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# Gjoa Haven New Power Plant

Digitized by srujanika@gmail.com

ପ୍ରକାଶନ କମିଶନ୍ ଅଧୀକ୍ଷତା  
ଏବଂ ଆଜିର ଦିନାଜପିଲାଙ୍କିରେ

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

b2r'bA>P-45rCzPc: from 0001-01-01 to 0001-01-01

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**Qulliq Energy Corporation (QEC) is a Government of Nunavut (GN) territorial corporation.** Through the operation of 25 stand-alone diesel power plants, QEC is the sole provider of electricity to approximately 15,000 customers in the territory. Qulliq Energy Corporation is proposing to construct and operate a new power plant in the Hamlet of Gjoa Haven located in the Kitikmeot Region of Nunavut (the project). Gjoa Haven is a community with increasing demand for electricity, reflecting its growing population. The existing power plant was constructed in 1977 and has exceeded its design life. As the facility continues to age and become more outdated, it will become more difficult to maintain, and plant reliability will become an issue. Without reliable equipment, QEC's customers are at risk of system failure. This proposed multi-year project will include a new four-engine power generation facility with installed capacity of 3,100 kilowatts, designed for a 40-year life and will incorporate new technology to improve reliability, efficiency, operation, and safety. Construction will include a fuel storage system consisting of two 90,000 litre horizontal fuel tanks, and fuel pumping facilities. Additionally, QEC plans to construct a Quonset garage, transformer storage, pole racks, and oil and glycol drum storage and waste disposal area with secondary containment berm. Space will be allocated for transient staff accommodations, sea cans for storage, and a back-up emergency generator. Upgrades to the existing distribution system will also be required to connect to the new power plant. An approximately 50-metre fuel pipeline will be constructed to connect to the Petroleum Products Division (PPD) bulk fuel facility located to the east. The pipeline will be a combination of aboveground and underground construction. The new plant will be capable of integrating renewable energy sources. The proposed new lot is approximately 10,110 square metres located on unsurveyed, untitled municipal land along Nuvu Road (Road R36) and is approximately 50 metres west of the PPD bulk fuel facility. The area proposed for the power plant has been designated by the Hamlet for industrial land use. The proposed lot was presented to and approved by the Hamlet of Gjoa Haven on June 1, 2021. The GN-CGS Planning and Lands Division issued a Sketch Plan Approval Report on June 18, 2021. There are no natural drainages, or watercourses within 100 metres of the project location. There are no designated wildlife areas, marine protected areas, territorial or national parks or Inuit owned lands in conflict with the power plant location. An archaeological impact assessment will be carried out in July 2021 to determine if archaeological sites are in potential conflict with the project and identify any necessary avoidance or mitigation measures. The anticipated project schedule is shown in Table 1.

Task	Anticipated Milestone
Secure Land and Complete Archaeological Impact Assessment	March 2021 to March 2022
Detailed engineering design	April 2022 to March 2023
Contracting and procurement	April 2023 to March 2024
Construction	April 2024 to December 2025 (seasonal)
Testing and commissioning	January 2026 to March 2026
Plant handover to QEC staff	March/April 2026

On average, 21 workers are estimated to be required on-site for the duration of construction. This will fluctuate based on the construction phase. The contractor awarded the construction tender will determine the required labour force to meet project requirements. Contractors will be obligated to meet mandatory Inuit labour levels for all construction work. QEC has staff in Gjoa Haven that are responsible for the day to day operation of the power plant. This includes a full-time Plant Superintendent, and two part-time Assistant Operators. Existing staff will transition over to the new power plant once it has been constructed and commissioned. No new staffing is anticipated to be required as a result of this project. The majority of construction materials for the Project will be delivered by annual sealift. Some materials may be sourced locally or delivered via cargo plane depending on size and quantity. The contractor will be responsible for sourcing construction equipment. This may include sub-contracting locally available equipment or bringing equipment to the community through the annual sealift. This project is anticipated to provide an overall benefit to the Hamlet of Gjoa Haven with more efficient

use of diesel, a non-renewable resource, and the reduction of greenhouse gas emissions. It will also allow QEC to improve power generation infrastructure in the community, support continued community growth and achieve its mandate for the provision of safe, reliable electrical power to the communities it serves.

▷ΔÀΠΩΣ: Traduction française non identifiée comme requise pour cette communauté.

Inuinnaqtun: Qulliq Auladjuqhanut Kuapuraisinga (QEC) Nunavut Kavamanut (GN) ukiuqtaqtumi kuapuraisiuyuq. Aulapkainitigut 25 nik uqhuryuanik atuqpaktut pauwaqaqviit, QEC kut inminiinnak tuniqhaivaktut pauwaqariamingnik 15,000 nguyungnaqhiyut atuyuqtut nunaptingni. Qulliq Auladjuqhanut Kuapuraisinga uuktuqtut nappaqtirilutik aulapkailugitlu nutaamik pauwaqaqviviqhamik Hamlangganni Uqhuqtuuq ittuq Kitikmeot Avikturvianni Nunavunmi (havaaqhaq). Uqhuqtuuq nunallaaq amigaiqyuummiktut ihariagiuni pauwaqhamik, ihumagitiqiplugu inuriaqhilirmat. Hadja pihimayuq pauwaqaqvia nappaktauhimayuq 1977 mi tikiutigiplunilu igluqpaup atugaqhaatigut. Pauwaqaqviit utuqqaqpallaaraan'ngamik, ayurnarniaqtuq munaqhiyaami, pauwaqaqviklu ayuqhautipkarniaqtuq. Ihuaqanggittunik atuqtaaqtunik, QEC kut akiliqtuihimmaaqtut ayurnautiqarniaqtut pauwaiqqat. Uuktuitigiyauyuq qaffini ukiuni havaariyaqhaq ilaliutiqarniaqtuq nutaamik hitamanik ingniquitaqluni pauwaqariami januraitaqtuutilutik pawaqaqvihqaq iliuraqtauhun'nguyuq 3,100 kilowatts nik, piliurhimayuq 40 ni ukiuni atugaqhaatigut pidjutiniaqtuqlu pipkainiaqtuqlu nutaani kayumiktukkuugutiqhanik nakuuhivalliaanggini ihuaqtumik, ayurnattumik, aulahimmaariami, aanniqtailiviqhaqmiklu. Nappaktirinirmun ilaliutiniaqtuq uqhuryuaqarvikhamik piqaqtilluni malruungnik, 90,000 liitasnik uqhuryuaqviinnik, pampiklugitlu uqhuryuat igluqyuaqpanut. Imaalu, QEC upalunggaiqhimayut nappaktiriam Quonset aqhaluutiqaqvihannut, transformer mik tamayaqaqvicaqluni, naparialgit tutquumiviqhainnik, kinggiqtaq glycol mik qattaryuarmiklu tamayaqaqvicaqluni iqqakuuqvichaqluni tuglianilu piruqvihannik. Iniqarnia pidjutihun'nguyaat aullaqattaqtunik havakviit itiqtiqvihannik, tamayaqaqvicaqlutik umiat tamayaqaqviinnik, aadlamiklu piqaqlutik qilamiugutauqqaqqat januraitamik. Ihuaqhaqtauyuqhatlu pidjutihimayumut hadja aulaviqhatigut atayuqhaq nutaamut pauwaqavianut. 50 miitasnik uqhuqyuap tuqhua piliurniaqtayuq atayaami Uqhuryualiqiyitkut Uqhuqhanik Havagvianut (PPD) an'ngiumik uqhuqyuaqqaqviqaqluni uataani. Tuqhuat piqangniaqtuq qaan'ngani ataanilu nunaup havaktauluni. Nutaaq pauwaqaqvichaq pidjutittaahun'nguyuq pidjutittaariami atutqiqaaffaaqtunik auladjutihatigut. Uuktuqtayuq nutaaq nayuraqhaa aktilaan'nga 10, 110 kiqqariqtunik miitasnik ittumi ihiviuqtauhimanggittumi, atiqanggittulinu hamalatkut nunainni haniraani Nuuv Apputaa (Apputaa R36) 50 miitasn'nguyungnaqhiyutlu uataani PPD uqhuqyuaqviannit. Talvani pauwaqaqvihanni piliurhimayuq Hamalatkut igluqpakyuaqvihannut nunait aturniangginnit. Uuktuitaa tuniyauyuq an'ngiqaupluni Hamalatkunnit Uqhuqtuumi June 1, 2021 mi. GN kut CGS Upalun'ngaiyainirmun Nunatigunlu Havagvia tunihivaktut iniqhimaluanggittumik titigauyaqhimayumik Upalunggaiyaidjutimik An'ngiqaftauhimayumik Unniutimik June 18, 2021 mi. Piqanggittuq nunami qurluarviinnik, imainnarmikluunniit 100 miitasnik havagviuviqhami. Piqanggittuq huradjaviliqidjutikkut, imarmiuniklu, avikturviuvimi kanatamiluunniit min'nguirviinnik Inuit nunagiyainnikluunniit hulaqutikpat pauwaqaqvichaannik nayugaqhaannik. In'ngilraangnitatigun aktumattaqtunik ihivriuqhiniaqtut July 2021 mi ihumaliuriami in'ngilraangnitanik piviqhaqariangginni ihuilidjutiniarman havaatimuun naunaiqlugitlu hanaqiyaulimaittaangginni. Havaaqhaq naunaiqhimayuq talvani Naunaitkutimi 1.Naunaitkut 1: Havaagiyaqhaq Uqhuqtuuup PauwaqaqvichaatHavaaqhaqNiriugiyauyuq Hivuniqhaa Iniqhimakpiaqlugu Nunatigut Iniktiqlugitlu In'ngilraangnitat Aktumattaqtunik IhivriuqhiniagutaataQiqaiyalirvia 2021 mit Qiqaiyalirvia 2022 Naunaittiaqhimayuq titirayaqhimayuq piliurnia Qitiqqautijuq 2022 mit Qiqaiyalirvia 2023Kaantraviliqinikkut niuvirnirmunluQitiqqautijuq 2023 mit Qiqaiyalirvia 2024Nappaktirinirmun Qitiqqautiyyuq 2024 mit Dissiappa 2025 (kitumi ukumi)Uktuutiniq HavaktitaulirniqUbluqtuhirnirmi 2026 mit Qiqaiyalirvia 2026 mutPauwaqaqvichaq tuniyauniaqtuq QEC kunni havaktiinnutQiqaijalirvia/Qitiqqautiyyuq 2026 21 ni havaktiqhanik naunaillakaffuktauyut piqaqtuqhanik havagviuviqhami nappaktiliqata. Aadjikkiilimaittuq nampait havaktiqhanik nappaktiliqata. Kaantraaktitauyuq ihumaliurniaqtuq kaffiuyaqhaannik havaktiqarniaqtuqhanik tikiutiyaami iniktirutaa havaaqhami. Kaantraaktitauyuq piyuqhat tikiutilugit piqaqtuqhanik Inuit havaktiqhanik tamainni nappaktiriligmik. QEC kunni haaktiit Uqhuqtuumi munariyaqqaqtut ubluq tamaat ubluq tamaat aulaviqhatigut pauwaqaqvianit. Ilaliutilgitlu havainnaktumik Pauwaqaqviam Atan'nguyamik, malruungnik havakaffuktunik

Ikayuqtiiuyunik. Havaktut hadja nuutiqhun'nguyut nutaamun pauwaqaqviannut iniktiqqat. Nutaanik havaktiqlimaittuq talvamit haffuma havaatigut. Amigaingniatigut nappaktirinirmun tamayait Havaaqhamut agyaqtauniaqtut umiakkut. Ilanggit tamayat naunaiqhun'nguyut talvani nunami agyaqtaulutikluunniit tingmitikkut naunaigutilugit aktilaanggit kaffiuyaqaqhaitigunlu. Kantraaktitauyuq munariyaqarniaqtuq naunaiqlugit tamayanik atuqtaqhanik nappaktiliqqa. Ilaliutiniagungnaqhiyuqlu aadlamik kaantraaktitauyuqhamik nunainnagiayayumi in'ngilragutikkut tamayanik talvunggaqtiaulutikluunniit nunallaamun umiakkut. Una havaaqhaq niriugiyauyuq piviqhaqariami Hamalatkunnut Uqhuqtuumi atuinnaktauyuktumik uqhuqyuanik nautqilimaittuniklu nalvaaqtauhimayumik, ikiqliyummirminalu puyuqmik anialailaqutaatanit. Pipkainaqtuqlu QEC kunnut nakuuhivalliadjutiqhaatigun pauwaqtautikkut nunallaami, ikayuqtauuhimmangginnaklugitlu amigaingniat nunaqaqhimayut, tikiutilugulu hivuniqhaliuqtaat aanniqhimaittumik, piqainnaktitilugit pauwaqhaannik nunallaami.

#### **Personnel**

Personnel on site: 21

Days on site: 580

Total Person days: 12180

Operations Phase: from 2024-04-01 to 2026-03-31

Operations Phase: from 2026-04-01 to 2046-03-31

Post-Closure Phase: from to

## Δεσμού Λόγω Στρατηγικής Ανάπτυξης

ΑΓ	Εθνικό Δικαίωμα Λειτουργίας στην Ελλάδα	Ρεύμα Επένδυσης	Εθνικό Δικαίωμα Λειτουργίας στην Ελλάδα	Εθνικό Δικαίωμα Λειτουργίας στην Ελλάδα	Εθνικό Δικαίωμα Λειτουργίας στην Ελλάδα
Lot A - Proposed Power Plant	Fuel and chemical storage	Municipal	The proposed lot is within the Municipality of Gjoa Haven and has been designated for industrial land use. A portion of the selected location is currently being used by Canadrill and XYZ Contractor as a storage location for sea cans, construction materials, unmarked drums, and drilling supplies/equipment.	An archaeological impact assessment will be carried out in summer 2021 to determine if archaeological sites are in potential conflict with the project and identify any necessary avoidance or mitigation measures	Within the Municipality of Gjoa Haven, on the east side of the community, outside the core community area. There are no natural drainages within 100 metres and no designated wildlife areas, marine protected areas, territorial or national parks, or Inuit Owned Lands in conflict with the proposed power plant location.
Lot A - Proposed Power Plant	Municipal and Industrial Development	Municipal	The proposed lot is within the Municipality of Gjoa Haven and has been designated for industrial land use. A portion of the selected location is currently being used by Canadrill and XYZ Contractor as a storage location for sea cans, construction materials, unmarked drums, and drilling supplies/equipment.	An archaeological impact assessment will be carried out in summer 2021 to determine if archaeological sites are in potential conflict with the project and identify any necessary avoidance or mitigation measures	Within the Municipality of Gjoa Haven, on the east side of the community, outside the core community area. There are no natural drainages within 100 metres and no designated wildlife areas, marine protected areas,

				territorial or national parks, or Inuit Owned Lands in conflict with the proposed power plant location.
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መር-ጥና	ዓስ	እርግዳብበት	ተዘጋጀውን ዓመት
ሻኑንታን	Hamlet Council	Hamlet of Gjoa Haven	2020-07-30
ሻኑንታን	Hamlet Council - Senior Administrative Officer	Hamlet of Gjoa Haven	2021-01-12
ሻኑንታን	Land Development, Senior Administrative Officer	Hamlet of Gjoa Haven	2021-05-18

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## Kitikmeot

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### Project transportation types

Transportation Type	የኢትዮጵያውያን	Length of Use
Air	Construction labour and some materials will be transported to the community by air	
Water	Construction equipment and materials will primarily be transported to the community by sea lift	

### Project accomodation types

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Diesel	fuel	1	0	0	Liters	Fuel will be required during construction for all equipment used on site. Fuel storage and handling during

						construction will be the responsibility of the contractor. Details regarding the location and volume of fuel storage and location of equipment refueling during construction are not known at this time. The contractor will be required to have a fuel management plan.
Diesel	fuel	2	90000	180000	Liters	Fuel will be used/stored at the power plant to run the generators. Fuel will be stored in above-ground horizontal fuel storage tanks.
solvent	hazardous	4	205	820	Liters	generator maintenance and operation
engine oil	hazardous	16	205	3280	Liters	generator maintenance and operation
propylene glycol	hazardous	1	2000	2000	Liters	power plant operations, heat transfer

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ΔL <sup>gb</sup> C <sup>gb</sup> ΔC <sup>gb</sup> C <sup>gb</sup> ΔL <sup>gb</sup> C <sup>gb</sup>	ΔL <sup>gb</sup> ΔC <sup>gb</sup> C <sup>gb</sup> ΔL <sup>gb</sup> C <sup>gb</sup>	ΔP <sup>c</sup> ΔC <sup>gb</sup> C <sup>gb</sup> ΔL <sup>gb</sup> C <sup>gb</sup>
0	To be determined by the Contractor.	To be determined by the Contractor.



## 4. Construction

### 4.1 Construction Waste

Category	Description	Quantity	Disposal Method	Comments
Municipal and Industrial Development	QEC will be responsible for disposal of construction waste.	unknown	Disposal of construction waste will be the responsibility of the contractor. If permitted by the Hamlet, some waste may be disposed of at the local landfill.	unknown
Municipal and Industrial Development	QEC will be responsible for disposal of construction waste.	unknown	During operations, QEC will dispose of domestic waste in the local landfill if permitted by the Hamlet. Waste that is not permitted in the local landfill will be shipped south as part of QECs annual waste shipment.	none
Fuel and chemical storage	QEC will be responsible for disposal of liquid waste.	2,460 litres	Amount of liquid waste during operation will vary annually. Waste fuel/glycol will be collected in drums, stored within secondary containment and shipped south for disposal.	none
Municipal and	QEC will be responsible for disposal of liquid waste.	200 litres	Amount of	none

Industrial Development	ΔδΔ<CD> <sup>a</sup> $\omega^{\gamma}$ FC <sup>c</sup>		non-combustible waste generated during operation will vary annually. Material will be stored in quatrex bags or other appropriate containment and shipped south for disposal.	
Municipal and Industrial Development	◀ <sup>b</sup> Cj <sup>c</sup> ΔδΔ<CD> <sup>a</sup> $\omega^{\gamma}$ FC <sup>c</sup>	unknown	Amount of non-combustible waste generated during construction is not known. Appropriate disposal of all non-combustible waste generated during construction will be the responsibility of the contractor.	none
Municipal and Industrial Development	▷◁ΔΔσ <sup>b</sup> $\omega\Gamma^c$ ◀□σ <sup>b</sup> ◀▷▷ <sup>a</sup> $\omega^{\gamma}$ FC <sup>b</sup> , $\omega^{\gamma}$ σ <sup>b</sup>	unknown	Disposal of overburden and soil/rock excavated for power plant to be determined by the contractor in communication with the Hamlet. Volume to be determined. If possible, some overburden material may be used to build up other	none

areas within the plant site.

Please refer to the attached Project Description (Table 4). Note: The environmental impact identified for permafrost, sediment and soil quality, air quality, and noise levels should be negative/mitigable for the construction and operation phases of the Municipal and Industrial Development activity. The selection seems to change automatically to negative/non-mitigable every time this page is viewed.

# **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**

Л°а 48014<sup>с</sup> 6мΔсCснDσ°л: мaD<sup>с</sup> 6мΔсJσ°л

Please refer to the attached Project Description.

Л°а 48014<sup>с</sup> 6мΔсCснDσ°л: ДL49бC9бσ°л

Please refer to the attached Project Description.

Л°а 48014<sup>с</sup> 6мΔсCснDσ°л: Δmс-nσ°j°лr°-ΛR°-Дkс-nσ°j°лr°

Please refer to the attached Project Description.

**Miscellaneous Project Information**

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Please refer to the attached Project Description.

**Cumulative Effects**

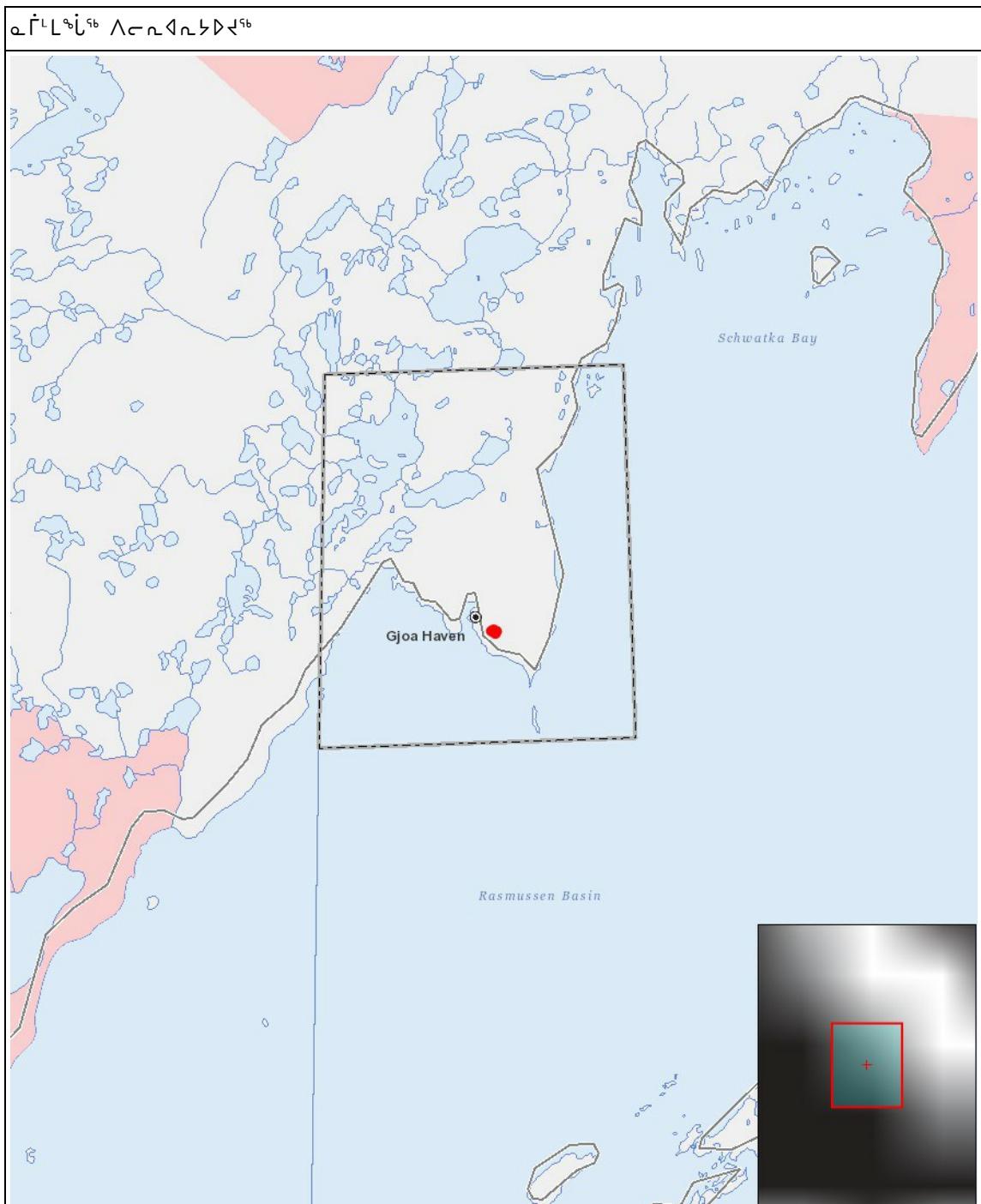
Please refer to the attached Project Description.

# Impacts

物理影响 | 地质与水文 | 气候与土壤 | 生物 | 社会经济

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		BIOMASS		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	
<b>物理影响</b>																																																	
Fuel and chemical storage	-	-	-	N	-	-	-	-	-	-	-	N	-	N	N	-	-	-	-	-	-	-	-	-	-	-	U	P	-	P	-																		
Municipal and Industrial Development	-	-	-	M	-	-	-	-	-	-	-	M	-	M	M	-	-	-	-	-	-	-	-	-	-	U	P	-	P	-																			
<b>地质与水文</b>																																																	
Fuel and chemical storage	-	-	-	N	-	-	-	-	-	-	-	N	-	N	N	-	-	-	-	-	-	-	-	-	-	-	-	P	-	P	-																		
Municipal and Industrial Development	-	-	-	M	-	-	-	-	-	-	-	M	-	M	M	-	-	-	-	-	-	-	-	-	-	-	-	-	-	P	-																		
<b>气候与土壤</b>																																																	
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(P = 可能影响, U = 未知影响, N = 无影响, M = 很可能影响, C = 极可能影响)



#### List of Project Geometries

1	polygon	Lot A - Proposed Power Plant
2	point	FourCorners-GjoaHaven_Option1_Location