



P.O. Box 119
GJOA HAVEN, NU X0B 1J0
TEL: (867) 360-6338
FAX: (867) 360-6369

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File: 3AM-IQA0611

August 19, 2009

Paul Clow
Project Officer, Engineering Department
City of Iqaluit
Box 460
Iqaluit, NU X0A 0H0
Email: p.clow@city.iqaluit.nu.ca

Subject: Proposal for a Secondary Wastewater Treatment Pilot Project, under Water Licence 3AM-IQA0611

Dear Mr. Clow,

The Nunavut Water Board (NWB) received the above-cited proposal for a Waste Water Treatment Pilot Project, under Water Licence 3AM-IQA0611 for the City of Iqaluit. In follow-up to a request for additional information by the Manager of Licensing, supplemental information on the project and specifications of the treatment process to be evaluated was received by the NWB on August 10, 2009.

The operating conditions with respect to the Pilot Project have been reviewed by the NWB technical staff and determined to generally fall within the terms and conditions of the current licence, with the understanding that there is no additional water use requirements beyond what is authorized under the Licence and that there is no direct deposit of waste resulting from the project.

It is the understanding of the NWB that the treatment system to be used is a Kodiak unit provided by BIONEST and will be contained in building similar to metal shipping Sea-Container. Comments provided by the NWB are based on the email submitted by yourself on August 10, 2009, addressed to the attention of Ms. Phyllis Beaulieu, Manager of Licensing, along with attached specifications that included pages 7, 9, 10, 11, 12, 13 and 14 of the project proposal.

The wastewater to be processed through the Kodiak system for the first six months of pilot operation will be obtained from the effluent discharge of the Salsnes filter (current Wastewater Treatment Plant -WWTP discharge) at a rate between approximately 6,000 and 36,000 Lpd. At 6,000 Lpd, the treatment efficiency is expected to surpass the effluent design objective of 20 mg/L five day Carbonaceous Biochemical Oxygen Demand (cBOD₅) and 20mg/L Total Suspended Solids (TSS). At 36,000 Lpd the treatment is expected to meet the Effluent Criteria of 45/45 mg/L cBOD₅ and TSS. Discharge from the Kodiak unit will be directed back to the raw sewage tank.

For the second six month period of pilot operation, wastewater from the raw sewage tank will be pumped to the Kodiak system with effluent again being discharged to the raw sewage tank (inflow to the current

facility). Some adjustments to the location of the Kodiak discharge may be necessary to avoid where possible, recirculation of treated wastewater by the pilot system in both circumstances.

Comments on the information provided for review are as follows:

- Page 7 of 20, Table 1, identifies the Effluent Criteria as being 45/45 mg/L cBOD₅/TSS, whereas the Licence, Part E, Item 3(b) indicates that the Maximum Average Concentration shall not exceed 30/30 mg/L BOD₅/TSS. Item 4 indicates that effluent would be pumped back to the City's outfall. Effluent from the Kodiak unit is expected to be of better quality than that being discharged from the current WWTP, however the proposal has ensured that any effluent produced would be pumped back to the raw sewage tank of the current treatment system as any effluent discharge from the Kodiak system would be outside the scope of the current water licence.
- The effluent from the Kodiak would be directed to the influent of the current WWTP, rather than as on Page 10 of 20, where it indicates on point 11, that the effluent would be sent to the current WWTP outfall;
- Page 11 of 20, item 4 indicates the "bed" to be prepared for the Kodiak unit, where it has been discussed that an impermeable liner will be used in addition to the bed to provide for containment of any spills during the project;
- Additions to the Licence Spill Contingency Plan (or addendum) are to be provided to the NWB at least thirty (30) days prior to commissioning the Pilot Project. This addendum would provide details on spill prevention and response with respect to the Kodiak system, addressing spills associated with system malfunctions, piping failures and other related concerns.
- The NWB requests that, as per Schedule B, Item 1(p) of Licence No. 3AM-IQA0611, the Licensee submit a report to the Board for review, within sixty (60) days of completing the first six month phase of the pilot program and again following the second six month phase, providing details on the wastewater treatment pilot project, operation success/concerns and the treatment objectives achieved.

The NWB supports the efforts being made to determine treatment options for the City of Iqaluit and moving towards full compliance with applicable Licence terms and conditions. If there is any change to the Pilot Project as proposed above, notice should be provided to the NWB as additional review and consideration may be necessary.

Should you have any questions regarding the above, please do not hesitate to contact the undersigned at (780) 443-4406.

Yours truly,

Original signed by:

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

Cc: Qikiqtani Dist.