

Executive Summary

Atmospheric Services, Environment Canada “STUDY OF THE WASTEWATER AND WATER SUPPLY SYSTEMS AT THE EUREKA WEATHER STATION”

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In accordance with the NWB Licence # NWB4EUR9904, Part C, Item 6 and Part D, Item 8, Environment Canada commissioned a study of the Eureka Weather Station Wastewater and Water Supply Systems.

A field investigation of the water supply and wastewater disposal systems was conducted during July 1999. The objective of the investigations was to evaluate the public health and impact and impact of the systems. Design issues for water treatment and wastewater disposal were also examined. According to Environment Canada, the required water quality levels are being met with the use of the current method, which includes the diversion of raw water from the stream during the brief break-up period.

The raw water impoundment appears to have been used to its capacity during the past few years during the construction of the Canadian Forces facility at the airport. Environment Canada proposes to increase water availability during the winter period by reducing ice thickness through surface insulation by snow (use of snow fences) and possibly waste heat discharge into the impoundment.

Environment Canada plans to supply treated water to facilities for public health protection purposes. Water conservation equipment on all faucets, showers and toilets in the station should help to reduce the total water usage.

The use of an infiltration membrane water system is planned for water treatment due to its easy operation and maintenance. Environment Canada proposes to clean and use water storage tanks on site for the storage of treated water.

Environment Canada emphasises that the wastewater lagoon effluent is of higher quality than required by the Nunavut Water Board. They also mention that the water quality could be improved by adding a primary cell at the front end and removing sludge from the existing storage cell. Higher quality effluents would require the addition of a mechanical wastewater treatment unit such as a rotating biological contactor. Routine maintenance and repairs would be required for such a unit.

For additional information or clarification, please contact the head office.