



## **NIRB Application for Screening #125499**

### **Renewal and Amendment of the Resolute Bay Utilidoy System Water Licence #3 BM-RUT 1520 Type A for Ten (10) yrs. term**

**Application Type:** New

**Project Type:** Infrastructure

**Application Date:** 1/13/2020 11:39:30 AM

**Period of operation:** from 0001-01-01 to 0001-01-01

**Proposed Authorization:** from 0001-01-01 to 0001-01-01

**Project Proponent:** Department of Community and Government Services, Bhabesh Roy  
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## DETAILS

### Non-technical project proposal description

English: Executive Summary of the Hamlet of Resolute Bay Water Licence # 3BM-RUT 1520. The Hamlet of Resolute Bay is located on the south coast of Cornwallis Island on the Perry Channel at 74043'01N and 94058'10"W. The current population of the town is 279 (2019). During summer, the town population is increased to about 800 due the presence of the Military. There are (3) three water licenses in the community. The Government of Nunavut Community and Government Services (GN-CGS) is the licensee of the Utilidor system and the Water Licence number is 3BM-RUT 1520. This licence was issued on March 30, 2015 and this will expire on March 29, 2020. Char Lake is the approved water source in the Community. A hydrology study conducted by exp Services Inc. shows that there was sufficient stored volume between the extreme of ice thickness and the raw water intake to support two (2) successive years of extreme high demand like 300,000 cubic meters annually combined with extreme low precipitation (78.2 mm total) just prior to the replacement period of the buried pipes. The pump station has a meter to record the annual extraction volume from the Lake. The total extraction volume in 2018 was 156,062 cubic meters. The Airport facilities shared 5,000 cubic meters annually. Water Truck is the only mode of distribution system for the Airport facilities. Sewage is also collected by sewage trucks from house to house and dumped into a sewage lagoon which is operated under a different water licence. The Utilidor system consists of a pump station at Char Lake, intake pipe, water treatment plant at Signal hill, water distribution and sewer lines, fire hydrants, access vaults and a macerator unit. The Utilidor system was built in 1970's without a wastewater treatment plant. In 2016, the entire buried utilities were replaced and also expanded. In 2020, the construction of the pump station at Char Lake and is the existing water treatment plant at Signal Hill is scheduled to be completed. The sewage effluent via wastewater pipes is diluted before entering into the sea. The effluent discharge occurs just above the low tide mark. The effluent is discharged continually into the ocean at high tide and on land at low tide. Following the condition in part C, item 4 of the existing water licence; a site specific study for the determination of Fecal Coliform limit for sewage disposal facility was determined and has been submitted to the Water Board. A consultant is hired to conduct a site selection study to build a new mechanical wastewater treatment plant. The design concept was initiated and needs to be revised and upgraded. The new plant is anticipated to be built and commissioned in 2024. This plant will also receive truck sewage coming from the Airport facilities. The airport sewage lagoon will be decommissioned soon after the new Mechanical wastewater treatment plant is commissioned. A consultant is engaged for replacing the Char Lake existing Pump station, Signal Hill Water Treatment plant upgradation and also building a new mechanical wastewater treatment plant to improve the overall water distribution system ; wastewater collection and Treatment process to bring the Utilidor water licence into full compliance. The entire Utilidor system operation was contracted out to the Contractor ATCO and they day to day run and monitor these facilities. The summer samplings are taken and get tested by the Ottawa based Accredited Caduceon Lab. The annual report is submitted on time. The O&M manuals will be submitted to the Water Board soon after the constructions of the all three structures are completed. The daily water extraction volume exceeds 300 cubic meters/day and also exceeds the annual extraction volume 60,000 cubic meters. 2018 Annual Report identifies that Resolute Bay consumed 152,062 cubic meters, therefore, a ten years term for renewal of the Type A licence is recommended with 160,000 cubic meters of usage. The time period of ten years is expected to provide a realistic opportunity for the licensee to meet the long term requirements of the Licence and establish a consistent compliance record.

French: Résumé du permis d'utilisation des eaux du hameau de Resolute Bay No 3BM-RUT 1520. Le hameau de Resolute Bay se situe sur la côte sud de l'île Cornwallis, sur le chenal Parry, aux coordonnées suivantes : 74 43'01 N et 94 58'10" O. La ville a une population actuelle de 279 habitants (2019). Durant l'été, la population de la ville passe à environ 800 personnes en raison de la présence de personnel militaire. Il y a trois (3) permis d'utilisation des eaux dans la collectivité. Le ministère des Services communautaires et gouvernementaux du gouvernement du Nunavut (SCG-GN) est le titulaire de licence du système Utilidor et le numéro du permis d'utilisation des eaux est 3BM-RUT 1520. Le permis a été délivré le 30 mars 2015 et sera échu le 29 mars 2020. Le lac Char est la source d'eau approuvée dans la collectivité. Une étude hydrologique effectuée par exp Services inc. indique qu'il y a un volume entreposé suffisant entre l'extrémité de l'épaisseur de glace et la prise d'eau brute pour soutenir deux (2) années consécutives de demande annuelle très élevée de l'ordre de 300 000 mètres cubes, combinée à des précipitations très faibles (total de 78,2 mm) juste avant la période de remplacement des tuyaux enfouis. La station de pompage est munie d'un compteur qui permet de consigner le volume d'extraction annuel du lac. En 2018, le volume d'extraction annuel était de 156 062 mètres cubes. Les installations aéroportuaires se sont partagées 5 000 mètres cubes annuellement. Le transport par camion d'eau est le seul système de distribution pour les installations aéroportuaires. Le réseau d'assainissement est également assuré par camions-citernes d'une maison à l'autre, puis les eaux usées sont déversées dans l'étang de stabilisation, exploité en vertu d'un permis d'utilisation des eaux distinct. Le système Utilidor se compose d'une station de pompage au lac Char, d'un tuyau d'admission, d'une usine de traitement des eaux à Signal Hill, de lignes de distribution d'eau, de canalisations d'égout, de bornes d'incendie, de puits d'accès et d'une

[illegible]

### Post-Closure Phase: from to

## Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
New project geometry: This is the Utilidor system consists of a Pump station at Char Lake, WTP at signal Hill, Storage Tank at Signal Hill, Intake pipe, water and sewer buried lines, Fire hydrants, Valves, a Macirator unit and sewer outfall.	Municipal and Industrial Development	Commissioners	The existing site	Good	Within the town
New project geometry: This is the Utilidor system consists of a Pump station at Char Lake, WTP at signal Hill, Storage Tank at Signal Hill, Intake pipe, water and sewer buried lines, Fire hydrants, Valves, a Macirator unit and sewer outfall.	Municipal and Industrial Development	Municipal	The utilidor system was built in 1970s to supply drinking water to Resolute Bay Residents and the Federal staffs who visited there for training, research etc. The waste water is highly diluted and discharged into the sea by gravity.	No problem	Grise Fiord and Arctic Bay

## Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Resolute Bay	Bhabesh Roy	Community Government Services of Government of Nunavut	2020-01-17

## Authorizations

Indicate the areas in which the project is located:

North Baffin

### Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Nunavut Water Board	The Utilidor system consists of a Pump Station, Intake line, A WTP, Distribution line, Sewer Line, a Macirtaor unit and final discharge pipe	Active		
Nunavut Water Board	Water licence will be renewed by NWB.	Active		
Nunavut Water Board	Amendment and renewal of the existing Licence for 10 yrs as Type A	Active	2015-03-30	2020-03-29

### Project transportation types

Transportation Type	Proposed Use	Length of Use
Air		

### Project accomodation types

Community

## Material Use

Equipment to be used (including drills, pumps, aircraft, vehicles, etc)

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Heavy	7300	Unknown	two (2) equipment per day, 365 days and 10 yrs.7300 term

### Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Diesel	fuel	20	200	4000	Liters	Construction

### Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
550	pumping	Char lake

# Waste

## Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Seismic lines	Sewage (human waste)	427.57 cubic meters/day	pumping though the pipe	Using a Macerator unit currently. Expected a new Wastewater Treatment Plant in 2024
Municipal and Industrial Development	Sewage (human waste)	Very close to 136,000 cubic meters annually	Gravity drainage	Macirator unit is used at the effluent line

## Environmental Impacts:

No Impact

# **Additional Information**

## **SECTION A1: Project Info**

The Utilidor system consists of a Pump station, an Intake line, a WTP, a distribution line, a sewer line, a macirator unit and a final sewer outfall

## **SECTION A2: Allweather Road**

Yes

## **SECTION A3: Winter Road**

Yes

## **SECTION B1: Project Info**

## **SECTION B2: Exploration Activity**

## **SECTION B3: Geosciences**

## **SECTION B4: Drilling**

## **SECTION B5: Stripping**

## **SECTION B6: Underground Activity**

## **SECTION B7: Waste Rock**

## **SECTION B8: Stockpiles**

## **SECTION B9: Mine Development**

## **SECTION B10: Geology**

## **SECTION B11: Mine**

## **SECTION B12: Mill**

## **SECTION C1: Pits**

## **SECTION D1: Facility**

## **SECTION D2: Facility Construction**

## **SECTION D3: Facility Operation**

## **SECTION D4: Vessel Use**

## **SECTION E1: Offshore Survey**

**SECTION E2: Nearshore Survey**

**SECTION E3: Vessel Use**

**SECTION F1: Site Cleanup**

Always for easy and safe traffic movement

**SECTION G1: Well Authorization**

**SECTION G2: Onland Exploration**

**SECTION G3: Offshore Exploration**

**SECTION G4: Rig**

**SECTION H1: Vessel Use**

**SECTION H2: Disposal At Sea**

**SECTION I1: Municipal Development**

Yes, this system provides safe environment and community growth

**Description of Existing Environment: Physical Environment**

Safe

**Description of Existing Environment: Biological Environment**

Safe

**Description of Existing Environment: Socio-economic Environment**

Safe

**Miscellaneous Project Information**

NIL

**Identification of Impacts and Proposed Mitigation Measures**

Safe supply of drinking water and disposal of wastewater into the sea by gravity

**Cumulative Effects**

Good and healthy for the Public and environment

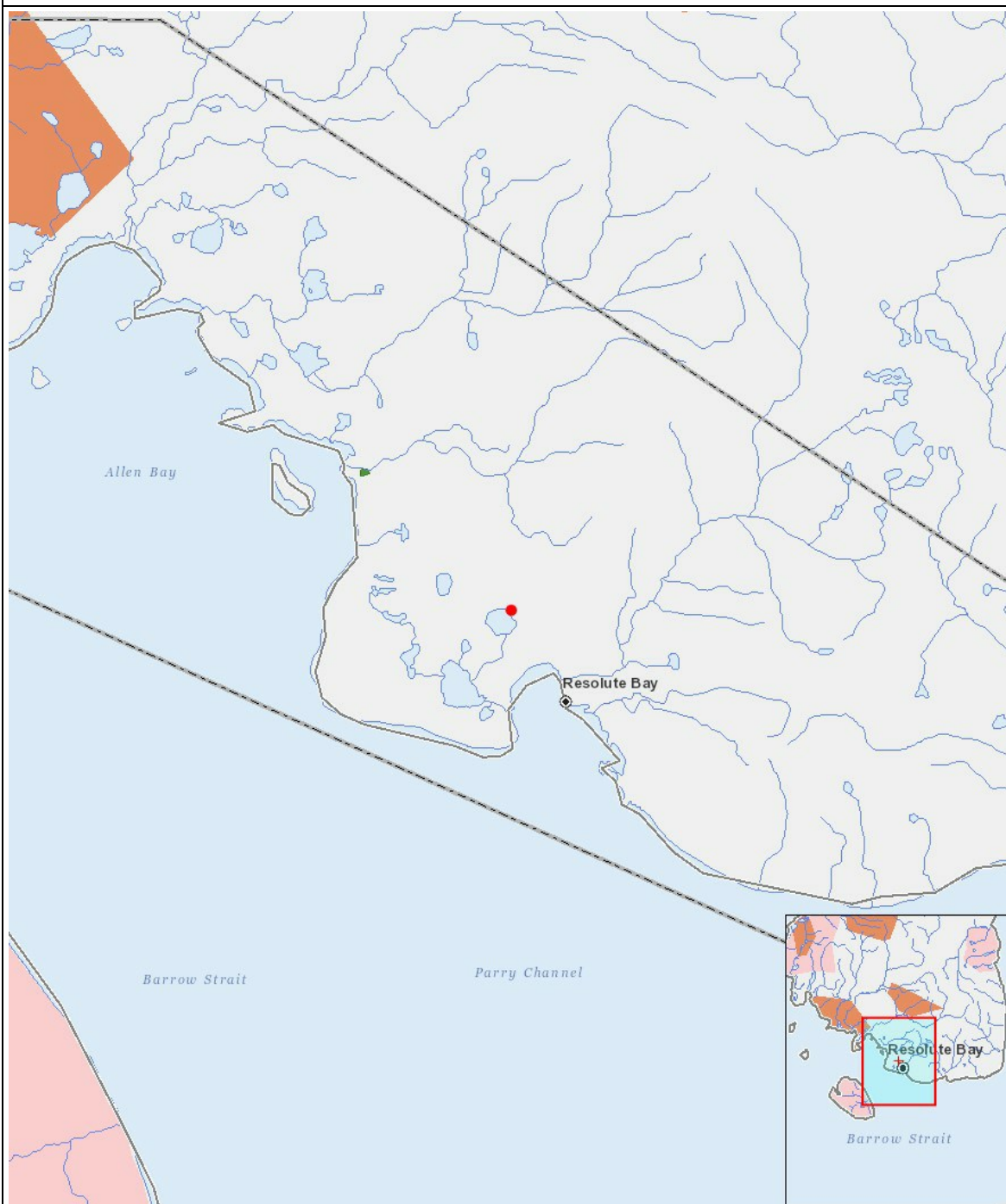
# Impacts

## Identification of Environmental Impacts

		PHYSICAL										BIOLOGICAL										SOCIO-ECONOMIC																									
		Designated environmental areas			Ground stability		Permafrost		Hydrology / Limnology			Water quality		Climate conditions		Eskers and other unique or fragile landscapes		Surface and bedrock geology		Sediment and soil quality		Tidal processes and bathymetry		Air quality		Noise levels		Vegetation		Wildlife, including habitat and migration patterns		Birds, including habitat and migration patterns		Aquatic species, incl. habitat and migration/spawning		Wildlife protected areas		Archaeological and cultural historic sites		Employment		Community wellness		Community infrastructure		Human health	
Construction																																															
Municipal and Industrial Development		-	P	N	-	P	N	U	P	N	P	P	U		P	N	N	N	N		P	P	P	P	P																						
Operation																																															
Municipal and Industrial Development		P	-	P	-	P	P	N	N	N	N	P	N		P	N	N	N	N		N	P	P	P	P																						
Decommissioning																																															
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(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

## Project Location



## List of Project Geometries

New project geometry: This is the Utilidor system consists of a Pump station at Char Lake, WTP 1 point at signal Hill, Storage Tank at Signal Hill, Intake pipe, water and sewer buried lines, Fire hydrants, Valves, a Macirator unit and sewer outfall.