NIRB Application for Screening #125295

Amended Land Use Permit application for Eureka Weather Station

Application Type:	New
Project Type:	Scientific Research
Application Date:	3/19/2018 2:55:21 PM
Period of operation:	from 0001-01-01 to 0001-01-01
Proposed Authorization:	from 0001-01-01 to 0001-01-01
Project Proponent:	Jean-Philippe Cloutier-Dussault Environment and Climate Change Canada 160 Chemin Tour-de-l'Isle Montreal Quebec H3C4G8 Canada Phone Number:: 514-283-4045, Fax Number::

DETAILS

Non-technical project proposal description

English: WHO The Eureka High Arctic Weather Station (HAWS) is located on the north side of Slidre Fiord, at the north-western tip of Fosheim Peninsula, Ellesmere Island. Eureka station coordinates are 79.59.41N and 85.48.48W.The Eureka HAWS site occupies a federal land reserve No. 1021 and encompasses an area of 1125 ha. The station has been operated by Environment Climate Change Canada since April 7th 1947. The primary purpose of the Eureka station is to collect weather information in order to produce public weather forecasts. In addition, the Eureka station provides support to the Arctic aviation community. Eureka also serves as a staging location for other science based activities in the High Arctic, various exploration projects, and some tourism. Environment Climate Change Canada provides the entire necessary infrastructure to support its activities at Eureka. This includes accommodations, fuel supplies, electrical power, transportation, aircraft landing strip, cooking operations, and water and sewage services.WHATThe existing aircraft runway at the Eureka HAWS requires upgrades and recapping with aggregate. In order to do this, a new quarry site is proposed to be developed approximately 15 kilometers from the airstrip. This quarry site will supply the aggregate needed to complete the airstrip upgrades. A new 9 kilometer access road connecting the airstrip to the quarry site is also proposed to be constructed. Crushed aggregate from the quarry will be used to build the road. As the road will need to cross Blacktop Creek, a water crossing is also planned to be constructed at this location. A temporary, 24 person camp will be set up near the quarry site. This camp will be decommissioned once the access road is constructed. One the road is constructed, workers will stay at existing accommodations near the HAWS. WHYThe runway upgrade and recapping is necessary to ensure the ongoing functionality of the current airstrip. The development of the quarry site, access road and water crossing are all required in order to proceed with the runway upgrade project. WHEREAll activities are proposed to occur within the vicinity of the Eureka HAWS. Runway upgrades will occur at the existing runway. The quarry site is proposed to be developed 15 kilometers east of the Eureka HAWs, towards West Remus Creek. The water crossing will be constructed at Blacktop Creek. WHENThe access road, temporary camp and water crossing are planned to be constructed in the summer of 2018. The camp will be decommissioned at the end of the summer. Upgrades to the airstrip will begin in summer 2019 and continue into summer 2020. Work will only occur during the summer months.

French: QUI La station météorologique de l’Extrême-Arctique Eureka est située du côté nord du fjord Slidre, à l’extrémité nord-ouest de la péninsule Fosheim sur l’île d’Ellesmere. Les coordonnées géographiques de la station Eureka sont les suivantes : 79.59.41N et 85.48.48O.Le site de la station Eureka se trouve sur la réserve terrestre no 1021 du gouvernement fédéral et couvre une superficie de 1 125 ha. La station est dirigée par Environnement et Changement climatique Canada (ECCC) depuis le 7 avril 1947.L’objectif principal de la station Eureka est de recueillir des renseignements météorologiques en vue de produire des prévisions météorologiques à l’intention du public. De plus, la station Eureka soutient la collectivité de l’aviation dans l’Arctique, en plus de servir à titre de lieu de rassemblement pour d’autres activités scientifiques dans l’Extrême-Arctique, pour divers projets d’exploration et pour des activités de tourisme.ECCC fournit l’ensemble de l’infrastructure nécessaire afin d’appuyer ses activités à la station Eureka, notamment l’hébergement, le ravitaillement en carburant, l’électricité, le transport, la piste d’atterrissage pour aéronefs, la cuisson des repas ainsi que les services d’eau et d’égouts. QUOI La piste existante pour aéronefs à la station Eureka doit être réaménagée et refaite avec des granulats. Pour ce faire, on propose d’utiliser une nouvelle carrière située à environ 15 kilomètres de la piste d’atterrissage. Cette carrière permettra d’obtenir les granulats nécessaires pour mener à bien les améliorations de la piste. On propose aussi de réaménager un chemin existant de 9 kilomètres pour en faire une route accessible dans n’importe quelle condition météorologique, et faire le lien entre la piste et la carrière. Des granulats concassés provenant de la carrière seront utilisés pour construire la route. Comme ce dernier devra traverser le ruisseau Blacktop, on prévoit construire une traverse à cet emplacement. Un campement pouvant accueillir 24 personnes sera mis en place à proximité de la carrière. Celui-ci sera démonté une fois que la route aura été construite. Les ouvriers pourront alors rester dans les installations d’hébergement existantes près de la station.POURQUOILe réaménagement de la piste et les travaux connexes sont requis afin d’assurer la fonctionnalité continue de la piste actuelle. La mise sur pied d’une carrière, d’une route d’accès et d’une traverse est requise afin de pouvoir aller de l’avant dans le cadre du projet de

réaménagement de la piste pour aéronefs. OÙToutes les activités proposées se dérouleront à proximité de la station Eureka. Les travaux de réaménagement de la piste auront lieu à l’emplacement de la piste actuelle. La carrière proposée se situe à 15 kilomètres à l’est de la station Eureka, vers le ruisseau Remus Ouest. La traverse sera construite sur le ruisseau Blacktop.QUAND On prévoit construire la route d’accès, le campement temporaire et la traverse à l’été 2018. Le campement sera démonté à la fin de l’été. On vise à ce que les travaux de réaménagement de la piste commencent à l’été 2019 pour se continuer à l’été 2020. Ceux-ci se déroulement uniquement pendant les mois d’été.

Inuktitut: ᑭᓇᔪᕇᑲᒥ ᖁᑦᑎᒃᑐᒥ ᓯᓚᓐᓂᐊᕐᕕᒃ ᐃᓂᖃᖅᑐᖅ ᓯᓚᐅᑐ ᑲᖏᖅᓘᑉ ᐅᐊᖕᓇᖅᐸᓯᐊᓂ, ᐹᓯᓐ ᓄᐳᐊᑕ ᓄᕕᐊᓂ, ᐅᒥᖕᒪᑦ ᓄᓈᑕ ᕿᑭᖅᑕᖕᒐᓂ. ᔫᑲᒥ ᓯᓚᓐᓂᐊᕐᕕᐅᑉ ᓇᓃᓐᓂᖕᒐᓄᑦ ᓇᓄᓇᐃᒃᑯᑕᖅᑐᖅ ᐆᒥᖕᒐ 79.59.41ᐅ ᐊᒻᒪᓗ 85.48.48ᐱ.ᔫᑲᒥ ᖁᑦᑎᒃᑐᒥ ᓯᓚᓐᓂᐊᕐᕕᒃ ᐃᓂᒋᔭᐅᔪᖅ ᒐᕙᒪᑐᖅᑲᒃᑯᑦ ᓄᓇᖁᑎᖕᒐᓄᑦ ᓈᓴᐅᑎᓕᖕᒥᒃ 1021–ᒥᒃ ᐊᖏᑎᒋᓂᖅᑲᖅᓗᓂᓗ 1125–ᓂᒃ ᓄᓇᐅᑉ ᐆᒃᑐᖅᓯᒪᓂᖕᒐᒍᑦ. ᓯᓚᓕᕆᔾᑯᓐᓄᑦ ᐊᐅᓚᑕᐅᖅᑲᑦᑕᖅᓯᒪᓂᑰᔪᖅ ᑕᐃᒪᙵᓂᑦ ᐄᐳᓪ 7, 1947-ᖑᑎᓪᓗᒍ. ᐱᔾᔪᑎᓪᓗᐊᑕᕆᔭᐅᔪᖅ ᔫᑲᒥ ᓯᓚᓐᓂᐊᕐᕕᒃ ᑲᑎᖅᓱᖅᑕᐅᓂᖏᑦ ᓯᓚᒧᑦ ᖃᐅᔨᒃᑲᐃᔾᔪᑏᑦ ᓯᓚᐅᑉ ᖃᓄᐃᓕᖕᒐᓂᐊᕐᓂᖕᒐ ᖃᐅᔨᒃᑲᖅᑕᐅᔪᓐᓇᕐᓂᐊᕐᒪᑕ ᑭᒃᑯᑐᐃᓐᓇᕐᓄᑦ. ᐊᒻᒪᒃᑲᓐᓂᖅ, ᔫᑲᒥ ᓯᓚᓐᓂᐊᕐᕕᒃ ᐃᑲᔪᖅᓱᖅᐸᒃᑐᖅ ᐅᑭᐅᖅᑕᖅᑐᕐᒥ ᖃᖕᒐᑕᔪᓕᕆᔨᐅᔪᓂᒃ. ᔫᕆᒃ ᐃᓂᒋᔭᐅᕐᑲᑦᑕᕐᒥᔪᖅ ᐊᓯᖏᓐᓄᑦ ᖃᐅᔨᓴᖅᓂᕐᒧᑦ ᖃᓄᐃᓕᐅᕿᑕᐅᕙᒃᑐᓄᑦ ᑐᙵᕕᖅᑲᖅᓗᑎᒃ ᖁᑦᑎᒃᑐᒥ, ᐊᔾᔨᒌᙱᑦᑐᓄᑦ ᕿᓂᕐᓂᕐᒧᑦ ᐱᓕᕆᐊᒃᓴᕐᓄᑦ, ᐊᒻᒪᓗ ᐳᓚᕋᖅᑐᓕᕆᓂᕐᒧᑦ. ᓯᓚᓕᕆᔾᑯᑦ ᑲᓇᑕᒥ ᐊᑐᐃᓐᓇᐅᑎᑦᑎᕙᒃᐳᑦ ᐱᑕᕐᑲᓇᐊᖅᑲᖅᑐᓗᒃᑖᕐᓂᒃ ᐊᖏᔫᑎᓂᒃ ᐃᑲᔪᖅᓱᖅᑕᐅᓂᖕᒐᓄᖅ ᖃᓄᐃᓕᐅᕐᓂᕆᕙᒃᑕᓂ ᔫᑲᒥ. ᑖᔅᓱᒧᖕᒐ ᐃᓚᒋᔭᐅᕗᑦ ᓯᓂᒃᑕᕐᕕᐅᕙᒃᑐᑦ, ᐅᖅᓴᕈᓐᓇᐅᑏᑦ, ᐆᒪᖅᑯᑎᖅᑲᕐᓂᕐᒧᑦ, ᐃᖏᕐᖁᔪᓕᕆᓂᖅ, ᒥᑦᑕᕐᕕᒃ, ᓂᖅᑯᐅᕐᓂᖅ, ᐊᒻᒪᓗ ᐃᒥᖅᑕᖅᑕᐅᓂᖅ ᑯᕕᖅᑕᖅᑕᐅᓂᕐᓗᖅ.ᓱᓇᐅᓪᓗᒥ ᒥᑦᑕᕐᕕᐅᑉ ᐊᖅᑯᑎᖕᒐ ᔪᓇᑲᒥ ᐋᖅᑭᒃᓱᐱᐊᓪᓚᒋᐊᖅᑲᓕᕐᒪᑦ ᐊᒻᒪ ᓄᓇᖕᒐ ᐃᓂᓪᓚᒋᐊᕐᑕᐅᓗᓂ. ᑕᒪᓐᓇ ᑲᔪᓯᓂᐊᕐᐸᑦ, ᓅᑖᒥᒃ ᐱᓕᕆᕝᕿᑲᓇᐊᕐᑲᖁᔭᕐᑐᑦ ᑐᑭᒃᖁᐅᑎᒃᑯᑦ ᐱᓕᕆᕝᕿᕐᓂᐊᕐᓗᑎᒃ 15ᑭᓇᒥᑐᕐᓂᑦ ᒥᑦᑕᕐᕕᒻᒥᑦ ᐅᖕᒐᓯᓐᓂᖅᑐᒥᒃ. ᑖᓐᓇ ᓄᓇ ᐱᔭᐃᕕᐅᒐᔪᖅ ᐱᔭᕇᖅᓯᒋᐊᖅᑲᓂᕐᒧᑦ ᐋᖅᑭᓱᕐᑕᐅᒋᐊᖅᑲᓂᖕᒐᓂᒃ ᒥᑦᑕᕐᕕᐅᑉ. ᐅᓪᓗᒥ ᐊᑐᕐᑐᑦ 9 ᑭᓚᒥᑐᕐᓂᒃ ᐊᖅᑯᑎᒥᒃ ᐋᖅᑯᑎᒋᔭᐅᕙᑦᑐᒥᒃ ᑕᐃᒪᖕᒐᓕᓛᖅ ᑎᒻᒥᕖᖅᑲᕕᒻᒧᑦ ᐊᒻᒪ ᓄᓇ ᑐᒃᓯᖃᕈᑕᐅᔪᖅ ᐱᓕᕆᕕᐅᔪᒪᓪᓗᓂ. ᓯᖅᑲᓪᓕᕐᓯᒪᔪᓂᒃ ᐅᔭᕋᕐᓂᒃ ᐊᑐᕋᔭᕐᑐᑦ ᐊᖅᑯᑎᓕᐅᕐᓗᑎᒃ. ᐊᒻᒪ ᐊᖅᖁᑎᒃ ᐊᑐᕐᑕᐅᔪᓐᓇᓕᐊᓂᒃ ᐃᑳᕐᑐᓄᑦ Blacktop Creek,ᒧᑦ, ᐸᕐᓇᒃᑕᐅᓯᒪᒻᒥᔪᖅ ᓴᓇᕕᐅᒐᔭᕐᓗᓂ. ᒪᓐᓇᐅᓂᐊᓂ, 24ᓂᒃ ᑕᒻᒪᕐᕕᖅᑲᔭᕐᑐᖅ ᐱᓕᕆᔪᓄᑦ ᖃᓂᒌᔪᓂ ᐱᔭᕆᕕᐊᑕ . ᑖᓐᓇ ᑕᒻᒪᕐᓯᒪᕕᒃ ᐊᑐᕐᑕᐅᓕᕋᔭᕐᑐᖅ ᐊᖅᑯᑎ ᓴᓇᔭᐅᔭᓈᖅᐸᑦ. ᑕᐃᒪᓕ ᐊᖅᑯᑎᖅᑲᓕᕐᐸᑦ, ᐃᖅᑲᓇᐃᔭᕐᑎᐅᔪᑦ ᓇᔪᕈᓐᓇᕋᔭᕐᐳᑦ ᓇᔪᕐᑕᒥᓂᒃ ᐱᓕᕆᕕᓐᓂ. ᑕᐃᒪᓕ ᐊᖅᑯᑎᒃ ᐱᔭᓈᖅᑕᐅᐸᑦ, ᐃᖅᑲᓇᐃᔭᕐᑏᑦ ᓅᒥᐊᕐᑲᖃᔭᖕᒥᑦᑐᑦ ᓇᔪᕐᑕᒥᓂᒃ ᓯᕗᓂᐅᓂᐊᕐᑐᒥ. ᓱᒧᑦᐊᖅᑯᑎᒃ ᐋᑭᒃᓱᕐᑕᐅᒥᐊᕐᓗᓂ ᐊᒻᒪ ᓄᓇᖕᒐ ᐃᓂᓪᓚᕆᐊᓪᓚᓪᓗᒍ ᑲᔪᓯᖕᒥᓐᓇᖁᓪᓗᒍ ᐊᑐᕐᑕᐅᓂᖕᒐ ᑕᐃᒪᖕᒐ ᐅᓪᓗᒥ ᒥᑦᑕᕐᕕᒪᒧᑦ. ᐱᓕᕆᕕᖅᑲᖅᑲᔭᕐᑐᑦ ᓄᓇᒥᒃ ᐊᖅᑯᑎᖅᑲᕆᐊᐊᖅ ᐊᒻᒪ ᐃᒪᒃᑯᑦ ᐃᑲᕿᓐᓇᕆᐊᖅ ᐱᓕᕆᒋᐊᕐᑐᕐᓂᕐᒧᑦ ᐅᓪᓗᒥ ᑲᔪᓯᑎᑕᐅᕙᓪᓕᐊᔪᒧᑦ ᐋᖅᑭᒃᓱᕐᑕᐅᓪᓗᓂ. ᓇᓂᑕᒪᕐᒥᒃ ᐱᓕᕆᐊᖑᔪᑦ ᖃᓂᒍᒪᔭᕐᑐᑦ ᔪᕆᑲᐅᑉ ᓴᓇᕕᐊᓄᑦ. ᐊᖅᑭᑎᖅᑲᓗᓂ ᐅᓪᓗᒥᒃ ᐊᖅᑯᑕᐅᔪᒥᒃ. ᓴᓇᕕᖅᑲᕈᒪᓂᕐᒧᑦ ᑐᒃᓯᖃᑕᐅᒪᓪ ᐱᓇᓱᕕᐅᔪᒪᓪᓗᓂ 15 ᑭᓚᒥᑐᕐᓂᒃ ᑲᓇᓐᓇᖕᒐᓂ ᔪᕆᑲᐅᑉ ᐱᓕᕆᕕᐊᓂ, West Remus Creek,ᒥ. ᐃᒪᒃᑯᑦ ᐃᑳᕈᑎᒃ ᓴᓇᔭᐅᒐᔭᕐᑐᖅ ᐅᕙᓂ. Blacktop Creek. ᖃᖕᒐᐊᖅᑯᑎᒃ, ᑕᒻᒪᕐᓯᒪᕕᐅᑲᐃᓐᓇᕐᑐᓪᓗ ᐊᒻᒪ ᐃᒪᒃᑯᑦ ᐃᑳᕈᑎᒃ ᐸᕐᓇᒃᑕᐅᓯᒪᔪᑦ ᐊᐅᔭᖕᒐᓂ 2018,ᒥ ᐱᒋᐊᕐᓗᑎᒃ. ᑕᓐᓇ ᐊᖅᑯᑎᒃ ᐃᒍᑦᑎᕐᑕᐅᒐᔭᕐᓗᓂ ᐊᐅᔭᐅᑉ ᐃᓱᐊᓂ. ᒥᑦᑕᕐᕕᒻᒥᒃ ᓴᓇᓂᖅ ᐱᒋᐊᖃᔭᕐᑐᑦ ᐊᐅᔭᖕᒐᓂ 2019 ᐊᒻᒪ ᑲᔪᓯᓗᑎᒃ ᐊᐅᔭᖕᒐᓂ 2020,ᒥ. ᐊᐅᔭᒃᑯᑦ ᐱᓇᓱᐊᕐᑲᑦᑕᖃᔭᕐᓗᑎᒃ.

Personnel

Personnel on site: 32

Days on site: 1460

Total Person days: 46720

Operations Phase: from 2018-05-31 to 2018-10-30

Operations Phase: from 2018-02-12 to 2022-06-30

Post-Closure Phase: from to

Activities

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Proposed Road	Access Road	Inuit Owned Surface Lands	Please refer to the Stantec Archeological Impact Assessment available on request.	Please refer to the Stantec Archeological Impact Assessment available on request.	None
Proposed Quarry Site	Quarry/Borrow pit	Inuit Owned Surface Lands	Please refer to the Stantec Archeological Impact Assessment available on request.	Please refer to the Stantec Archeological Impact Assessment available on request.	None

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Information is not available			

Authorizations

Indicate the areas in which the project is located

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Nunavut Water Board	Water licence #8BC-EUR1621	Active	2016-08-11	2021-08-10
Aboriginal Affairs and Northern Development Canada	Current Land Use Permit #N2017N0017	Active	2017-07-04	2022-07-03
Fisheries and Oceans Canada	Email from Fisheries and Oceans Canada approving the project. See attachements.	Active	2018-02-20	

Project transportation types

Transportation Type	Quantity	Proposed Use	Length of Use
Air	0	Eureka Airstrip	

Project accomodation types

Temporary Camp

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
See attached Annex B equipment list	1	1	Regular operations of Eureka Weather Station. Equipment may vary for the purpose of building the new road as well as quarry activities.
Excavation Equipment	32	Various	Excavation and Quarrying

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Diesel	fuel	9	60000	540000	Liters	Facilities Use
Diesel	fuel	1	800000	800000	Liters	Facilities Use
Gasoline	fuel	23	200	4600	Liters	Fuel for equipment
Aviation fuel	fuel	8	200	1600	Liters	Fuel for aircrafts
Gasoline	fuel	180	5000	900000	Liters	Fuel for excavation machinery at Remus Creek

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
4	Pumping from Station Creek	Station Creek

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Scientific/International Polar Year Research	Combustible wastes	40000 L	Incineration	Ashes deposited in landfill and capped
Camp	Combustible wastes	5000 lbs	Incinerated on site	None
Camp	Combustible wastes	35 000 gallons	contained in holding tanks and released to the environment pending receipt of acceptable weekly lab test results. Kitchen will be provided with grease traps	none
Scientific/International Polar Year Research	Greywater	9000 m3 / year	Decant into Slidre Fjord	Sewage lagoon sedimentation
Scientific/International Polar Year Research	Hazardous waste	varying	shipped off-site	Temporary site storage
Scientific/International Polar Year Research	Non-Combustible wastes	Varying	Burried and capped at landfill	Crushed and buried
Camp	Sewage (human waste)	4500 lbs	Pacto toilets will be provided to handle black water waste which will be incinerated on site	Residual ash waste from incinerator 400 lbs

Environmental Impacts:

All of the construction activities are of limited scope and duration and will cause temporary effects, with no residual effects and

therefore no cumulative effects. Operations effects will be similar to current operations at the main HAWS site in Eureka, as they do not greatly deviate from the site activities and daily operations which are currently ongoing (including site maintenance and facility use). As an active and operating site, the HAWS has to be compliant with a number of Federal and Territorial regulations. Adherence to regulations including conditions annexed to and forming part of Land Use Permit N2017N0017 (INAC, 2017) and the Fisheries and Oceans Canada (DFO) measures to avoid causing harm to fish and fish habitat including aquatic species at risk (DFO, 2018), implementation of existing mitigation obligations, in addition to those proposed within this addendum, will ensure that all of the Improvement Projects and associated activities do not cause significant adverse effects on the environment. ECCC hired a third party consultant to complete an environmental impact assessment report for this proposed project. The report concluded that with mitigation measures, there were no significant adverse effects. This assessment has been attached.

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

Description of Existing Environment: Physical Environment

Please refer to the attached Arcadis Environmental Impact Assessment for a complete description of environment. Eureka is located on Ellesmere Island, Nunavut, which is the northernmost island in the CanadianArctic Archipelago. The Arctic Ocean surrounds the Archipelago to the north and west, withGreenland to the east and the Canadian mainland to the south. Eureka itself is on the western sideof Fosheim Peninsula in northern Ellesmere Island. Eureka is located on the north side of SlidreFjord and surrounded to the northeast and northwest by ridges that rise about 600 m above meansea level.The Eureka HAWS is located in the Eureka Hills Ecoregion of the Northern Arctic Ecozone onEllesmere Island. The mean summer temperature of this ecoregion is 0.5°C and the mean wintertemperature is -30.5°C, with mean annual precipitation ranging from 50 to 150 mm(http://ecozones.ca/english/region/9.html). The Eureka Hills ecoregion is classified as having a higharctic ecoclimate. It has a sparse vegetative cover consisting of moss and mixed low-growing herbsand shrubs including purple saxifrage, arctic willow, kobresia, sedge, and arctic poppy(http://ecozones.ca/english/region/9.html). Topography is rolling and ridged with extensive areas oflow, dissected plateaus and gently rolling uplands cut by trench-like depressions forming drainagesystems that extend to the coast (http://ecozones.ca/english/region/9.html). Permafrost iscontinuous, with medium ice content.

Description of Existing Environment: Biological Environment

Please refer to the attached Arcadis Environmental Impact Assessment for a complete description of environment. The dominant soils are Regosolic Static Cryosols and Orthic Turbic Cryosols, which have developedon colluvial, alluvial, and marine deposits (http://ecozones.ca/english/region/9.html). Wildlife in thisecoregion includes muskox, arctic hare, arctic wolf, caribou, seal, polar bear, ptarmigan, andseabirds.At Black Top Creek and West Remus Creeks, as well as along the roadway where the proposedroad construction is to take place, there is sparse vegetative cover consisting of moss and mixedlow-growing herbs and shrubs including purple saxifrage, arctic willow, kobresia, sedge, and arcticpoppy. Note that Blacktop and West Remus Creeks are minimal streams which consist of summersnow melt/run off (freshet) (PSPC, 2018).

Description of Existing Environment: Socio-economic Environment

Please refer to the attached Arcadis Environmental Impact Assessment for a complete description of environment. While Eureka has no permanent residents, a number of research and operational staff rotate throughthe HAWS facility. The closest Inuit community is the hamlet of Grise Fjord, located 400 km southof Eureka at the southern end of Ellesmere Island.

Identification of Impacts and Proposed Mitigation Measures

Please refer to the attached Arcadis Environmental Impact Assessment for a complete list of potential environmental effects and proposed mitigation measures.

Cumulative Effects

Please refer to the attached Arcadis Environmental Impact Assessment for a complete cumulative effects assessment. In summary, no cumulative environmental effects are anticipated from the HAWS Improvements Project.

Impacts

Identification of Environmental Impacts

Construction																									
Quarry/Borrow pit		-	-	N	-	N	-	-	N	N	-	N	N		N	N	N	-	-		-	-	-	-	-
Access Road		-	N	N	-	N	N	-	N	N	-	N	N		N	N	N	N	-		P	-	-	-	-
Operation																									
Quarry/Borrow pit		-	-	-	-	N	N	-	-	-	-	N	N		N	-	N	-	-		-	-	-	-	-
Access Road		-	-	N	-	-	N	-	-	-	-	N	-		N	N	N	N	-		P	-	-	-	-
Decommissioning																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

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