, would that conclude then that the discharge is to a "Lake", following the wetland, and would the more stringent effluent limits apply (30/30), if not, would the 80/70 apply given that the effluent discharge would most likely be above the 600 lcp (and hard to determine as there would be most likely ice-sheet melting taking place which is uncontrolled). The design brief has indicated over 975m³/day in June, lowering to 475m³/day into September. With a population of less than 500, the flows would easily exceed the 600 lcp.

Thank you very much for your attention to this issue, hopefully you will be able to get back to me on this shortly. If you would like, feel free to give me a call at my Edmonton office number, 780.443.4406.

Dave



David Hohnstein, C.E.T.,
A/Director Technical Services

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