



NIRB Application for Screening #125743

Application for the Water Licence Amendment of the Municipality of Kimmirut #3BM-KIM1929

Application Type: New

Project Type: Municipal and Industrial Development

Application Date: 11/29/2022 3:55:58 PM

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
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
Phone Number:: 867-899-7314, Fax Number:: 867-899-7330

DETAILS

Non-technical project proposal description

English: The Government of Nunavut, Department of Community and Government Services, on behalf of the Municipality of Kimmirut, is applying for the construction of the new wastewater treatment facility (WWTF) and amendment of the discharge effluent limits in the existing water license 3BM-KIM1929 to effectively service the growing population in Kimmirut over a 20-year life span. The facility consists of a lagoon and wetland-treatment-area and will be designed to meet the long-term needs of Kimmirut and the regulatory requirements. The lagoon requires a working volume of 26,900 m³ based on projected annual wastewater generation until 2043. The treatment goals for the WWTF effluent criteria at the end of treatment are established as 100, 120 and 1.25 mg/L for carbonaceous biochemical oxygen demand (CBOD), total suspended solids (TSS) and un-ionized ammonia as nitrogen, based on a 6-year research project completed by Centre for Water Resources Studies at Dalhousie University. The licensee is requesting to remove the effluent quality limits from KIM-3 and to add limits to KIM-5 which does not currently have limits. Once the future lagoon is constructed KIM-3 will represent partially treated wastewater leaving the lagoon and KIM-5 will represent fully treated wastewater effluent at the outlet of the wetland-treatment-area. It is still recommended to sample KIM-3 for treatment monitoring purposes but no effluent parameter limits should be applied. The design consultant recommends that the effluent quality limits applied at KIM-5 be CBOD 100 mg/L, 120 TSS mg/L, and to remove faecal coliforms as a parameter since this is a public health parameter and not an environmental parameter. The receiving environment is zoned for waste disposal and not used by the public for fishing, harvesting, or recreation. Faecal coliforms are not included in the federal Wastewater Systems Effluent Regulations SOR/2012-139 Fisheries Act Registration 2012-06-29. Faecal coliforms are also no longer applied as an environmental parameter in the Northwest Territories where the Nunavut Water Board historically derives its effluent parameter decisions on.

French: Le ministère des Services communautaires et gouvernementaux (SCG) du gouvernement du Nunavut, au nom de la municipalité de Kimmirut, demande la construction d'une nouvelle installation de traitement des eaux usées et la modification des limites de l'effluent de rejet dans le permis d'utilisation des eaux 3BM-KIM1929 existant afin de desservir efficacement la population croissante de Kimmirut sur une période de 20 ans. La lagune sera conçue pour répondre aux besoins à long terme de Kimmirut, aux exigences réglementaires et aux mesures de protection nécessaires pour éviter d'avoir un impact sur l'écoulement des eaux souterraines vers le lac Fundo. CGS a retenu Dillon Consulting Limited (Dillon) pour fournir des services de conception et d'administration de la construction d'une nouvelle installation de traitement des eaux usées à Kimmirut. Les objectifs de traitement de l'effluent lagune-milieu humide ont été établis à 100, 120 et 1,25 mg/L pour la demande biochimique en oxygène des matières carbonées, le total des solides en suspension et l'ammoniac non ionisé sous forme d'azote, d'après un projet de recherche de six ans réalisé par le Centre for Water Resources Studies de l'Université Dalhousie. Le titulaire du permis demande de retirer les limites de qualité des effluents du point KIM-3 et d'ajouter des limites au point KIM-5 qui n'en a pas actuellement. Une fois que la future lagune sera construite, KIM-3 représentera les eaux usées partiellement traitées et KIM-5 représentera les effluents d'eaux usées entièrement traitées. Le consultant en conception recommande que les limites de qualité de l'effluent appliquées au KIM-5 soient de 100 mg/L pour la DBOC et de 120 mg/L pour les TSS, et de supprimer les coliformes fécaux comme paramètre, car il s'agit d'un paramètre de santé publique et non d'un paramètre environnemental. Le milieu récepteur est zoné pour l'élimination des déchets et n'est pas utilisé par le public pour la pêche, la récolte ou les loisirs. Les coliformes fécaux ne sont pas inclus dans le Règlement sur les effluents des systèmes d'assainissement des eaux usées fédéral DORS/2012-139 - Enregistrement de la Loi sur les pêches 2012-06-29. Les coliformes fécaux ne sont plus utilisés comme paramètre environnemental dans les Territoires du Nord-Ouest, où l'Office des eaux du Nunavut s'est toujours inspiré pour prendre ses décisions concernant les paramètres des effluents. La production annuelle prévue d'eaux usées (débit) en 2043 serait de 19 200 m³, ce qui nécessiterait un volume de travail minimal de 26 900 m³ pour la lagune.

[illegible]

Operations Phase: from 2023-09-30 to 2043-09-30

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
sewage lagoon	Municipal and Industrial Development	Municipal	shallow fresh water lake	site has no archeological or paleontological value	proximity to the town 1.3 km

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Information is not available			

Authorizations

Indicate the areas in which the project is located:

South Baffin

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Nunavut Water Board	water license 3BM-KIM1929	Active	2019-05-27	2029-05-26

Project transportation types

Transportation Type	Proposed Use	Length of Use
Land	SEWAGE TRUCKS	

Project accomodation types

Community

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
excavator	1	heavy duty	excavation
crusher	1	heavy duty	aggregate production
screener	1	heavy duty	aggregate screening
dump truck	2	heavy duty	aggregate and construction material ground transportation
front loader	1	heavy duty	loading aggregate and construction materials
heavy duty compactor	2	heavy duty	aggregate compaction
grader	1	heavy duty	grading
dewatering pumps	2	heavy duty	surface water management and diversion
water truck	1	12000 L	aggregate material compaction

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
unknown	hazardous	0	0	0	Liters	Not applicable
Diesel	fuel	1	12000	12000	Liters	PPD fuel truck

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
0		

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Information is not available				

Environmental Impacts:

presently community sewage disposal practice is direct discharge into marine environment. this project will improve environmental impacts by providing proper sewage containment and treatment.

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

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

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

1. Municipality sewage disposal facility is identified as Municipal Capital Facility. Project consists of Sewage Lagoon and wetland construction. Daily service provision service consists of Collecting raw sewage from businesses and private housing, trucking and disposing the raw sewage into sewage lagoon. Once a year sewage will be decanted into wetland area. To construct new sewage lagoon, local quarry material will be used. Produced quarry aggregate will be trucked to the construction site. Recommended but not limited to, PPE in sewage disposal consists of gloves, eye protection, hard hat, steel toe boots, tyvek coverall and face respirator. There is no safety requirement to have fire fighting equipment installed at the sewage lagoon facility. Fire extinguishers are located within sewage trucks. Sewage truck engine and sewage pump are the Noise sources during sewage disposal process. Ear plugs are recommended.

Description of Existing Environment: Physical Environment

Presently Kimmirut sewage disposal is uncontrolled direct sewage discharge into the wetland area, directly connected with marine environment. Access road to existing sewage discharge area will be upgraded. There are no designated recreational, harvesting or park areas in vicinity.

Description of Existing Environment: Biological Environment

Existing shallow fresh water lake to be converted into sewage lagoon does not house any aquatic species. It is not recognized spot as a critical habitat or residence of any species. Locals have not noticed any migration or spawning patterns of any species.

Description of Existing Environment: Socio-economic Environment

Existing area has been used as an unregulated sewage disposal for decades. There are no land or marine harvesting activities in sewage disposal area.

Miscellaneous Project Information

Presently raw sewage collection from private homes and businesses is carried out daily with sewage truck. Upon filling the sewage truck to the capacity, raw sewage is discharged into sewage lagoon where primary influent treatment occurs. During summer months sewage is transferred/decanted into wetland area. Initial sewage decanting flow into wet land is actuated by sewage transfer gas powered pump. As soon as syphoning transfer starts, sewage pump is disconnected and removed from the site. Sewage decanting/transfer process from lagoon cell into wetland takes on an average 6-8 weeks. Sewage final effluent polishing treatment is completed in the wet land prior to entering the marine environment. Gravel supply for all road upgrades and new road built, will be supplied from existing quarry. Aggregate volumes required for sewage lagoon construction and truck turn around area are estimated @ 34 000 m3 Estimated existing quarry gravel supply is 70 000m3

Identification of Impacts and Proposed Mitigation Measures

Constructing the new waste water treatment disposal facility (sewage lagoon) will significantly improve land and aquatic environment

Cumulative Effects

Monitored and regulated new sewage disposal facility will have significant positive impact on environment

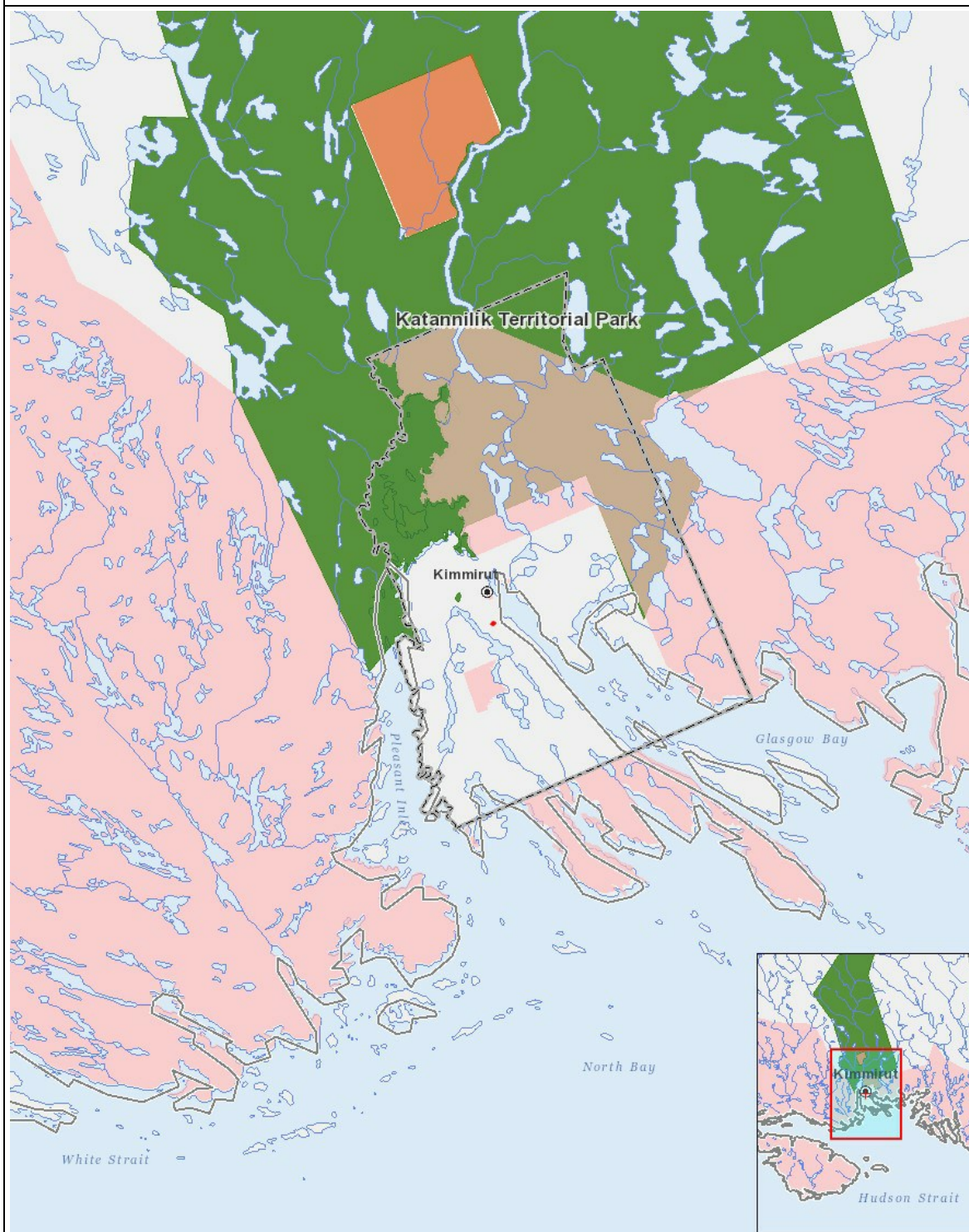
Impacts

Identification of Environmental Impacts

		PHYSICAL	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	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
Construction																										
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-
Operation																										
Municipal and Industrial Development		-	-	-	-	P	-	-	-	-	-	-	-	-		-	U	M	P	-		-	P	P	P	P
Decommissioning																										
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

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

Project Location



List of Project Geometries

1	polygon	sewage lagoon
---	---------	---------------