



NIRB Application for Screening #125583

Kahuna Gold Property

Application Type:	New
Project Type:	Mineral Exploration
Application Date:	2/18/2021 3:07:55 PM
Period of operation:	from 0001-01-01 to 0001-01-01
Proposed Authorization:	from 0001-01-01 to 0001-01-01
Project Proponent:	Martin Solstice Gold Corporation 505-800 WEst Pender St Vancouver BC BC V6C2V6 Canada Phone Number:: 4163013985, Fax Number::

Non-technical project proposal description

French: N/A

[illegible]

Inuinnaqtun: N/A

Post-Closure Phase: from to

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Solstice_Kahuna_Gold_Drilling_Area_n83z15_20210119	Drilling	Crown	Past work on the Property included prospecting, geological mapping, geochemical sampling, geophysical surveys and a six-hole diamond drilling program. Previous Solstice field programs were either supported out of the Kodiak Copper Corp. ("Kodiak," formerly Dunnedin Ventures Inc.) Kahuna Camp (2018), Rankin Inlet (2019) or from a small temporary fly camp (2020).	Kodiak Copper Corp. (formerly Dunnedin Ventures Ltd.) commissioned Golder to complete Archaeological Reconnaissance Studies over selected exploration areas in 2016 and 2018. Additionally in 2018, the current Kahuna Camp area and the area of the proposed Solstice camp were also surveyed. In 2019 Solstice commissioned Golder to complete an additional Archaeological Reconnaissance Study over specific exploration drill targets. Future Archaeological studies will be carried out as required.	The Property is approximately 10 km southwest of Igluligaarjuk (Chesterfield Inlet) and 30 km northeast of Kangiqliniq (Rankin Inlet).
Solstice_Kahuna_Gold_Drilling_Area_n83z15_20210119	Drilling	Inuit Owned Surface Lands	Past work on the Property included prospecting, geological mapping, geochemical sampling, geophysical surveys and a six-hole diamond drilling program. Previous Solstice field	Kodiak Copper Corp. (formerly Dunnedin Ventures Ltd.) commissioned Golder to complete Archaeological Reconnaissance Studies over selected exploration areas in 2016 and 2018. Additionally in 2018, the current Kahuna Camp area and	The Property is approximately 10 km southwest of Igluligaarjuk (Chesterfield Inlet) and 30 km northeast of Kangiqliniq (Rankin Inlet).

			programs were either supported out of the Kodiak Copper Corp. ("Kodiak," formerly Dunnedin Ventures Inc.) Kahuna Camp (2018), Rankin Inlet (2019) or from a small temporary fly camp (2020).	the area of the proposed Solstice camp were also surveyed. In 2019 Solstice commissioned Golder to complete an additional Archaeological Reconnaissance Study over specific exploration drill targets. Future Archaeological studies will be carried out as required.	
Proposed_Solstice_Camp_Location_n83z15_20200119	Camp	Crown	Past work on the Property included prospecting, geological mapping, geochemical sampling, geophysical surveys and a six-hole diamond drilling program. Previous Solstice field programs were either supported out of the Kodiak Copper Corp. ("Kodiak," formerly Dunnedin Ventures Inc.) Kahuna Camp (2018), Rankin Inlet (2019) or from a small temporary fly camp (2020).	Kodiak Copper Corp. (formerly Dunnedin Ventures Ltd.) commissioned Golder to complete Archaeological Reconnaissance Studies over selected exploration areas in 2016 and 2018. Additionally in 2018, the current Kahuna Camp area and the area of the proposed Solstice camp were also surveyed. In 2019 Solstice commissioned Golder to complete an additional Archaeological Reconnaissance Study over specific exploration drill targets. Future Archaeological studies will be carried out as required.	The Property is approximately 10 km southwest of Igluligaarjuk (Chesterfield Inlet) and 30 km northeast of Kangiqliniq (Rankin Inlet).

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
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Chesterfield Inlet	Barnie Aggark	Mayor	2020-12-21
Chesterfield Inlet	David Kattegatsiak	Economic Development Officer	2020-11-13
Chesterfield Inlet	John Ivey	Chief Executive Officer	2020-11-13
Rankin Inlet	Morag Macpherson	Senior Administrative Officer	2020-06-26

Authorizations

Indicate the areas in which the project is located:

Kivalliq

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Aboriginal Affairs and Northern Development Canada	Crown-Indigenous Relations and Northern Affairs Canada (“CIRNAC”) Land Use Permit, N2018C0020	Active	2019-02-02	2024-02-01
Nunavut Water Board	Nunavut Water Board Water (“NWB”) Licence, 2BE-KGP1823	Active	2018-12-18	2023-12-17
Kivalliq Inuit Association	Kivalliq Inuit Association (“KIA”) Land Use License KVL318B01 (renewal application currently under review).	Active	2019-02-02	2021-02-01
Kivalliq Inuit Association	Kivalliq Inuit Association (“KIA”) Land Use License KVR18F02 (renewal application currently under review).	Active	2019-03-13	2021-02-01

Project transportation types

Transportation Type	Proposed Use	Length of Use
Air	Fixed Wing and Helicopter	
Land	Winter Trail	

Project accomodation types

Permanent Camp

Other,

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Fixed Wing Aircraft	1	Twin Otter or similar	Transport equipment and personnel to camp.
Helicopter	1	A-star or similar	Transport equipment , supplies and personnel.
Generator	4-6	Honda 5 kW or similar	Provide electricity for drilling.
Generator	1-2	Powerline KS1400-T3 (14 kVA) or similar	Provide electricity to camp.
Water Pump	1-2	2.5-5 HP gas pump or similar	Camp water supply.
Water pump	2-3	Kubota KF40 or similar	Drilling water supply.
Dual chamber controlled air incinerator	1	Inciner8 I8-20S or similar	Incineration of waste.
Snowmobile	2	350cc	Transportation - crews, supplies & equipment.
All Terrain Vehcile	1-2	350cc	Transportation - crews, supplies & equipment.
Small Aluminum Boat	1	14-16 ft utility boat	Lake bottom bathymetry survey and transportation.
Caterpillar Challenger 65s (with steel sleds)	2	Challenger 65s (or similar)	Mobilize/transport equipment and supplies.
Drill Rig (Diamond or RC)	1-2	Heli-portable	Drilling

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Aviation fuel	fuel	145	205	29725	Liters	Fuel for aircraft.
Gasoline	fuel	10	205	2050	Liters	Fuel for ATVs and generators.
Propane	fuel	20	100	2000	Lbs	Fuel for stove and hot water heater.
Oil	hazardous	5	4	20	Liters	Oil for ATVs and generators.
CaCl2	hazardous	1500	50	75000	Lbs	Drilling.
Waste oil	hazardous	1	5	5	Liters	Used oil unable to be repurposed/burnt in a waste oil burner.
Bleach	hazardous	2	2	4	Liters	Cleaning.
Various cleaning supplies	hazardous	20	1	20	Liters	Cleaning products such as Lysol, Clorox, Windex.
Hydraulic oil	hazardous	50	20	1000	Liters	Drilling. Majority of oil is on site in the event of unforeseen mechanical failure.
Gun grease	hazardous	1	1	1	Liters	Lubrication
Diesel	fuel	145	205	29725	Liters	Fuel for generators and drills.

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
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299	Electrically powered submersible pump with a fine mesh screen on the intake to prevent fish entrapment.	Drilling: numerous un-named sources proximal to drilling locations. Camp: un-named lake proximal to camp.
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Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Camp	Combustible wastes	Maximum Camp Size of 40 people	Solstice Camp will use a batch fed dual-chamber controlled air incinerator to dispose of combustible solid wastes. All combustible wastes will be burned in accordance with applicable federal and territorial regulations and the Nunavut Department of Environment Guideline for the Burning and Incineration of Solid Waste. Residual ash will be backhauled and disposed of appropriately.	See attached Waste Management Plan for additional details on individual waste types.
Drilling	Greywater	289 m3/day	Recirculation and filtration equipment will be used to minimize the amount of water used and additives released into the environment. Secondary containment for additives will be placed around the hole. Any residual drill fluids will be contained in sumps or an equivalent natural depression, preventing the drill fluids from entering water bodies directly and allow for slow infiltration into the soil. Sumps will be positioned a minimum of 31 m from the normal high-water mark of any water body. Sumps will be positioned down slope from the drill collar in such a manner that runoff flows into the sump.	See attached Waste Management Plan for additional details on individual waste types.
Camp	Greywater	10 m3/day	Camp greywater will be stored and treated in an excavated sump, which will allow for slow infiltration into the soil and will be located at least 31 m away from the ordinary high-water mark of a water body. Filters and grease traps	See attached Waste Management Plan for additional details on individual waste types.

			will be installed on kitchen drains to ensure solid food wastes do not enter the sumps attract wildlife. The sump and pipe will be inspected at regular intervals for leaks or overflow.	
Drilling	Hazardous waste	Minimal	Any hazardous waste produced will be placed in sealed containers, labeled, and stored within secondary containment such as “Arctic Insta-Berms,” or similar, until they can be reused or backhauled for recycling or disposal. Upon seasonal shutdown all hazardous wastes will be backhauled and disposed of properly to a registered hazardous waste receiver.	See attached Waste Management Plan for additional details on individual waste types.
Camp	Non-Combustible wastes	Variable	Labeled bins will be provided at various locations around camp and at the active drill site for each type of non-combustible waste. Effort will be taken to reuse or repurpose any materials before disposal is considered. Non-combustible wastes will be backhauled on an ongoing basis throughout the program and upon seasonal shutdown.	See attached Waste Management Plan for additional details on individual waste types.
Camp	Sewage (human waste)	Maximum Camp Size of 40 people	Pacto toilets will be used at Solstice Camp. All Pacto bags will be incinerated on site in a batch fed dual-chamber controlled air incinerator. Solstice will ensure that the incinerator is a model that is specifically designed to be capable of incinerating this type of waste. Incineration of sewage will occur on a regular schedule. Upon seasonal shutdown, all sewage will be incinerated, and the Pacto structure winterized. Residual ash will be backhauled and disposed of	See attached Waste Management Plan for additional details on individual waste types.

		appropriately.	
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Environmental Impacts:

Solstice is applying for an amendment to their Nunavut Water Board Water (“NWB”) Licence, 2BE-KGP1823, and Crown-Indigenous Relations and Northern Affairs Canada (“CIRNAC”) Land Use Permit, N2018C0020, to establish a 40-person camp on the Property. The water licence amendment will also include an increase in the water allowance from 200 m³/day (for drilling) to 299 m³/day (10 m³/day for the new camp and 289 m³/day for drilling). Solstice is applying to the Kivalliq Inuit Association (“KIA”) to renew Inuit Land Use Licenses KVL318B01 and KVRW18F02, which authorize prospecting, exploration, drilling and use of the Kahuna Winter Road. The predicted environmental impacts of the addition of the camp and increase in water use are anticipated to be negligible and mitigatable.

Additional Information

SECTION A1: Project Info

The overland winter trail is currently permitted under KIA Licence KVRW18F02. Use of the winter trail is expected to have minimal environmental impacts. The route was chosen to utilize rivers and lakes where possible and avoids sensitive areas.

SECTION A2: Allweather Road

SECTION A3: Winter Road

Utilization of the trail will only occur during frozen conditions to ensure minimal impacts to land, water, flora and fauna. Should any damage occur from use of the winter trail remediation, which may include re-vegetation and re-contouring, will occur during the summer months. During use of the trail spill kits will be present to respond to any environmental issues.

SECTION B1: Project Info

Describe the type of mineral resource under exploration: Gold

SECTION B2: Exploration Activity

Indicate the type of exploration activity: Exploration drilling Geophysical work (ground and/or air) Other – Staking, prospecting, mapping, lake bottom bathymetry Soil/till sampling On land drilling (indicate drill type) – Diamond or RC Drilling On ice drilling (indicate drill type) – Diamond or RC Drilling

SECTION B3: Geosciences

Indicate the geophysical operation type of geophysical operation: Magnetic Electromagnetic geophysical operation Geological Mapping All exploration will be strictly confined to the Kahuna Gold Property Boundary and all drilling to the area identified as Exploration Activities Including Drilling as illustrated in the Project Extent, Drilling Area and Proposed Camp Location figure. Aircraft will only fly lower than 610 m when dropping off and picking up field crews or moving the drill. When low altitude flights are necessary, such as deploying field personnel, all efforts will be taken to avoid wildlife, dwellings, and nests. Pilots will be instructed not to land where wildlife is present unless it is an emergency situation. If a landing occurs for any reason in the presence of wildlife, it will be documented and submitted to CIRNAC, NWB and KIA as part of the of the Kahuna Gold Property Annual Report.

SECTION B4: Drilling

Solstice proposes annual exploration programs which will include rock, soil, and till geochemical sampling, geological mapping, ground and/or airborne geophysical surveys and diamond or reverse circulation (“RC”) drilling up to 20,000 m. The programs may commence as early as February, beginning with overland mobilization of equipment and supplies along Solstice’s permitted overland Kahuna Winter Trail from Rankin Inlet to the Property using Caterpillar Challengers (or equivalent) and cargo sleds. Drilling could commence mid-March to mid-May to test targets below lakes with drilling of land targets commencing mid-June through September. Ground based prospecting and sampling activities would follow in June once the land is free from snow and the Property surface is fully accessible.

SECTION B5: Stripping

N/A

SECTION B6: Underground Activity

N/A

SECTION B7: Waste Rock

N/A

SECTION B8: Stockpiles

N/A

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

Proximity to protected areas, including: i. designated environmental areas, including parks; The Property is not located within any federal or territorial Protected Areas. The nearest Park to the Property is the Iqalugaarjuup Nunanga Territorial Park, located 20 km southwest of the Property. ii. heritage sites; There are no known heritage sites on the Property. iii. sensitive areas, including all sensitive marine habitat areas; The Property is approximately 10 km southwest of Igluligaarjuk (Chesterfield Inlet) and 30 km northeast of Kangiqliniq (Rankin Inlet). The Property is covered by an areas of Char abundance, high mineral potential and traditional land use as identified by the DNLUP shapefiles, therefore all exploration activity planning will take into account any possible impacts to the cultural value, including subsistence harvesting, of the area and quality of water. iv. recreational areas; There are no known recreational areas on the Property. v. sport and commercial fishing areas; There

are no known sport and commercial fishing areas on the Property.vi.breeding, spawning and nursery areas; There are no known breeding, spawning and nursery areas on the Property.vii.known migration routes of terrestrial and marine species;The Property is not within any migration routes.viii.marine resources; Marine resources will not be affected by this project.ix.areas of natural beauty, cultural or historical history; All natural, cultural or historical resources will be respected.x.protected wildlife areas; and There are no protected wildlife areas within the project boundary of which the company is aware.xi.other protected areas. There are no other protected areas within the project boundary of which the company is aware.Eskers and other unique landscapes (e.g. sand hills, marshes, wetlands, floodplains).Solstice considers all landscapes to be critical to the natural environment and as such all areas of the Property will be treated with care and respect. Evidence of ground, slope or rock instability, seismicity. There is no evidence of the ground, slope, or rock instability or seismicity within the boundary of the Property of which the company is aware.Evidence of thermokarsts. There is no evidence of the presence of thermokarsts within the boundary of the Property of which the company is aware.Evidence of ice lenses. There is no evidence of the presence of ice lenses within the boundary of the Property of which the company is aware.Surface and bedrock geologyThe Kahuna Gold Property lies within the west trending metasedimentary paragneiss belt consisting of metasedimentary rocks including semipelite/psammite with garnet + biotite +/- aluminosilicate schist/paragneiss and the weakly to well foliated, biotite-muscovite Leucogranite unit made up of biotite-muscovite Leucogranite, in part contains xenocrystic garnet and includes layered tonalite gneiss and garnet-kyanite-sillimanite schist paragneiss.Topography.The Kahuna Gold Property is located within the Maguse River Upland Ecoregion within the Southern Arctic Ecozone. This ecoregion is an area that is often referred to as the “barren lands.” This name reflects the largely treeless nature of the Ecozone as most of it lies to the north of the tree line. Glaciation released a huge volume of soil and rocks debris creating a bouldery moraine and long sinuous eskers which may extend up to 100 km. Occurring less frequently are outwash aprons of crudely sorted sand and gravel and raised beaches along pre-existing shorelines. The resulting undulating terrain is studded with abundant interconnected lakes and ponds. Local relief varies between 80 and 240 m above sea level.Permafrost (e.g. stability, depth, thickness, continuity, taliks).Permafrost occurs continuously throughout the Southern Arctic Ecozone. Lying sometimes just a few centimeters below the surface, permafrost acts as a dam that stops the downward flow of water. Even though there is little precipitation, the soils are often waterlogged or frozen. Repeated freezing and thawing of these soils create surface features such as cell like polygons, bulging hummocks and bare mud boils where the soil is so active that no plants can take root. Intense frost heaving often splits apart the underlying bedrock and forces large angular boulders to the surface. Occasionally emerging through the thick mantle of glacial till is the Canadian Shield.Sediment and soil quality.Flat areas are dominated by felsenmeer and cryoturbated soils. Cryoturbation produces features such as frost boils, ice-wedge polygons, stone nets, and stone stripes.Hydrology/ limnology (e.g. watershed boundaries, lakes, streams, sediment geochemistry, surface water flow, groundwater flow, flood zones).Numerous lakes occur on the Property. Of special interest to the communities of Chesterfield Inlet and Rankin Inlet is the Char bearing habitat of Josephine Lake located in the northeast of the Property. Josephine Lake is the only lake within the Property which is deep enough to supply fresh water during the winter months and is one of only a few lakes within the Property that does not freeze to bottom. The Property is not located within any community watersheds or flood zones. The project should not have any effect on watersheds, lakes, streams, sediment geochemistry, surface water flow, or groundwater flow.Tidal processes and bathymetry in the project area (if applicable).N/AWater quality and quantity.Water quality on the Property appears to be abundant and pristine. All efforts will be made to keep water quality as close to pristine as possible.Air quality.Air pollutants will be kept to an absolute minimum.Climate conditions and predicted future climate trends.The area has a continental climate with low levels of precipitation and a wide temperature range. Summers are typically brief with long daylight hours, whereas winters are long and extremely cold with average temperatures below -30°C.Noise levels.Noise levels will be kept to an absolute minimum.Other physical Valued Ecosystem Components (VEC) as determined through community consultation and/or literature review. None known at this time.

Description of Existing Environment: Biological Environment

Vegetation (terrestrial as well as freshwater and marine where applicable).Vegetation within the Southern Arctic Ecozone is adapted to short, cold growing seasons; high persistent winds and acidic soils over permafrost. The Ecozone is bounded to the south by the tree line, a broad ecological division between the taiga forest and the treeless arctic tundra. Low precipitation and extremely low winter temperatures are among the factors that discourage tree growth. The near continuous blowing of cold, dry winds and the presence of permafrost also restricts plant growth. Low shrubs such as the Shrub Birch, Willow and Labrador Tea are well adapted to these conditions. On the most exposed sites, low shrubs give way to mats of lichens, mosses, and ground-hugging shrubs such as Mountain Cranberry and Least Willow.Wildlife, including habitat and migration patterns.Low biological productivity, a short growing season, and extremely cold long winters are demanding on wildlife so those found in the area are well adapted to arctic living. Wildlife includes Muskox, Caribou, Wolf, Barren Land Grizzly Bear, Polar Bear (Coastal Regions), Arctic Fox, Wolverine, Arctic Ground Squirrel and Brown Lemming. The Kahuna Gold Property is within range of the Beverly and Qamanirjuaq Caribou and Lorillard herds, but is not within their traditional calving grounds.Birds, including habitat and migration patterns.According to Key Migratory Bird Terrestrial Habitat Sites in the Northwest Territories and Nunavut (2008), published by the Canadian Wildlife Service, there are no critical migratory paths or nesting areas within the Kahuna project area.Species of concern as identified by federal or territorial agencies, including any wildlife species listed under the Species at Risk Act (SARA), its critical habitat or the residences of individuals of the species.Peregrine Falcon, anatum/tundrus complex, Red-necked Phalarope and Short-eared owl, other Raptors—Special Concern as per the Species at Risk Act (“SARA”). Grizzly Bear, Polar Bear, Wolverine – Special concern as per the Committee on the Status of Endangered Wildlife in Canada (“COSEWIC”).Aquatic (freshwater and marine) species, including habitat and migration/spawning patterns.Freshwater aquatic species common to the Kivalliq Region of Nunavut include Arctic Char, Lake Trout and Arctic Grayling. The network of lakes and rivers provide abundant habitat for fish.Other biological Valued Ecosystem Components (VEC) as determined through community consultation and/or literature review.

None known at this time.

Description of Existing Environment: Socio-economic Environment

Proximity to communities. The Property is approximately 10 km southwest of Igluligaarjuk (Chesterfield Inlet) and 30 km northeast of Kangiqliniq (Rankin Inlet). Archaeological and culturally significant sites (e.g. pingos, soap stone quarries) in the project (Local Study Area) and adjacent area (Regional Study Area). Kodiak Copper Corp. (formerly Dunnedin Ventures Ltd.) commissioned Golder to complete Archaeological Reconnaissance Studies over selected exploration areas of the Property in 2016 and 2018. Additionally in 2018, the current Kahuna Camp area and the area of the proposed Solstice camp were also surveyed. In 2019 Solstice commissioned Golder to complete an additional Archaeological Reconnaissance Study over specific exploration drill targets. The coordinates of each historically documented site and feature will be incorporated into future project planning by Solstice to enable appropriate management and avoidance of known archaeological sites during exploration activities. Future Archaeological studies will be carried out as required. Palaeontological component of surface and bedrock geology. The company is currently not aware of any palaeontological sites on the Property. Land and resource use in the area, including subsistence harvesting, tourism, trapping and guiding operations. The Property is in an area of traditional land use as identified by the DNLUP shapefiles, therefore all exploration activity planning will take into account any possible impacts to the cultural value, including subsistence harvesting, of the area and quality of water. Local and regional traffic patterns. This Project is not anticipated to have any affect on local or regional traffic patterns. Human Health, broadly defined as a complete state of wellbeing (including physical, social, psychological, and spiritual aspects). This project is not anticipated to have any affect on human health. Other Valued Socioeconomic Components (VSEC) as determined through community consultation and/or literature review. The Property is located in an area of Char abundance and high mineral potential as identified by the DNLUP shapefiles.

Miscellaneous Project Information

For additional information see: Kahuna Gold Property Non-Technical Summary - English
Kahuna Gold Property Non-Technical Summary - Inuktitut
Kahuna Gold Property Abandonment and Restoration Plan
Kahuna Gold Property Environmental and Wildlife Management Plan
Kahuna Gold Property Fuel Management Plan
Kahuna Gold Property Emergency Response Plan
Kahuna Gold Property Spill Prevention and Response Plan
Kahuna Gold Property Waste Management Plan

Identification of Impacts and Proposed Mitigation Measures

PHYSICAL AND BIOLOGICAL Designated Environmental Areas: There are no known protected areas in the vicinity of the Property. **Ground Stability:** The proposed drilling program and low impact regional exploration activities are not likely to cause any impact on the permafrost or stability of the ground. **Permafrost:** Permafrost has the potential to be impacted by camp activities. Mitigation measures to reduce the impact include limiting the amount of vegetation disruption to ensure proper shade coverage and reduction in the potential for ground thaw and subsidence. Areas that have patterned ground, clay-rich soil and or wetlands will be avoided. **Surface Water Hydrology:** Surface water hydrology can be disrupted from removal of water. Water will be drawn for drilling from numerous waterbodies within the Property Boundary and water for camp will be from an waterbody adjacent to the camp. Care will be taken to ensure that water is drawn from bodies with sufficient capacity in order to avoid impact on waterbody level or watercourse flow. Water use will not exceed 299 m³ per day (289 m³/day for drilling and 10 m³/day for camp use), which is not anticipated to impact hydrology or aquatic habitat. Drilling water pumps typically use a 1" inside diameter suction hose on the diesel pump with a fine screen on the foot valve. For drilling, a fiberglass window screen with a nominal opening size of less than 1/16" is also generally wrapped around the foot valve to prevent the intake of silt and sand into the pump, which can cause considerable damage to the pump chambers. In addition, it is common practice for the drilling contractor to place the foot valve of the intake hose in a perforated 20 L pail, which further protects against harmful materials and fish being entrained into water intake hoses. **Water Quality:** Surface water quality may be affected by fuel and toxic material spills and improper greywater disposal. Drilling will utilize recirculation and filtration systems to minimize loss of water and drill additives. Nonhazardous and bio-degradable drilling fluids will be used at all times where ever possible. Drilling fluids will be directed to a properly constructed sump or an appropriate natural depression, at least 31 m from the ordinary high-water mark of any waterbody so direct flow into a waterbody is not possible and no additional impacts are created. If available, coarse gravel will be placed in the bottom of the sump to provide filtration, and supports will be built on the sides to prevent slumping. When full, sumps will be covered with enough material to allow for future ground settlement. See the Kahuna Gold Property Waste Management Plan for additional information. All fuel and other hazardous materials located at the camp, drill sites or remote fuel caches will be stored within "Arctic Insta-Berms", or similar products, for secondary containment. These types of berms utilize chemical and fire resistant fabric (generally polyurethane coated nylon or vinyl coated polyester material) designed for extreme arctic temperatures and puncture resistance. "RainDrain" or similar hydrocarbon filtration systems will be used to safely remove any water collected inside secondary containment berms, and as a safeguard against any potential overflows of contaminated water. All hazardous materials will be used, stored or transferred a minimum distance of 31 m from the normal high water mark of any water body. Spill kits and firefighting equipment will be strategically located near where any hazardous materials are stored, used or transferred, including the camp, drill sites, remote fuel caches and in the helicopter. **Climate Conditions:** The size and duration of the proposed drilling and exploration programs is not likely to cause any impact on climate conditions. **Eskers and Other Unique or Fragile Landscapes:** Solstice considers all landscapes to be critical to the natural environment of the area and will

treat with care and respect. Any seemingly unique and fragile landscapes will be avoided.

Surface and Bedrock Geology: The size and duration of the proposed drilling and exploration programs will not cause any impact on surface or bedrock geology. The regional exploration and Diamond drilling programs will help to add new information about the geology of the area.

Sediment and Soil Quality: Soil quality can be impacted from spills of fuel and other materials, waste discharge and drilling. Preventative measures include appropriate and approved storage locations and containers with secondary containment. All fuel and other hazardous materials will be at least 31 m from the ordinary high-water mark of any waterbody. Refueling will be done with precision and appropriate due-diligence will be taken. Drums and hoses will be inspected regularly for leaks and pans or absorbent pads will be placed below fuel transfer areas and stationary machinery.

Tidal Processes and Bathymetry: N/A

Air Quality: Impacts on air quality can result from discharge of exhaust from helicopters, drilling operations and diesel generators. Given the remote location with lack of air quality issues which currently exists within the project location, the short duration and small scope of activities are not expected to result in any measurable air quality impacts.

Noise Levels: Noise can result from the use of drills, generators, helicopters and other vehicles, which can disturb wildlife. Mitigation measure include, but not be limited to: helicopter avoidance of any birds nests, bear and wolf dens, waterfowl and shorebird staging areas during critical seasons and near large mammals. In addition drill activities and associated work will cease if caribou cows and/or calves appear nearby.

Vegetation and Wildlife Habitat: Vegetation can be potentially be disturbed by drilling activities. During drilling, If possible, any topsoil required to be removed for sumps will be kept separate from the sub-surface materials excavated. During drill site reclamation the subsurface material stockpiles will be pushed back into the excavated sites as close to the natural contouring as possible with the topsoil placed on top.

Wildlife, Birds and Aquatic Species (including habitat and migration patterns): Wildlife can be displaced through loss of habitat, disturbed by noise (helicopter, generators, drilling) or human interaction. Habitat loss can result in displacement of animals. Disturbance can cause stress-induced health problems and mortality. Physical fish habitat (stream beds) could be impacted from drill activity. Water extraction at the camp and drill site, as well as water quality impacts (resulting from fuel or other toxic materials) can ultimately affect fish populations. Mitigation procedures for reducing the impact of activities on wildlife will include, but not be limited to the following:- All personnel will be trained on wildlife-human interaction/encounters procedures.- Pre-drilling reconnaissance site visits prior to drilling activities will assist in identifying sensitive wildlife habitat.- Wildlife sightings will be recorded and this information will be passed on to other members of the crew;- Proper storage of hazardous materials, garbage, food and any other potential attractants will be ensured to avoid exposure to wildlife;- All personnel will be aware of, and will follow, wildlife deterrence techniques (including proper storage and disposal of food) to reduce the possibility of attracting wildlife to the drill areas;- All personnel will have bear safety training and will be aware of the penalties for shooting polar bears, even in self defense.- Operations will be modified or suspended if there is a potential to affect seasonal migration or nesting activities.- Appropriate screens will be placed over all water intakes in order to reduce the potential for fish entrapment.- The amount of water used for the drill from any source body of water will never cause a drawn down. See above comments in Noise Levels and Vegetation and Wildlife Habitat for additional information about wildlife disturbance mitigation measures.

SOCIO-ECONOMIC

Archaeological and cultural historic sites: Work in remote areas may help identify new archaeological and/or palaeontological sites, but these important sites/artifacts can be disturbed or destroyed if proper precautions are not taken. All staff and contractors will be properly trained in identification of potential sites and what to do when a site is located. All sites identified from archaeological reconnaissance and inventory programs will be used for program planning to be avoided. If an archaeological or palaeontological artifact or site is discovered, work in the area will be immediately stopped and the Department of Culture, Language, Elders and Youth, CIRNAC and the KIA will be notified. Nothing will be removed, disturbed, or displaced at any archaeological or palaeontological site.

Employment: Solstice believes that it is essential to develop the project in cooperation with local communities. The proposed exploration program will provide seasonal employment and training opportunities for local Inuit in camp and as guides in the field whenever possible.

Community wellness: Whenever possible, goods and services will be sourced from local businesses. Solstice is committed to engaging communities in an open and honest manner and would appreciate and consider any and all knowledge, advice and input received. With proper mitigation, the project should not affect land and water use, traditional use or cultural resources.

Human Health: As the project is located at a remote site removed from immediate interaction with local communities, no impact to local human health is expected.

Cumulative Effects

All potential environmental effects associated with the proposed Kahuna Gold Property exploration activities are considered negligible, localized effects that can be mitigated. No significant residual impacts to the environment are expected to occur as a result of the implementation of this program. While individually no significant effects are anticipated, consideration should be made to the combination of all existing or known planned activities within the vicinity of the project area. Some cumulative effects can be positive, such as more residents finishing high school and earning higher salaries. Other positive cumulative effects can be increased employment rate, infrastructure and potential for investment in communities by government. Cumulative effects may also be negative and therefore attention should be given to the potential for these to occur in advance of project growth. Cumulative effects on the land might include changes to the number of wildlife, increases in non-native plants, or the melting of permafrost. Other exploration projects in the area include the adjacent Kahuna Diamond Project operated by Kodiak Copper Corp. and the Agnico Eagle Meliadine Project.

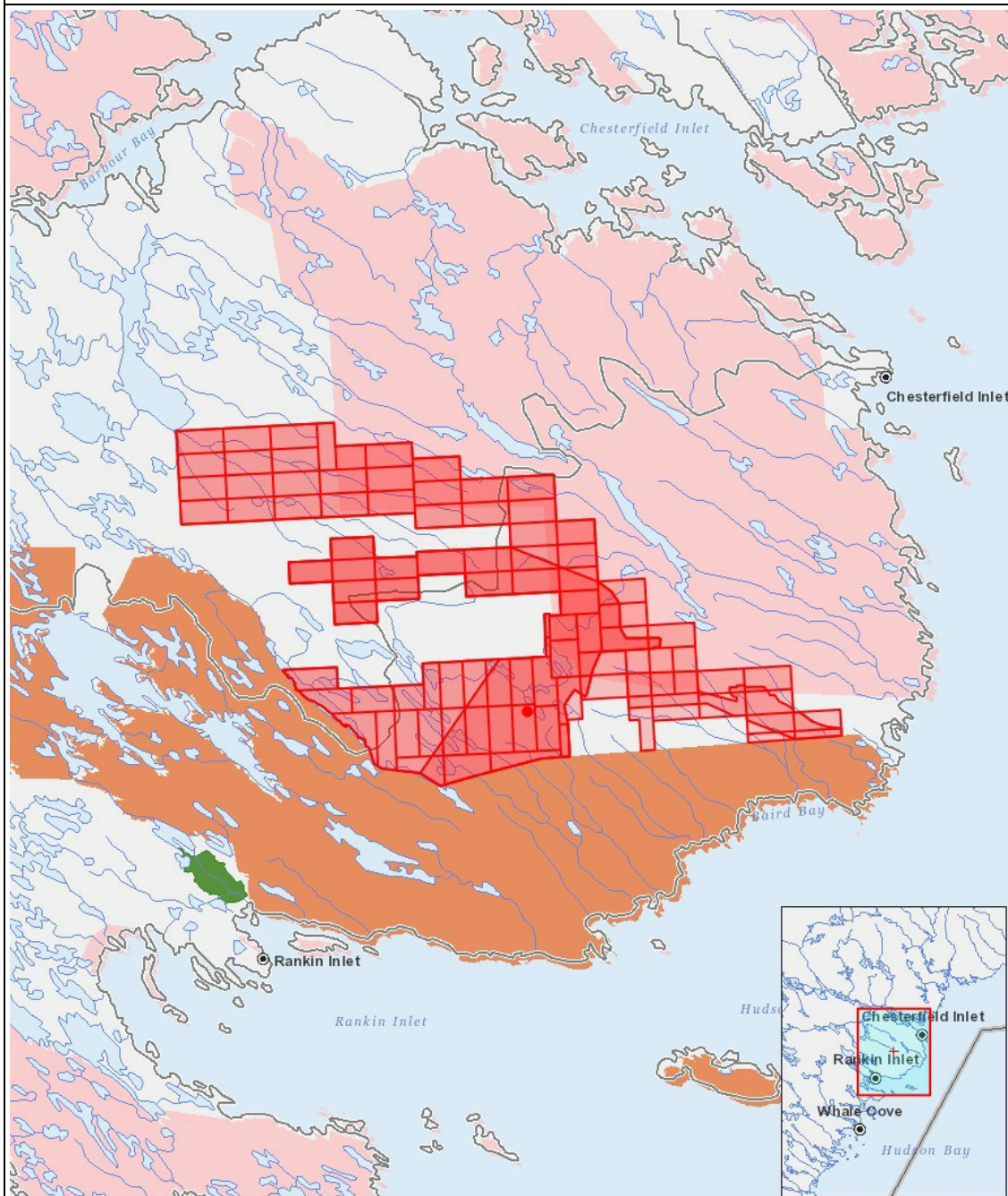
Impacts

Identification of Environmental Impacts

	P H Y S I C A L										B I O L O G I C A L										S O C I O - E C O N O M I C					
	Designated environmental areas										Vegetation										Archaeological and cultural historic sites					
	Ground stability										Wildlife, including habitat and migration patterns										Employment					
	Permafrost										Birds, including habitat and migration patterns										Community wellness					
	Hydrology / Limnology										Aquatic species, incl. habitat and migration/spawning										Community infrastructure					
	Water quality										Wildlife protected areas										Human health					
	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																									
	P H Y S I C A L										B I O L O G I C A L										S O C I O - E C O N O M I C					
	Vegetation										Wildlife, including habitat and migration patterns										Archaeological and cultural historic sites					
	Wildlife, including habitat and migration patterns										Birds, including habitat and migration patterns										Employment					
	Aquatic species, incl. habitat and migration/spawning										Wildlife protected areas										Community wellness					
	Wildlife protected areas										Human health															
	S O C I O - E C O N O M I C										Archaeological and cultural historic sites										Community infrastructure					
	Archaeological and cultural historic sites										Wildlife protected areas										Human health					
	Employment										Wildlife protected areas										Human health					
	Community wellness										Wildlife protected areas										Human health					
	Community infrastructure										Wildlife protected areas										Human health					
	Human health										Wildlife protected areas										Human health					
Construction																										
Camp		-	-	-	-	M	-	M	-	M	-	M	M		M	M	M	-	-		-	P	P	P	-	
Drilling		-	-	M	-	M	-	M	P	M	-	M	M		M	M	M	M	-		P	P	P	P	-	
Operation																										
Camp		-	-	M	-	M	-	M	-	M	-	M	M		M	M	M	-	-		-	P	P	P	-	
Drilling		-	-	M	-	M	-	M	P	M	-	M	M		M	M	M	M	-		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 | Solstice_Kahuna_Gold_Drilling_Area_n83z15_20210119 |
| 2 | polygon | Solstice_Kahuna_Gold_Mineral_Claims_n83z15_20210119 |
| 3 | polygon | Solstice_Kahuna_Gold_Property_Outline_n83z15_20210126 |
| 4 | point | Proposed_Solstice_Camp_Location_n83z15_20200119 |

