NUNAMI

JACQUES WHITFORD LIMITED

Project No.: 1015263

January 31, 2007

Mr. Joe Murdock
Director of Technical Services
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU
X0B 1J0

Dear Mr. Murdock:

Re: Baker Lake Water License Application Action Plan

In follow-up to the Action Plan sent on October 26, 2006 to Ms. Sarah Gagne, formerly of the Nunavut Water Board (NWB), please find the initial information to be provided by January 31, 2007. Much of the information requested is contained within the Nunami Jacques Whitford Interim Report on the Environmental Study and Evaluation of the Water and Sewage System at Baker Lake, NU which is attached. Also attached please find additional information excerpted from Dillon Consulting Limited's Water Pumphouse and Intake System Upgrades - Baker Lake, NU.

As indicated in the Action Plan, further information will be forthcoming later in the year. I trust you will find this information useful. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,
NUNAMI JACQUES WHITFORD

Nick Lawson, B.Sc.
Operations

c: Mr. Wayne Thistle, Project Officer, CGS Kivalliq Region
Brian Purdy, A/Regional Manager, Projects, CGS, Kivalliq Region

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Additional Information Items for the Hamlet of Baker Lake's Water Licence Action Plan Response to the Nunavut Water Board.

Material has been excerpted from the draft report "***Water Pump/house and Intake System Upgrades -Baker Lake Nunavut***" by Dillon Consulting for CGS, Kivalliq Region, NU

Item # i – Description of Water Intake and Distribution System

The general system description is shown in Section 2.1. There are four main components of the systems, namely;

- Permanent Intake from Baker Lake;
- Two (2) Intake Pumps;
- Four (4) 3410 L Storage Tanks;
- Two (2) Chemical Metering Pumps;
- Twp (2) Truckfill Pumps; and
- One (1) Circulating Pump to the Nursing Station.

Intake System

Two (2) 5 HP pumps, which provide approximately 1079 Lpm, draw the Community potable water from Baker Lake up to the pump house. One pump operates as duty and the other as stand-by. The intake system was originally designed so that intake pumps discharge the water to storage tanks; however, the storage tanks are currently by-passed such that the intake pumps discharge directly to the water trucks.

The existing intake line is a 100 mm line. The intake water line is heat traced to protect the piping against freezing.

Water Storage System

The intake system was originally designed to directly fill the four 3410 L storage tanks with chlorinated water. Storage was designed to serve two purposes: (1) storage of water for emergency usage and (2) contact time for proper chlorine disinfection. The storage tanks are currently not filled via the intake pumps; upon completion of a truck fill, a solenoid valve empties the contents of the truckfill arm to one of the storage tanks.

Chlorination Systems

Calcium Hypochlorite Solution

The Baker Lake pumphouse currently utilizes a solution of calcium hypochlorite as a disinfectant. A 1% solution is made by adding 2300 mL of dry chemical to 20 L of water in a mixing tank. The mixing tank feeds into a day tank from which the 1% solution is pumped into the process.

Chemical Feed Pumps

The pumphouse contains two (2) LMI Milton Roy Series C Electronic Metering Pumps, C72 1 361 SI. The pumps are rated at a maximum capacity of 15.1 l/hr and 100 psi injection pressure. The chlorination system was originally designed to complete calcium hypochlorite injection (1) prior to the storage tanks to a point of obtaining a free available chlorine (FAC) residual and (2) between the storage tanks and water truck to meet the regulated level FAC = 0.2 mg/L after 20 minutes of contact time.

During the August 2006 inspection, it was noted that only the truckfill line was being injected with calcium hypochlorite. CGS has shut off the water line to the nursing station (fed from the storage tanks) so all water delivery in the community is currently by truck.

Piped Distribution

The pumphouse design contains a constantly circulating pipe distribution system, running from the storage tanks to the Nursing Station. This system was abandoned in September 2006.

Item # ii

A drawing indicating the location of the pump-house in the community and a floorplan for the pump-house are appended.

Item # v

Information pending

Item # vi

See Item # I, above for description.