NIRB Uuktuutinga Ihivriuqhikhamut #125135

3AM-ARV1016 Water Reservoir Cell #3

Uuktuutinga Qanurittuq:	New
Havaap Qanurittunia:	Imaktiggut
Uuktuutinga Ublua:	5/15/2017 11:29:07 AM
Period of operation:	from 2017-05-15 to 2038-05-17
Piumayaat Angirutinga:	from 2017-05-15 to 2038-05-17
Havauhikhaq Ikayuqtinga:	Megan Lusty GN-CGS P.O. Box 490 Rankin Inlet Nunavut X0C0G0 Canada Hivayautit Nampanga:: 867-645-8176, Kayumiktukkut Nampanga:: 867-645-8141

QANURITTUT

Tukihiannaqtunik havaariyauyumayumik uqauhiuyun

Qablunaatitut: Refer to attached document.

Uiviititut: N/A

Inuktitut: Refer to attached document.

Personnel

Personnel on site: 0
Days on site: 0
Total Person days: 0
Period of operation: from 2017-05-15 to 2017-05-15
Proposed term of operation: from 2017-05-15 to 2038-05-17

Hulilukaarutit

Hulilukaarutit

Inigiya	Hulilukaarut Qanurittuq	Nunannga Qanurittaakhaanik	Initurlinga qanuritpa	Initurlinga utuqqarnitat unaluuniit Ingilraaqnitat Uyarannguqtut akhuurninnga	Qanitqiyauyuq qanitqiamut nunallaat kitulluuniit ahiruqtailiyainnit nuna
Water Reservoir Cell #3	Municipal and Industrial Development	Municipal	Adjacent to water reservoir cells #1 (constructed 1998) and #2 (constructed 1988), community water treatment plant/truckfill station.	No known archaeological/paleontological sites.	Within Hamlet of Arviat municipal boundaries.
New Water Treatment Plant	Municipal and Industrial Development	Municipal	Adjacent to water reservoir cell #1 (constructed 1998) and existing pumphouse and standby generator buildings.	No known archaeological/paleontological sites.	Within Hamlet of Arviat municpal boundaries.

Nunaliin Ilauyun, Aviktuqhimayuniitunullu Ikayuuhiarunguyun

Nunauyuq	Atia	Timiuyuq	Upluani Uqaqatigiyaungmata
Arviat	Hamlet Council	Preliminary meeting with Hamlet Council and design consultant (exp) regarding new water treatment plant and raw water storage expansion (Cell #3)	2016-11-01
Arviat	Hamlet Council	Motion Number for approval of the poject is 77/17	2017-05-04

Angiuttauvaktunik

Naunaiqlugu nunanga talvani havauhikhaq ittuq

Kivalliq

Angiuttauvaktunik

Munariniqmut Ayuittiaqtuq	Angirutinga Qanurittuq	Tadja Qanurittaakhaanik	Ublua Tuniyauyuq/Uuktuqtuq	Umikvikhaa Ublua
Nunavut Kavamanga, Pivalliayuliqiyikkut Ingilrayuliqiyitkullu	Letter from Todd McKay, Director, Nunavut Airports to Paul Clow, CGS, as approval from EDT, Nunavut Airports Division for the proposed water reservoir. Determined that the proposed water reservoir will not impair the safety of aircraft operating in the airspace surrounding the Arviat airport.	Applied, Decision Pending	2017-04-12	
Tingmiliqiyiitkut Kaanatami	TC #2017-195 Aeronotical Assessment Form for Obstacle Evaluation	Active	2017-03-31	2018-09-30
Nunavut Imaligiyit Katimayit	3AM-ARV1016 Ammendment/Renewal Application filed	Applied, Decision Pending		

Ihuaqutivaluin Atuqtauyukhan

Hanalrutit atuqtaunahuat (ukuallu ikuutat, pampiutainnik, tingmitinik, akhaluutinik, hunaluuniit)

Hanalrutit Qanurittuq	Qaffiuyut	Aktikkulaanga – Qanurittullu	Qanuq Atuqtauniarmangaa
Loader, excavator, dump trucks, etc.	-	-	Construction of Cell #3 and Water Treatment Plant

Qanurittuq Urhuqyuaq unalu Qayangnaqtut Hunavaluit Aturninnga

Qanurittuq urhuqyuaq hunavaluit aturninnga:	Urhuqyuaq Qanurittuq	Qaffiuyut qattaryut	Qattaryuk Aktikkulaanga	Atauttimut Qaffiuyut	Ilanga	Qanuq Atuqtauniarmangaa
Diesel	fuel	0	0	0	Liters	For heavy equipment

Imaqmik Aturninnga

Ubluq qanuraaluk (m3)	Aturumayain imavaluin utiqtittagaani qanuq	Atulirumayain imavaluin utiqtittagani humi
2000	Overland pipeline to water reservoirs - approx. daily amount over 3 months (175,000m3 annually)	Wolf Creek - no additional water requirements/consumption during project construction

Iqqakuq

Ikkakunik Munakgiyauyunik

Havauhikhaq Hulilukaarut	Qanurittuq Iqqakut	Ihumagiyauyuq Qanuraaluktut Atuqtait	Qanuq Iqqakuurniarmangaa	Halummaqtirarnirutikhan piyutin
Municipal and Industrial Development	Atakuin (halumaiqtun nunan, iqqakuuvaluillu uyaqqiqivingmin)	60,000m3	Excavated material at Cell #3 site - to be reused in berm construction	Surplus material to be disposed of offsite as per direction from site Engineer and Hamlet

Avatiliriniqmut Ayurhautingit:

The contractor must adhear to environmental protection procedures during construction of the new reservoir cell, with measures outlined for the disposal of waste, and protecting drainage systems and waterways. Refer to Environmental Procedures Specifications uploaded to Project Documents. Excavated material is to be reused for the construction of the cell berms.

Qanurittut Ilangani 2

Havauhikhaq Naunaitkutat

- The Hamlet of Arviat has outgrown the current reservoir infrastructure and additional capacity is required to meet the water demands of the growing community. Limiting water availability will increase the risk of water wash diseases. - There is no alternative to constructing additional reservoir capacity. Not locating the third reservoir cell beside the existing infrastructure does not make financial or operational sense, as additional treatment and truckfill stations would be needed. - Approval will be required from the NWB upon completion of the NIRB screening process.

DFO Aulapkainiqmut Uqaqtait (OS) Angirutingit

N/A

Ingilradjutit

- Site will be accessed by Hamlet road adjacent to the current reservoirs and pumphouse. Road is frequently used, by community residents and large water trucks for the delivery of water. - Dust management will be achieved by following speed limits. - Supplies will be brought into Aviat via sealift. - Modular construction of the new water treatment plant is anticipated, taking place in the south prior to shipping. - No additional flights.

Havakvikmi Initurlinga

N/A

Hanalrutit

- Heavy equipment will be used for construction purposes only. No equipment will remain on site for operation.

Imaktiggut

- Construction of a new water reservoir cell (Cell #3) and new water treatment facility is required. It has been requested from the NWB that the amount of water authorized be increased to 175,000 cubic metres annually to meet the water demands of the community. - The community water source is Wolf Creek. No additional water requirements/consumption are required during project construction. - An overland pipeline supplies water to the two water reservoir cells currently in place, seasonally from July-September.

Iqqakuqhaq Imaq (Qirnarivyaktuq imaq, Anaq, Quq, Aadla)

- No wastewater is produced by the new reservoir cell. - Wastewater is produced from the new water treatment plant that will be trucked stored in the wastewater tank and trucked to the community sewage lagoon. Wastewater will be produced from the filter backwashing process, operational drains and online analyzers, and the water treatment plant washroom.

Ukhukyuattigut

- Fuel will be stored onsite of the new water treatment plant for heating and for the back-up generator. The current water treatment plant has fuel stored for the same purposes. - Diesel is used to operate heavy equipment during construction.

Qayangnaqtu unalu Qayangnaqtut Hunavaluit

- Calcium hypochlorite (granular chlorine) and fluoride will be used in the water treatment process. The chlorination room is separate from the rest of the water treatment plant with its own exterior door. - Chlorine and fluoride are currently used at the water treatment plant and reservoir.

Havakvik unalu Havaktuliriyiitkut/Inungit-Maniliurniqmut Ayurhautingit

- Construction tender will include standard GN NNI Policy.

Inuit Ilauniq/Utuqqanik Ilihimaniq

- Arviat Hamlet Council was consulted in the early planning phase of the water treatment plant and storage expansion (Cell #3) project. Hamlet Council passed a motion (77/17) approving this project.

TITIRAQNINNGANI I: Haamlangit unalu Havakviuniqmut Pivallianiq: Havauhikhaq Naunaitkutaq

- The Hamlet of Arviat requires additional water storage and water treatment to meet the needs of the growing municipality. The municipality is responsible for supplying treated water to residents, with the assistance of CGS. Construction is being managed through CGS. - The existing water reservoir includes two cells adjacent to the road out of town to the north of the community. A third cell with an estimated active volume of 103,427 metres cubed is required to meet the water needs of the community to 2038. Locating the new cell (Cell #3) to the west of Cell #1 will share the western berm of Cell #1, reducing the volume of granular needed to be imported, and avoid exposure to high tides, small ponds, or the existing subdrainage system for the cells. Cell #3 will be constructed similar to Cell #1, with a high density polyethylene (HDPE) liner. Equipment is planned to be mobilized to the site during sealift 2017, and construction will take place summer 2018. First fill of the new cell is anticipated for late summer/early fall 2018. The third cell will operate under the Hamlet Water Licence, currently under renewal, 3AM-ARV1016. The contractor must adhere to environmental protection procedures during construction of the new reservoir cell, with measures outlined for the disposal of waste, and protecting drainage systems and waterways. Excavated material is to be reused for the construction of the cell berms.

Qanurittuq Ittunik Avatinga: Avatingalluanga

- Additional information on the condition of the permafrost and soil in the water reservoir and water treatment plant area can be found in the Geotechnical Report.

Qanurittuq Ittunik Avatinga: Inuuhimayunut Avatinga

- The area where the third reservoir cell will be constructed is adjacent to the other two cells. This area has previously been distrupted and there is little vegetation. - Little wildlife in the area of the new reservoir cell and water treatment plant is assumed due to the proximity to the community, adjacent to a busy road out of town, and next to the activity of 6-7 water trucks delivering water daily from approximatly 7am-10pm.

Qanurittuq Ittunik Avatinga: Inungit-maniliurutingit Avatinga

- There is significant human health risk in not completing this project. By restricting the water available to the community, people will not be able to acheive minimum daily water volumes needed to prevent water wash diseases.

Naunaiyainiq ukuninnga Ayurhautingit unalu Piumayaat Ikikliyuumiutinahuarutit

- Permafrost impacts will be mitigated during construction by excavating and installing the liner quickly as to not allow the ground to thaw. - Construction noise cannot be avoided, however it is for a limited time period. Heavy vehicle activity around the water treatment plant is already a daily occurance. - The construction phase has the potential to create employment and economic opportunities for the community; either directly at the construction site or indirectly through the use of hotels, local stores, restaurants, etc.

Tamatkiumayunik Ihuikgutivaktunik

- Further developing the area of the current water reservoir cells and water treatment plant will create a larger impacted area. However, the health needs of the community have to be met and the alternative would be to develope a new area.

Impacts

Ilitariyauniq Avatiliriniqmut Ayurhautingit

	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
Havakvinga																									
Municipal and Industrial Development		-	-	M	-	-	-	-	-	-	-	-	M		-	-	-	-	-		P	-	-	-	-
Aulapkaininnga																									
Municipal and Industrial Development		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		P	-	-	-	-
Piiqtauniq																									
Municipal and Industrial Development		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = Nakuuyuq, N = Nakuungittut unalu mikhilimaittuq, M = Nakuungittut unalu mikhittaaqtuq, U = Naluyauyuq)

Project Map