Technical Summary of the Water Licensed Facilities of the Hamlet of Sanikiluaq

Prepared By: Bhabesh Roy, M.A.Sc., P.Eng. MPE, GN-CGS; e-mail: broy@gov.nu.ca

The Hamlet of Sanikiluaq is a small Community of Nunavut and located at $56^0$32'N and $79^0$14'W on the North end of Flaherty Island, a large central island off the Belcher Islands in Hudson Bay. The population in 2014 is only 856.

The Community is serviced by trucked water, sewage and garbage. The Potable water source is Sanikiluaq Lake situated very close to the Community. Wastewater is treated by a Sewage Lagoon located about 2.9km away from the Community. Again, the Community Solid waste facility consists of metal waste and landfill is located just north of the sewage lagoon. The Water licence #3BM-SAN 1214 covers Water supply, Sewage Lagoon and Waste management facility.

Water Supply: The Community potable water source is located near the center of the Community. The hydrology of this lake is unknown. CGS along with Hamlet is planning to conduct a hydrology study of this lake the summer of 2014. From this study, water balance information will be available. This is a natural lake. Surface runoff due to snow melt and rainfall are the main sources of raw water coming into the lake. The capacity of the lake is unknown until the hydrology study is complete. The water permit of the Water Licence is 40,000 cubic meters per annum. The water truck fill station (WTFS) has been optimized with three stage filtration system using 20 micron, 5 micron and 1 micron filters. Chlorination is the only method of water disinfection process. 20 minutes contact time is maintained from the last drop prior to the first delivery as advised by the Chief Medical officer, GN-DOH. An O&M manual along with the as built drawings are available of this facility. This is an engineered facility.

Sewage Lagoon: The Sewage lagoon is a natural ditch and used for storing the annual wastewater produced in the Community. This is a non -engineered facility located about 2.9Km away from the Community. The approximate capacity is estimated about 19,360 cubic meters. This facility is accessible by an access road connected with the Hamlet. No Engineered O&M manual and as built drawings are available. However, an O&M manual in generic format is available to operate and manage this facility. In summer, this lagoon overflows into wetland. The effluent is being treated in the wetland in certain

degree prior to meeting with the receiving body (Hudson Bay) which is about 2km away from the lagoon.

The new lagoon is in the preliminary design phase.

Solid waste Facility: This is a non-engineered facility and partially fenced. This facility accommodates domestic wastes and metal wastes. The domestic wastes are burned twice weekly and the landfill is compacted and covered with sandy soil on a yearly basis. The metal waste site is left unattended. Some degrees of segregation took place.

A document for segregation, storage and transportation of Hazardous waste has recently been made available for the community to follow.

Monitoring signs were installed at the sewage lagoon effluent and leachate sampling locations and Hamlet started monitoring the water quality three/ four times in summer to satisfy the requirements of the Water licence.