

NIRB Application for Screening #125031

Renewal of the Municipality of Pangnirtung Water Licence #3BM-PAN1417 TYPE B to TYPE A.

Application Type: New
Project Type: Infrastructure
Application Date: 12/12/2016 3:07:07 PM
Period of Operation: From 2017-01-01 to 2027-09-15
Proposed Authorization: From 2017-09-16 to 2027-09-15
Project proponent: Department of Community and Government Services, Bhabesh Roy
 Department of Community and Government Services, Bhabesh Roy
 P.O. Box 379, Pond Inlet, NU X0A 0S0, Phone: 867-899-7314, Email: broy@gov.nu.ca
 Pond Inlet Nunavut X0A 0S0
 Canada
 Tel: 867-899-7314, fax: 867-899-7330

DETAILS

Non-technical project proposal description

English: Introduction: The Municipality of Pangnirtung is located in the Canadian territory of Nunavut, and lies on the south-eastern shore of the Pangnirtung Fiord, which itself is located at Latitude 66009°00' N and Longitude 65040°34' W on the eastern side of Baffin Island. In total, the municipal boundary covers an area of 7.5km². In 2016, the Hamlet had a population of 1,811 and total of 433 private dwellings. The current Water Licence with a permit of water extraction volume for 74,000 cubic meters annually was issued on Sep. 14, 2014 and will be expired on Sep.15, 2017. This type B Water Licence #3BM-PAN 1417 (proposed renewal Type A considering storage volume annually will exceed 60,000cubic metres.) contains three facilities: Water Supply, Wastewater Treatment and Waste management. Water for municipal use is pumped from Duval River, stored in the water storage reservoir and trucked delivery to the residents. The waste water of the Community is treated in a mechanical treatment Plant. Solid waste from the Municipality is currently disposed of in a landfill site which is nearing its life capacity. Drinking Water Supply: Water Truck Fill Station: The Municipality has built a new Water Truck filling station. The old station is still there for an emergency. This new station has the following components: 1. Two intake pipes; (2) Two truck fill arms and (3) CT approach as; a. CT Value = 12 mg· min/L b. CT = Concentration * Time Where the concentration of residual chlorine is in mg/L and the time the water is in contact with the chlorine is in minutes. b. Flow Rate = 1,000 L/min c. Contact time = 12 minutes d. Baffle factor =1.0 The predicted production flow for the design horizon of the facility is 200,907 m³ per annum. To facilitate uninterrupted truck filling at two truck fill arms, the CT pipe is sized to carry 15,000L of water. The water delivery process of the truck fill station has been broken down to several building blocks that make up the complete system. These building blocks are: (1) Pumping; (2) Filtering; (3) Chlorination; (4) Water reservoir; (5) Delivery system to trucks; (6) Emergency power; and (7) Controls and auxiliary equipment. Wastewater Treatment Plant (WWTP): The Community wastewater is treated by a Mechanical Treatment Plant. Construction of the WWTP started in 2003 and became operational in 2005. Originally, the process was a Rotating Biological Contactor (RBC) which failed for various reasons. The process was converted to a "conventional" activated sludge system that was enhanced using the media from the RBC. However, it was determined later that the process, as it was configured, was undersized for the municipal flow; being expected to treat the process wastewater from the fish-processing plant was beyond its capabilities. An earlier attempt had been made to try and incorporate the fish plant process effluent with the municipal wastewater for treatment at the WWTP but the plant was unable to perform properly. A Design Brief was completed (early 2013) by exp Services Inc. and outlined the design criteria and included several suggested processes that could provide the level of treatment required; the Membrane Bioreactor (MBR) process was recommended as it required the smallest footprint (considering the need to enclose the process for winter operations). During the design phase, the recommended process was sized to accept the fish plant processing wastewater. As well, an important aspect of WWTP operation is appropriate solids management and providing the means to waste excess biosolids. This was achieved using large GeoTubes™ which simplifies this operation. The Pang WWTP has been operational since 2015 and is working well. The plant effluent quality is better and achieving BOD₅ and TSS concentrations <10mg/L/10mg/L). exp Services Inc. along with GE Process water (membrane supplier) is retained for consultancy services to provide extended care technical support, training and operations oversight. exp has also prepared a Hamlet-wide Spill Contingency Plan (SCP) and a wastewater treatment plant Bypass Contingency Plan (BCP). The SPC addresses how the Municipal employees should respond to a spill of petroleum (or similar) products. The BCP instructs the WWTP plant personnel in how to respond to various unit process shutdown requirements (for maintenance purposes) or failures within the treatment system. Most of the BCP scenarios would allow for the continuation of full treatment; a few would result in partial treatment until the underlying issue is addressed. It would be rare for a complete plant bypass to be required. Landfill site and Metal waste site: The Municipality of Pangnirtung maintains two separate wastes sites: Metal wastes and domestic wastes. This new Capital project is expected to be designed to minimize the waste management issues and concerns of the Community in 2020-21. Water Licence will be amended accordingly to capture capital projects

French: N/A

Inuktitut: : ,
, Latitude 66009'00' N Longitude 65040'34" W- .
, 7.5 2-. 2016-, 1,811-
433-. -
74,000 15, 2017-. type B
#3BM-PAN 1417 (Type A
60,000 .) :
.
.
.
. : :
.
: 1. ; CT ; a. CT
= 12 mg· min/L b. CT = * m/L-
--. b. = 1,000 L/min c. = 12
d. Baffle factor =1.0 200,907 m3 .
, CT 15,000 .
.
: (1)
; (2) ; (3) ; (4) ; (5)
; (6) ; (7)
. :
. 2003- 2005-.
.
“”
, ,
.
. (2013) exp Services Inc.-
; Membrane Bioreactor-
().
.
.
. 2015-
. BOD5-
TSS <10mg/L/10mg/L). exp Services Inc.- GE
.
. exp-
(SCP)
(BCP). SPC
(). BCP
() . BCP-
;
.
: .
.
2020-2021.
.

Personnel

Personnel on site: 10

Days on site: 365

Total Person days: 3650

Period of operation: from 2017-01-01 to 2017-12-31

Proposed term of operation: from 2017-09-16 to 2027-09-15

ACTIVITIES

Project Activities

Location	Activity Type	Land Status	Site History	Site Archaeological or Palentological Value	Proximity to the nearest communities and any protected areas
Municipality of Pangnirtung- Water supply, land fill and Wastewater Treatment Plant	Waste disposal	Commissioners	The waste sites consist of Land fill and metal dump. The landfill receives community's domestic and industrial wastes. Both sites are full. Wastewater is treated by a Mechanical plant.	Nil	Municipality of Qikiqtarjuaq. The landfill is protected by a Fench. The Wastewater treatment is done inside the building.

Community Involvement and Regional Benefits

Community	Name	Organization	Date Contacted
Pangnirtung	Municipality of Pangnirtung	Municipality	2016-12-12

AUTHORIZATIONS

Project Locations

South Baffin

Project Authorization

Authorizing Agency	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Nunavut Water Board	Approval for TYPE A Water Licence	Not Yet Applied		

MATERIAL USE

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Heavy Equipment	11	Heavy Type	Transportation , Compacting etc.

Detail Fuel and Hazardous Material Use

Fuel / Material	Type	Number of Containers	Container Capacity	Total Amount	Units	Proposed Use
Diesel	fuel	200	200	40000	Liters	In operating the heavy equipment
0.0	hazardous	0	0	0	Liters	0.0

Project Water Consumption

Daily Amount (m3)	Proposed Water Retrieval Methods	Proposed Water Retrieval Location
141	Pumping	Duval River to Storage Reservoir

WASTE

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional Treatment Procedures
Waste disposal	Combustible wastes	unknown	Trucking	Landfill

Environmental Impacts

No Environmental impact is expected. Spill contingency plan is being followed by the Municipality.

Description of Existing Environment: Physical Environment

Description of Existing Environment: Biological Environment

Description of Existing Environment: Socioeconomic Environment

Identification of Impacts and Proposed Mitigation Measures

Cumulative Effects

IMPACTS

TABLE 1 - IDENTIFICATION OF ENVIRONMENTAL IMPACTS

--

CONSTRUCTION																								
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-
OPERATION																								
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-
DECOMMISSIONING																								
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)