



NIRB Application for Screening #125481

RV David Thompson Eastern Arctic Operations 2019

Application Type: New

Project Type: Marine Based Activities

Application Date: 8/15/2019 5:32:24 PM

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

Proposed Authorization: from 0001-01-01 to 0001-01-01

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DETAILS

Non-technical project proposal description

English: RV David Thompson -- 2019 Eastern Arctic Operations -- non-technical summary - Ice conditions permitting, in late September 2019 the Parks Canada Research Vessel (RV) David Thompson will transit east through Bellot Strait and into Prince Regent Inlet. Non-intrusive marine survey operations (i.e. underwater archaeological, bathymetric, selected marine water sampling, habitat mapping and seabed classification) will take place at selected locations along a planned route from Bellot Strait, through Prince Regent Inlet, then Lancaster Sound, and on to Pond Inlet, where a Port visit and community open house are planned, on or around October 3rd. From Pond Inlet, the RV David Thompson will continue its Arctic transit down the east coast of Baffin Island to Pangnirtung, where another port visit and community open house are planned on or around October 10th. The port visits will provide a firsthand opportunity to showcase select artefacts recently recovered from the wrecks of HMS Erebus and HMS Terror and to update communities on the progress of the ongoing archaeological work on these sites. In Cumberland Sound, additional non-intrusive marine survey is planned in the area of Kekerten Island and Black Lead Island where historic 19th century whaling stations operated. After departure from Cumberland Sound, the RV David Thompson will head south to the Gulf of St. Lawrence and ultimately for overwintering in Prescott, Ontario. Activities connected with the Eastern Arctic operations of the David Thompson are marine based, and will principally involve side-scan sonar and multi-beam echosounder survey. Any underwater archaeological features detected by sonar, would in turn be examined by remotely operated vehicle (ROV), autonomous underwater vehicle (AUV), and/or Parks Canada divers. In addition to locating and imaging potential underwater archaeological sites, post-processing of the same multi-beam data set by different software will also yield bathymetry/seafloor topography and seabed classification data (for the purposes of benthic habitat mapping). A marine survey off Bylot Island, will complement a brief 1 or 2 day terrestrial survey of the Maud Bight wreck (210-X3), looking for additional submerged hull remains related to the conspicuous wreckage on shore of a suspected whaleship that was driven aground long ago.

French: NR David Thompson -- Operations arctiques 2019 -- Sommaire non-technique -- À la fin septembre, les conditions de glace le permettant, le navire de recherche David Thompson de Parcs Canada transitera vers l'est à travers le détroit de Bellot et dans le bras de mer Prince Regent . Des opérations de prospection marine non-intrusives (c-a-d d'archéologie subaquatique, de bathymétrie, de l'échantillonnage sélectif d'eau marine, de cartographie d'habitat et de classification des fonds marins) auront cours à des endroits sélectionnés le long d'une route planifiée depuis le détroit de Bellot, à travers le bras de mer Prince Regent, ensuite dans le détroit de Lancaster et jusqu'à Pond Inlet, où une visite portuaire et un événement portes ouvertes pour la communauté sont planifiés, le 3 Octobre ou aux environs de cette date. De Pond Inlet, le NR David Thompson continuera son transit arctique le long de la côte de l'île de Baffin jusqu'à Pangnirtung où une autre visite portuaire et un événement portuaire sont planifiés aux alentours du 10 Octobre. Les visites portuaires fourniront une opportunité unique de montrer une sélection d'artefacts récemment récupérés des épaves du HMS Erebus et HMS Terror et d'informer les communautés sur le progrès des travaux archéologiques en cours sur ces sites. Dans le détroit de Cumberland, d'autres prospections marines non-intrusives sont planifiées aux alentours des îles Kekerten et Black Lead où des stations historiques de chasse à la baleine étaient opérationnelles au 19e siècle. Après le départ du détroit de Cumberland, le NR David Thompson se dirigera vers le sud vers le golfe du Saint-Laurent et ultimement vers son point d'hivernage à Prescott en Ontario. Les activités liées aux opérations dans l'est de l'Arctique du RV David Thompson sont marines, et impliqueront principalement des prospections au sonar latéral et à l'échosondeur multi-faisceaux. Tout élément archéologique submergé détecté par sonar, sera par la suite investigué par robot sous-marin téléguidé (ROV), par véhicule sous-marin auto-guide (AUV) et/ou par des plongeurs de Parcs Canada. En plus de localiser et de capturer des images des sites archéologiques submergés potentiels, le traitement des mêmes ensembles de données par différents programmes informatiques fournira aussi des données de bathymétrie, et de topographie et de classification des fonds marins (pour des objectifs de cartographie des habitats benthiques) Une prospection marine au large de l'île Bellot complètera une courte prospection terrestre de 1 ou 2 journées sur l'épave de Maud Bight (210-X3), pour chercher des restes de coque additionnels liés à ces restes d'épave visibles sur terre de ce que l'on croit être un baleinier qui fut jadis poussé sur terre.

[illegible]

Operations Phase: from 2019-09-19 to 2019-10-21

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
RV David Thompson route -- Cambridge Bay to Pangnirtung and Cumberland Sound	Marine Based Activities	Marine	Various. Marine	Potential of underwater archaeological sites. To be evaluated in the event.	Various. Vessel transit from Cambridge Bay to Pangnirtung/Cumberland Sound via Gjoa Haven and Pond Inlet.
RV David Thompson route -- Cambridge Bay to Pangnirtung and Cumberland Sound	Scientific/International Polar Year Research	Marine	Sonar operations: hull-mounted multi-beam echosounder survey may be undertaken 24 hours/day throughout the transit to amass bathymetric and seafloor topographic data. Vessel towed side-scan sonar and Autonomous Underwater Vehicle (AUV) deployed side-scan sonar would be undertaken more selectively in areas of identified archaeological and/or ecological interest, for periods of up to 24 hours per day, but typically for 1-5 days at a time.	Deployments of Remotely Operated Vehicles (ROVs) will be site specific, to gain more specific (photo/video/laser scan) data on identified archaeological and/or ecological features of interest. ROV would be deployed from vessel at anchor.	Various. Vessel transit from Cambridge Bay to Pangnirtung/Cumberland Sound via Gjoa Haven and Pond Inlet.
RV David Thompson route -- Cambridge Bay to Pangnirtung and Cumberland Sound	Sampling sites	Marine	Periodic water sampling for micro-plastic pollution and environmental DNA (eDNA) analysis. Samples would be collected up to 6 times per day, approx. every four hours, using both surface water collection bottles and Niskin bottles at select	N/A	Various. Vessel transit from Cambridge Bay to Pangnirtung/Cumberland Sound via Gjoa Haven and Pond Inlet.

		depths of interest.		
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Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Pond Inlet	Mayor Joshua Katsak and Council	Hamlet of Pond Inlet	2019-02-25
Taloyoak	Mayor Simon Qingnaqtuq	Hamlet of Taloyoak	2019-02-12
Pond Inlet	N/A	Community visit / open house on RV David Thompson	2019-10-03
Pangnirtung	N/A	Community visit / open house on RV David Thompson	2019-10-10
Pangnirtung	Simeonee Keenainak	Hunters and Trappers Association - Mittamatilik	2019-03-25
Pangnirtung	Mosesee Qappik	Hamlet of Pangnirtung	2018-03-29
Pond Inlet	Members	Hunters and Trappers Association - Mittamatilik	2019-02-25
Taloyoak	Members	Hunters and Trappers Association - Mittamatilik	2019-02-12
Gjoa Haven	N/A	Community visit / open house on RV David Thompson	2019-08-18

Authorizations

Indicate the areas in which the project is located:

Kitikmeot
North Baffin
South Baffin

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Parks Canada	Research and Collection Permit	Applied, Decision Pending		
Government of Nunavut, Department of Culture, Language, Elders, and Youth	Archaeology and Paleontology Research Permit, Class II	Applied, Decision Pending		
Canadian Wildlife Service	Migratory Bird Sanctuary permit under the Migratory Bird Sanctuary Regulations	Applied, Decision Pending		
Nunavut Research Institute	NRI permit will be sought for water sampling as described under Activities.	Not Yet Applied		

Project transportation types

Transportation Type	Proposed Use	Length of Use
Water	RV David Thompson	

Project accomodation types

Other,

Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
RV David Thompson (steel vessel)	1	29.0 meters (228.3 gross tonnage)	Accommodation and dive platform, remote sensing platform.
Rigid Hull Inflatable Boat RHIB	1	5.90 m	Ship's work boat and remote sensing platform.
FC 530 zodiac	1	5.30 m	Auxiliary workboat.

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Propane	fuel	2	20	40	Liters	Cooking
Diesel	fuel	1	53000	53000	Liters	RV David Thompson shipboard fuel
Diesel	fuel	4	205	820	Liters	Power tools and equipment
Gasoline	fuel	1	900	900	Liters	Boat and equipment fuel in jettison tank

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
0	No fresh water retrieval. Two on board water makers (reverse osmosis) with a 22,000 L fresh water holding tank.	Aboard RV David Thompson

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Marine Based Activities	Combustible wastes	N/A	All garbage will be compacted and at the end of the project, brought to approved shore disposal facilities in Pond Inlet.	N/A
Marine Based Activities	Greywater	1540 L/day	All accommodation will be on the ship which is equipped with a Transport Canada approved sewage treatment plant meeting the IMO MEPC 227(64) and Annex IV of MARPOL regulatory standards.	N/A
Marine Based Activities	Sewage (human waste)	1540 L/day	All accommodation will be on the ship which is equipped with a Transport Canada approved sewage treatment plant meeting the IMO MEPC 227(64) and Annex IV of MARPOL regulatory standards.	N/A

Environmental Impacts:

No negative impacts. Positive impacts include will the collection of multibeam echosounder data for bathymetry, seabed classification and habitat mapping purposes. Vessel will also collect water samples for pollution monitoring. Non-disturbance identification and evaluation of potential underwater archaeological sites will also be a positive impact.

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

See sections on Material Use, Water Use, and Waste. See non-technical summary. RV David Thompson (228 tonnes, 29 m, max 14 persons on board) -- ABS Classed as Govt. Survey vessel. 5.90 m RHIB and 5.30 m Zodiac (research support craft -- deployed by the ship). Ship equipped with DVZ Biomaster Plus SKA 20 sewage treatment plant (capacity for grey and black water waste from 20 ppl). Vessel is non-ice classed and will not operate in or near ice. Fuelling: When in Arctic waters, the RV David Thompson will refuel directly from Canadian Coast Guard ships (approx. 40,000 L per year), under MOU with the Coast Guard. There is no plan to take fuel in communities. Ship-to-ship refuelling operations are overseen by Coast Guard. Fuelling of the onboard 130 L fuel tank of the 5.90 m RHIB will be done only when the boat is on deck of the RV David Thompson. All re-fuelling operations are overseen by the Chief Engineer. Spill mitigation: The RV David Thompson has an Enviro-pack 65 gallon (246 L) spill kit on deck, complete with 65 gallon overpack drum, absorbent socks, pads, scupper plugs, etc. The Coast Guard ships all have fuel spill containment booms readily available in the event of a spill.

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

Description of Existing Environment: Physical Environment

Description of Existing Environment: Biological Environment

Description of Existing Environment: Socio-economic Environment

Miscellaneous Project Information

Identification of Impacts and Proposed Mitigation Measures

Large Marine Mammals. In the event that large marine mammals such as Bowhead whales, Beluga whales, and/or Narwhales are encountered during survey operations and/or vessel transit, said operations will be suspended or re-located, until such a time that the animals have moved a safe distance away from the vessel activity (minimum 500 m) on their own accord. Bridge Watch personnel and boat operators will be advised to look out for large marine mammals and report observations to the Master and Project Director. Sightings of Species at Risk within the waters of the Bylot Island Migratory Bird Sanctuary will be reported to the Canadian Wildlife Service, and in the waters of Tallurutiup Imanga National Marine Conservation Area, to Parks Canada's Nunavut Field Unit.

Cumulative Effects

Impacts

Identification of Environmental Impacts

		PHYSICAL	Designated environmental areas	Ground stability	Permafrost	Hydrology / Limnology	Water quality	Climate conditions	Eskers and other unique or fragile landscapes	Surface and bedrock geology	Sediment and soil quality	Tidal processes and bathymetry	Air quality	Noise levels	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
Construction																										
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-
Operation																										
Marine Based Activities		-	-	-	-	P	-	-	-	-	P	-	-		-	-	-	-	P	-		P	P	-	-	-
Decommissioning																										
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

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

Project Location



List of Project Geometries

1 polyline RV David Thompson route -- Cambridge Bay to Pangnirtung and Cumberland Sound