PART 1 FORM
PROJECT PROPOSAL INFORMATION REQUIREMENTS

To access NIRB documents, project screenings, and project reviews please visit the Nunavut Impact Review Board's ftp site http://ftp.nirb.ca/. The NIRB's website (www.nirb.ca) is currently under construction. Please contact info@nirb.ca should you have any questions or require further information.

IMPORTANT!
Please be advised that your application will not be processed until the Sections 1 - 9 are completed in their entirety, in both English and Inuktitut (+ Inuinnaqtun, if in the Kitikmeot).

SECTION 1: APPLICANT INFORMATION

1. Project Name **Carat Property**

2. Applicant's full name and mailing address:

Shear Diamonds (Nunavut) Corp.		780-435-0045
Suite 220, 17010 – 103rd Ave	Phone:	
Edmonton, AB	Fax:	780-428-3476
T5S 1K7	Email:	info@shearminerals.com

3. Primary contact's full name and mailing address:

Allison Rippin Armstrong	Phone:	780-435-0045
Director of Environment and Permitting	Fax:	780-428-3476
Same address as above	Email:	ar_enviro@yahoo.ca

SECTION 2: AUTHORIZATION NEEDED

1. Indicate <u>all</u> authorizations associated with the project proposal:

X	Regional Inuit Association (RIA)		Canadian Launch Safety (CLS)
X	Nunavut Water Board (NWB)		Environment Canada (EC)
X	Nunavut Planning Commission (NPC)		Government of Nunavut (GN)
X	Indian and Northern Affairs Canada (INAC)		Department of National Defense (DND)
	Department of Fisheries and Oceans (DFO)		Hamlet
	Community Government & Services (CG&S)		Parks Canada (PC)
	Nunavut Research Institute (NRI)		Canadian Wildlife Service (CWS)
	Department of Culture, Language, Elders, and Youth (CLEY)		Other (please specify):

2. List the <u>active</u> permits, licenses, or other authorizations related to the project proposal, and their expiry date(s):

This is a new application.

3. **List the <u>pending</u> permits, licenses, or other authorizations related to the project proposal:**

Type B Water licence - NWB
Type A land use licence - INAC
Class III Land use licence - KitIA

4. **Has this project or <u>any components of this project</u> been previously screened or reviewed by NIRB?**

X YES ☐ **NO**

If YES, indicate the previous project name and NIRB File No.

<u>Activities for this project will be based out of the Jericho Diamond Mine.</u>

SECTION 3: PROJECT PROPOSAL DESCRIPTION

1. **Indicate the type of project proposal (check all that apply)[1,2]: (See Appendix A for Project Type Definitions)**

1	All-Weather Road/Access Trail	☐	**9**	Site Cleanup/Remediation	☐
2	Winter Road/ Winter Trail	☐	**10**	Oil and Natural Gas Exploration/Activities	☐
3	Mineral Exploration	**X**	**11**	Marine Based Activities	☐
4	Advanced Mineral Exploration	☐	**12**	Scientific/International Polar Year Research*	☐
5	Mine Development /Bulk Sampling	☐	**13**	Harvesting Activities*	☐
6	Pits and quarries	☐	**14**	Tourism Activities*	☐
7	Offshore Infrastructure (port, break water, dock)	☐	**15**	Other[2]:	☐
8	Seismic Survey	☐			☐

<u>Please note:</u>

1. All project types listed above, except those marked with an asterisk (*), will also require the Proponent to submit a **Part 2 Project Specific Information Requirement (PSIR) Form**. The NIRB application process will not be considered complete without the Part 2 PSIR Form.
2. Please be advised that in order to complete the NIRB process, the NIRB may request additional information at any time during the process.
3. If "Other" is selected, contact NIRB for direction on whether a Part 2 PSIR Form is required.

2. If Project Type 3, 4 or 5 was selected above, please indicate the mineral of interest that is being extracted. Include a brief description.

	Base Metals (zinc, copper, gold, silver, etc)_____
X	Diamonds
	Uranium
	Other: _____

3a. If Project Type 12, 13 or 14 was selected above, complete the table and questions below.

Transportation Type	Quantity	Proposed Use	Length of Use
E.g. Helicopter	*1*	*Site to site pick ups and drop offs*	*6 days*
Helicopter	1	Drill moves, crew changes, support	
Snow mobile	4	Crew changes, drill site visits	
Challenger (2012)	1	Winter drill moves (in 2012)	
Generator	2	Drill and Water pump for drill water	

3b. Describe any docks, piers, air strips or related structures that are to be used in conjunction with the proposed project activities. **Please note**: *the building of new structures may require a Part 2 Form.*

Not applicable

3c. If a temporary camp site is to be established, describe the proposed structures in detail and indicate the type and source of power for the camp site if applicable.

Not applicable

4. Personnel

Total No. of personnel on site = (A) **5**

Total No. of days on-site = (B) **90**

Total No. of Person days (A) × (B) = 450

5. Timing

Period of operation: from **April 2011** to **October 2011**

Proposed term of authorization: from **April 2011** to **October 2012**

6a. Region (check all that apply):

	North Baffin		Kivalliq	X	Kitikmeot		Transboundary: _____
	South Baffin		National Park				

6b. Describe the location of the proposed project activities in a regional context, noting the proximity to the nearest communities and any protected areas.

Kugluktuk is approximately 260 km from the Jericho Diamond Mine.

6c. Discuss the history of the site if it has been used for any project activities in the past.

This property was explored in the past; most recently by Tahera Diamond Corporation.

6d. Indicate if there are any known archaeological/palaeontological historical sites in the area.

Shear has received known site information from CLEY.

7. Land Status (check all that applies):

X	Crown		Commissioners'		Municipal
X	Inuit Owned Surface Lands		Inuit Owned Sub-Surface Lands		

8a. Co-ordinates:

Min Lat (degree/minute)	111 ° 38' 49"	Min Long (degree/minute)	66 ° 3' 4"
Max Lat (degree/minute)	111 °18' 55"	Max Long (degree/minute)	65 ° 52' 15"

NTS Map Sheet No: **76 E/13, 14 and 76 L/3, 4**
(Please ensure that maps of the project are attached (1:50,000 **if available**, 1:250, 000 **Mandatory**) available from Natural Resources Canada)

8b. If the project proposal includes a **camp**, please provide the coordinates of the camp location

Not applicable. All exploration activities will be based from the Jericho Diamond Mine.

		Min Long (degree/minute)	
Min Lat (degree/minute)			
Max Lat (degree/minute)		Max Long (degree/minute)	

If different from above for the camp:
NTS Map Sheet No:
Please ensure that maps of the project are attached (1:50,000 **if available**, 1:250, 000 **Mandatory**) available from Natural Resources Canada

Please note that additional location information may be required in a subsequent Project Specific Information Requirement (PSIR) submission. This may take the form of a digital Geographic Information Systems (GIS) file.

SECTION 4: NON-TECHNICAL PROJECT PROPOSAL DESCRIPTION

Please include a non-technical description of the project proposal, no more than 500 words, in English and Inuktitut (+Inuinnaqtun, if in the Kitikmeot). The project description should outline the following:

- The project activities, their necessity and duration;
- Method of transportation;
- Any structures that will be erected (permanent/ temporary);
- Alternatives considered; and
- Long-term developments, the projected outcome of the development for the area and its timeline.

IMPORTANT: IF THE PROPOSED ACTIVITIES REQUIRE SUBMISSION OF A NIRB PART 2 PSIR FORM, PLEASE COMPLETE SECTION 8 ONLY, OTHERWISE CONTINUE ON WITH SECTION 5.

SECTION 5: MATERIAL USE

1. List equipment to be used (including drills, pumps, aircraft, vehicles, etc.):

Equipment type and number	Size – dimensions	Proposed use
Helicopter	A Star, Long Ranger, Hughes 500	Drill move, crew change
Drill	25A or equivalent	Exploration drilling
Generator		Pumping water
Snow mobile		Crew change, site visits

2a. Detail fuel and hazardous material use:

Fuel	Number of Containers and Capacity of Containers	Total Amount of Fuel (in Litres)	Proposed Storage Methods
Diesel	8 X 205 L	1,640 L	Stored at the drill
Gasoline	1 X 205 L	205 L	Stored at the drill
Aviation fuel	1 X 205 L	205 L	Stored at the drill
Propane	2 X 100 lb	200 lb	Stored at the drill
Other			
Hazardous Materials and Chemicals		**Total Amount of Hazardous Materials and Chemicals (in Litres)**	

2b. Describe the proposed Spill Prevention Plan.

See attached plan.

3a. Detail the anticipated daily water consumption rates

Daily amount (m^3)	Proposed water retrieval methods	Proposed water retrieval location
50 cubic metres	pumping	See attached list and map

3b. Have you applied for a water License with the Nunavut Water Board?

Ξ YES
☐ NO

If yes, what class of licence?

Ξ Class B Water Licence
☐ Class A Water Licence

SECTION 6: WASTE DISPOSAL AND TREATMENT METHODS

1. **List the types of waste associated with the proposed project activities:**

Type of waste	Projected amount generated	Method of Disposal	Additional treatment procedures
Sewage (human waste)	N/A		
Greywater	N/A		
Combustible wastes	minimal	Sorted at Jericho for incineration	
Non-Combustible wastes	minimal	Sorted at Jericho for appropriate disposal	
Overburden (organic soil, waste material, tailings)	N/A		
Hazardous waste	minimal	Sorted at Jericho, shipped off site to a licensed facility	
Other:			

2. **Describe the proposed Waste Management Plan.**

Wastes will be taken back to the Jericho mine for sorting and disposal. Hazardous wastes will be shipped off site with a waste manifest to an authorized, licenced facility. Combustible wastes will be incinerated in the dual chambered incinerator at the Jericho mine site.

SECTION 7: COMMUNITY INVOLVEMENT & REGIONAL BENEFITS

1. **List the community representatives that have been contacted and provide the minutes of the meetings if available:**

Community	Name	Organization	Date Contacted
Please see attached log			

Please see the attached document summarizing the community involvement.

SECTION 8: GENERAL QUESTIONS

1. **Will you be disturbing any known archaeological sites?**

☐ **YES** **ΞNO**

SECTION 9: APPLICANT SIGNATURE

Please sign and date your application:

Signature	Title	Date
Pamela Strand	President	Feb 11/2011

APPENDIX A
Project Type Definitions

Access Trail: A project proposal with the objective of providing vehicular access to an area of interest involving minimal alteration to the terrain.

Advanced Exploration: A project proposal with the objective of identifying size, grade, and physical characteristics of a mineral occurrence and to assess the economic and technical feasibility of developing the mineral deposit into a producing mine

All-Weather Road: A project proposal with the objective of road construction for use in all seasons.

Bulk Sampling: A project proposal with the objective of extracting of large samples of mineralized material involving hundreds to thousands of tonnes. Samples are selected as representative of the potential mineral deposit being sampled. May involve crushing/milling (on small-scale)

Harvesting activities: A project proposal with the objective of harvesting animals, marine mammals and/or fish from their natural habitats by means of hunting or trapping for traditional and commercial use.

Marine Based Activities: Any activity occurring in the marine environment, such as vessel use associated with land-based activities or disposal at sea.

*Please note that normal community re-supply or individual ship movements not associated with land-based project proposals shall not be screened by NIRB (Section 12.12.2 of NLCA).

Mine Development: A project proposal with the objective of extracting broken rock with mineralization of sufficient grade and tonnage to sustain commercial mining operations (ore). Mining a body of ore can be achieved by either open pit and/or underground development. Mine development may involve milling. Milling involves treatment of the extracted ore through a combination of mechanical and chemical processes to selectively recover the valuable mineral.

Mineral Exploration: A project proposal with the objective of exploring an area to find geological anomalies. It involves site reconnaissance (ground and/or air) to locate broad and fiscal mineral deposits.

Offshore Infrastructure: A project proposal with the objective of building off loading facilities constructed off the shoreline and connected to the mainland of the marine or freshwater environment. Examples include a jetty, dock, or port facility.

Oil and Gas Exploration/Activities: A project proposal that includes 1) exploration, such as seismic or geological mapping, 2) drilling of oil and gas wells, 3) construction and operation of a pipeline, a gas processing plant or any oil and gas facility within Nunavut.

Pits and Quarries: A project proposal with the objective of pitting, which involves the extraction of granular material (i.e. sands and gravels) and quarrying, which involves the removal of consolidated rock (i.e. bedrock, frozen soil).

Scientific Research: A project proposal with the objective of implementing a series of site activities comprised of observation of phenomena, measurement and collection of data necessary for scientific investigation in designated areas within a limited time period.

Seismic Survey: A project proposal with the objective of conducting a survey to map the depths and contours of rock strata by timing the reflections of sound waves released from the surface. Survey site locations may be offshore (not within 12 nautical miles of any coast), near shore, and extended onshore.

Site Cleanups: A project proposal with the objective of site cleanups (includes DEW line site cleanups), which focuses on the remediation of chemically contaminated soils, stabilization of landfills and dumps, demolition/disposal of infrastructure and debris and monitoring after cleanup is completed.

Tourism Activity: A project proposal with the objective of conducting travel predominantly for recreational, sport or leisure purposes within a designated area and limited time period.

Winter Road: A project proposal with the objective of building a road for winter use by leveling and compacting surface snow and ice. Winter road is removed at end of season.

Winter Trail: A project proposal with the objective of building a trail for winter use by a single pass of a tracked vehicle using a blade, if necessary.

SCREENING PART 2 FORM
PROJECT SPECIFIC INFORMATION REQUIREMENTS (PSIR)

1. SUBMISSIONS

The Proponent must submit all information pertaining to the Project as a whole. The information requirements below are designed for the purpose of environmental assessment and are not limited to the scope of a single permit or license application.

IMPORTANT: Please be advised of the following:

1. NIRB does not accept references to an ftp or web sites as a submission.

2. The Proponent must provide NIRB with 1 (one) electronic copy and 1 (one) hardcopy of the required information in English.

3. All maps should be shapefiles, be legible, and should include grids, be of appropriate scale, indicate the scale, include latitude and longitude references, NTS Maps numbers, title, legend and a north arrow. To the extent possible, avoid hand-drawn demarcations and faxed maps; and,

4. Please complete all required information in each section below. If the required information is not applicable to the project proposal, please indicate this in the response with "n/a". If the request has been provided in a different section or report, please note the section or report where the response can be found.

2. GENERAL PROJECT INFORMATION REQUIREMENTS

Project Coordinates and Maps

1. The preferred method for submitting project coordinates information is through the use of a Geographic Information System (GIS) compatible digital file. Although an ESRI ArcView 3.x shape file (in decimal degrees) is the preferred interchange format, the NIRB has the capacity to receive over 100 GIS and CAD related formats, including MapInfo and AutoCAD, provided proper format and projection metadata is also submitted. The NIRB requires coordinates for the project proposal which reflect the entire project area as defined by:

    - Area/sites of investigation;

- See attached map
    - Boundaries of the foreseen land use permit/right-of-way area(s) to be applied for;

- This application is for exploration activities only. No camp will be constructed; all activities will be based from the Jericho Diamond Mine. The map shows the boundaries of Crown and Inuit Owned Lands.
  - Location of any proposed infrastructure or activity(s); and
  - No infrastructure will be constructed to support this project. All work will be based from the Jericho Diamond Mine.
  - Boundaries of the mineral claim block(s) where proposed activities will be undertaken.
- The property boundary is approximately:

Top Left	111°38'29"	66°4'50"
Top Right	111°21'12"	66°3'4"
Bottom Right	111°18'55"	65°52'15"
Bottom Left	111°38'49"	65°52'12"

2 Map of the project site within a regional context indicating the distance to the closest communities.
See attached map.

3. Map of any camp site including locations of camp facilities. Not applicable.
4. Map of the project site indicating existing and/or proposed infrastructure, proximity to water bodies and proximity to wildlife and wildlife habitat.

See attached map.

Project General Information

5. Discuss the need and purpose of the proposed project.
   - This project will support the Jericho Diamond Mine project in exploring for additional resources.
6. Discuss alternatives to the project and alternative methods of carrying out the project, including the no-go alternative. Provide justification for the chosen option(s).
   There are no alternatives to this project.
7. Provide a schedule for all project activities.
   - See the attached Workplan.
8. List the acts, regulations and guidelines that apply to project activities.
   - Article 13 - Nunavut Land Claims Agreement
   - NWB - Water Licensing in Nunavut - Interim Procedures and Information Guide
   - for Applicants
   - NWTWB - Guidelines for Contingency Planning
   - DFO - Freshwater Intake End of Pipe Fish Screen Guideline
   - Fisheries Act - s.35
   - GN - Environment Protection- Spill Contingency Regulations
   - Canadian Drinking Water Quality Guidelines
   - Public Health Act Camp Sanitation Regulations
   - Public Health Act Water Supply Regulations
   - Nunavut Waters and Nunavut Surface Rights Tribunal Act
   - Territorial Land Use Act and Regulations

9. List the approvals, permits and licenses required to conduct the project.
    - Type A INAC land use permit application submitted for review
    - Type B Water Licence application submitted for review
    - Class III Land Use Licence, KIA, application submitted for review
    - NPC conformity screening
    - NIRB screening

DFO Operational Statement (OS) Conformity

10. Indicate whether any of the following Department of Fisheries and Oceans (DFO) Operational Statement (OS) activities apply to the project proposal:
    - Bridge Maintenance
    - Clear Span Bridge
    - Culvert Maintenance
    - Ice Bridge
    - Routine Maintenance Dredging
    - Installation of Moorings

    Please see DFO's OS for specific definitions of these activities available from DFO's web-site at http://www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/index-eng.htm

    None of these activities are being proposed for this exploration program.

11. If any of the DFO's OS apply to the project proposal, does the Proponent agree to meet the conditions and incorporate the measures to protect fish and fish habitat as outlined in the applicable OS? If yes, provide a signed statement of confirmation.

Transportation

12. Describe how the project site will be accessed and how supplies will be brought to site. Provide a map showing access route(s).
    - The drill sites will be mostly accessed by helicopter. Drill moves will be by helicopter or during suitable snow conditions using challenger/bombardier (2012).
    - The sites will be accessed by snow mobile during the winter/spring program when there is sufficient snow cover to permit and when the drill targets are close enough to the mine site to make travel by snow machine safe.
13. If a previous airstrip is being used, provide a description of the type of airstrip (ice-strip/all-weather), including its location. Describe dust management procedures (if applicable) and provide a map showing location of airstrip.
    - There will not be an airstrip for this program. All work will be based from the Jericho Diamond Mine which has an existing airstrip.
14. If an airstrip is being constructed, provide the following information:
    i. Discuss design considerations for permafrost
    ii. Discuss construction techniques
    iii. Describe the construction materials, type and sources, and the acid rock drainage (ARD) and metal leaching (ML) characteristics (if rock material is required for airstrip bed).
    iv. Describe dust management procedures.
    v. Provide a map showing location of proposed airstrip.
15. Describe expected flight altitudes, frequency of flights and anticipated flight routes.
    - When drilling, flights to and from the drill will be at each shift change and as needed to bring fuel and supplies to the drill.

Camp Site

16. Describe all existing and proposed camp structures and infrastructure
    - Not applicable.
17. Describe the type of camp:
    a. Mobile
    b. Temporary
    c. Seasonal
    d. Permanent
    e. Other
18. Describe the maximum number of personnel expected on site, including the timing for those personnel involved with the project.
    - The maximum number of people at the drill site will be two per shift with visits to the drill site by geologists, drill foreman, camp manager and the environment manager or designate.

Equipment

19. Provide a list of equipment required for the project and discuss the uses for the equipment.
    - See attached list.
20. If possible, provide digital photos of equipment.

Water

21. Describe the location of water source(s), the water intake methods, and all methods employed to prevent fish entrapment. Provide a map showing the water intake locations.
    - Water for drill will be drawn from lakes near the drill for land based targets. Drilling will also be undertaken on ice. See attached list for the location of these drill targets. A mesh screen will cover the water intake line to prevent fish entrapment.
22. Describe the estimated rate of water consumption (m^3/day).
    - The drill uses approximately 50 cubic metres of water per day.
23. Describe how waste water will be managed. If relevant, provide detail regarding location of sumps, including capacity of sumps and monitoring.
    - Drill water will be pumped to a sump at least 31 metres from the natural high water mark of any water body and such that the waters do not enter any water bodies.
24. If applicable, discuss how surface water and underground water will be managed and monitored. Sumps will be inspected visually to ensure that they are functioning as intended.

Waste Water (Grey water, Sewage, Other)

25. Describe the quantities, treatment, storage, transportation, and disposal methods for the following (where relevant):
    - Sewage – NA
    - Camp grey water – NA
    - Combustible solid waste – all wastes will be taken back to the Jericho mine for sorting and disposal.

- Non-combustible solid waste, including bulky items/scrap metal – all waste will be taken back to the Jericho mine for sorting and disposal.
- Hazardous waste or oil – all waste will be taken back to the Jericho mine for sorting and disposal. A waste manifest will accompany all hazardous wastes being shipped from site to an authorized, licensed disposal facility.
- Bulky items/scrap metal – minimal amount anticipated. All waste will be taken back to the Jericho mine for sorting and disposal.
- Contaminated soils/snow – minimal amounts expected. . Contaminated snow will be collected in empty drums and allowed to melt. Absorbent matting will be used to absorb any hydrocarbon and the water will evaporate over the course of the summer. Contaminated soil will be collected in empty drums and will either be shipped from site.
- Empty barrels/ fuel drums empty drums will be removed from site on a regular basis.
- Any other waste produced

26. If the project proposal includes a landfill or landfarm, indicate the locations on a map, provide the conceptual design parameters, and discuss waste management and contact-water management procedures.

Fuel

27. Describe the types of fuel, quantities (number of containers, type of containers and capacity of containers), method of storage and containment. Indicate the location on a map where fuel is to be stored, and method of transportation of fuel to project site.
    - Fuel caches will be established to support the drill program.
28. Describe any secondary containment measures to be employed, including the type of material or system used. If no secondary containment is to be employed, please provide justification.
    - Fuel will be stored within secondary containment when the volume exceeds 40,000 litres.
29. Describe the method of fuel transfer and the method of refuelling.
    - Fuel will be transferred to site in sealed drums. A hand operated pump will be used for refuelling.
30. Describe spill control measures in place.
    - See attached SCP

Please refer to Environment Canada's fuel storage tank system regulations (*Storage Tank System for Petroleum and Allied Petroleum Products*) website at http://www.ec.gc.ca/st-rs/ for details on fuel storage requirements.

Chemicals and Hazardous Materials*

**included but not limited to oils, greases, drill mud, antifreeze, calcium or sodium chloride salt, lead acid batteries and cleaners*

31. Describe the types, quantities (number of containers, the type of container and capacity of containers), method of storage and containment. Indicate the location on a map where material is to be stored, and method of transportation of materials to project site.
    - At the drill site during the drill activity there could be any of the following as needed, generally in 20L pails with secure lids. The balance of materials will be safely stored to code at the Jericho Mine: 550X Polymer, Linseed Soap, Quik Gel, Fondu Cement, Big Bear Rod Grease, Canola Oil, G-STOP, Poly Drill K-

ION, TORQUELESS, Poly Drill PureVis, Z-50, HOLEPLUG 3/8, 15W40 Heavy Duty Engine Oil, Antifreeze, A46 Hydraulic Oil, Diesel Fuel, Gasoline, EP2 Grease, Max-Gear, Ultra Performance Grease, Extra High Yeild Bentonite, Extreme Extra High Yield Gel, GSX-20,WDS-120L, W-OB POLYMER, SUPERSET, Clay Stabilizer, Calcium Chloride Flake, K2, Superpoly, Soda Ash

32. Describe any secondary containment measures to be employed, including the type of material or system used.
    - N/A
33. Describe the method of chemical transfer.
    - N/A
34. Describe spill control measures in place.
    - See attached SCP

Workforce and Human Resources/Socio-Economic Impacts

35. Discuss opportunities for training and employment of local Inuit beneficiaries.
    - Shear will hire qualified Inuit hires will be from the Kitikmeot Region to help us during the season with jobs at camp (Jericho mine) and drill technician and assisting duties. All personnel will be trained onsite.
36. Discuss workforce mobilization and schedule, including the duration of work and rotation length, and the transportation of workers to site.
    - Local hires will work a rotation either 2 weeks in and 2 weeks out or 3 weeks in and 3 weeks out that will be determined once the duration of the work is determined.
37. Discuss, where relevant, any specific hiring policies for Inuit beneficiaries.
    - Shear will hire locally where possible with preference given to those who previously worked at the Jericho Diamond mine. Local purchasing and using local business as much as possible will be based on the workplan and budgets as well as the ability for businesses to delivery goods and services in a timely manner.

Public Involvement/ Traditional Knowledge

38. Indicate which communities, groups, or organizations would be affected by this project proposal.
    - Jericho Diamond mine is 260 km southeast of Kugluktuk and 450 from the Hamlet of Cambridge Bay.
39. Describe any consultation with interested Parties which has occurred regarding the development of the project proposal.
    - Shear has already held meetings and visited in the communities of Kugluktuk and Cambridge Bay. Interviews were completed and resumes collected in Jan 2011. Shear will be travelling north again in February 2011 for community meetings in Cambridge Bay and Kugluktuk.
40. Provide a summary of public involvement measures, a summary of concerns expressed, and strategies employed to address any concerns.
    - Shear is currently working to renew the Type A water licence for the Jericho mine. Shear has worked closely with the KIA on this. This exploration project will support the Jericho project by exploring for additional resources.

41. Describe how traditional knowledge was obtained, and how it has been integrated into the project. Not applicable at this time. Shear has requested information on known archaeological sites from CLEY and has reviewed this information.
42. Discuss future consultation plans.
    - Shear plans to conduct regular community consultation plans at key times during the project evaluation.

3. PROJECT SPECIFIC INFORMATION

The following table identifies the project types identified in Section 3 of the NIRB, Part 1 Form. Please complete all relevant sections.

It is the proponent's responsibility to review all sections in addition to the required sections to ensure a complete application form.

Table 1: Project Type and Information Required

Project Type	Type of Project Proposal	Information Request
1	All-Weather Road/Access Trail	Section A-1 and Section A-2
2	Winter Road/Winter Trail	Section A-1 and Section A-3
3	Mineral Exploration	Section B-1 through Section B-4
4	Advanced Mineral Exploration	Section B-1 through Section B-8
5	Mine Development/Bulk Sampling	Section B-1 through Section B-12
6	Pits and Quarries	Section C
7	Offshore Infrastructure(port, break water, dock)	Section D
8	Seismic Survey	Section E
9	Site Cleanup/Remediation	Section F
10	Oil and Natural Gas Exploration/Activities	Section B-3 and Section G
11	Marine Based Activities	Section H
12	Municipal and Industrial Development	Section I

SECTION A: Roads/Trails

A-1. Project Information

1. Describe any field investigations and the results of field investigations used in selecting the proposed route (e.g. geotechnical, snow pack)
   NA
2. Provide a conceptual plan of the road, including example road cross-sections and water crossings.
   NA
3. Discuss the type and volume of traffic using the road/trail (i.e. type of vehicles and cargo and number of trips annually).
   - NA
4. Discuss public access to the road.
   - NA
5. Describe maintenance procedures.
   - NA
6. Describe whether any portion of the road will be located outside of the Nunavut Settlement Area and whether any other regulatory requirements must be met (e.g. CEAA).

A-2. All-Weather Road/Access Trail

7. Discuss road design considerations for permafrost.
8. Describe the construction materials (type and sources for materials), and the acid rock drainage (ARD) and metal leaching characteristics of the construction materials.
9. Discuss construction techniques, including timing for construction activities.
10. Indicate on a map the locations of designated refuelling areas, water crossings, culverts, and quarries/borrow sources.
11. Identify the proposed traffic speed and measures employed to ensure public safety
12. Describe dust management procedures.

A-3. Winter Road/Trail

13. Describe the surface preparation, including the use of snow berms or compaction, and any flooding. If flooding is to be used, provide the location of the water source on a map.
14. Describe the operating time period.
15. Identify the proposed traffic speed and measures employed to ensure public safety.
16. Discuss whether the selected route traverses any fish-bearing water bodies.

SECTION B: Mineral Exploration /Advanced Exploration /Development

B-1. Project Information

1. Describe the type of mineral resource under exploration.
   - To explore for additional diamond resources.

B-2. Exploration Activity

2. Indicate the type of exploration activity:
   - Bulk Sampling (underground or other)

- Stripping (mining shallow bedded mineral deposits in which the overlying material is stripped off, the mineral removed and the overburden replaced)
- Trenching
- Pitting
- Delineation drilling
- Preliminary Delineation drilling
- Exploration drilling – drilling is expected to being in May 2011
- Geophysical work (indicate ground and/or air) – both ground and airborne geophysical work will be conducted
- Other – sampling, prospecting, mapping

3. Describe the exploration activities associated with this project:
   - Satellite remote sensing
   - Aircraft remote sensing
   - Soil sampling - 2011
   - Sediment sampling - 2011
   - On land drilling (indicate drill type) 2011
   - On ice drilling (indicate drill type) 2011
   - Water based drilling (indicate drill type)
   - Overburden removal
   - Explosives transportation and storage
   - Work within navigable waters
   - On site sample processing
   - Off site sample processing
   - Waste rock storage
   - Ore storage
   - Tailings disposal
   - Portal and underground ramp construction
   - Landfilling
   - Landfarming
   - Other

B-3. Geosciences

4. Indicate the geophysical operation type:
   a. Seismic (please complete Section E)
   b. Magnetic
   c. Gravity
   d. Electromagnetic
   e. Other (specify)
5. Indicate the geological operation type:
   a. Geological Mapping and sampling
   b. Aerial Photography
   c. Geotechnical Survey
   d. Ground Penetrating Survey
   e. Other (specify)
6. Indicate on a map the boundary subject to air and/or ground geophysical work.
   a. Location to be determined.
7. Provide flight altitudes and locations where flight altitudes will be below 610m.
   a. Airborne magnetics or IP may be conducted at 400m altitude.

B-4. Drilling

8. Provide the number of drill holes and depths (provide estimates and maximums where possible).
    - 2011: We expect to drill up to 10-15 drill holes to a maximum depth of 300 m. This is approximately what will drill per year.
9. Discuss any drill additives to be used.
    - Drill mud, salt
10. Describe method for dealing with drill cuttings.
    - Drill cuttings will be sumped.
11. Describe method for dealing with drill water.
    - Drill water will be sumped at least 31 metres from the normal high water mark of any water body.
12. Describe how drill equipment will be mobilized.
    - Drills will be flown into camp and mobilized to the site using helicopters. If snowpack allows, drills on skids may be hauled on a temporary winter trail to the sites using a challenger or bombardier type vehicle.
13. Describe how drill holes will be abandoned.
    - See the attached Abandonment & Reclamation Plan.
14. If project proposal involves uranium exploration drilling, discuss the potential for radiation exposure and radiation protection measures. Please refer to the *Canadian Guidelines for Naturally Occurring Radioactive Materials* for more information.

B-5. Stripping/ Trenching/ Pit Excavation

15. Discuss methods employed. (i.e. mechanical, manual, hydraulic, blasting, other)
16. Describe expected dimensions of excavation(s) including depth(s).
17. Indicate the locations on a map.
18. Discuss the expected volume material to be removed.
19. Discuss methods used to determine acid rock drainage (ARD) and metal leaching potential and results.

B-6. Underground Activities

20. Describe underground access.
21. Describe underground workings and provide a conceptual plan.
22. Show location of underground workings on a map.
23. Describe ventilation system.
24. Describe the method for dealing with ground ice, groundwater and mine water when encountered.
25. Provide a Mine Rescue Plan.

B-7. Waste Rock Storage and Tailings Disposal

26. Indicate on a map the location and conceptual design of waste rock storage piles and tailings disposal facility.
27. Discuss the anticipated volumes of waste rock and tailings.
28. Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.

B-8. Stockpiles

29. Indicate on a map the location and conceptual design of all stockpiles.
30. Describe the types of material to be stockpiled. (i.e. ore, overburden)
31. Describe the anticipated volumes of each type of material to be stockpiled.
32. Describe any containment measures for stockpiled materials as well as treatment measures for runoff from the stockpile.
33. Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.

B-9. Mine Development Activities

34. Indicate the type(s) of mine development activity(s):
    - Underground
    - Open Pit
    - Strip Mining
    - Other
35. Describe mine activities.
    - Mining development plan and methods
    - Site access
    - Site infrastructure (e.g. airstrip, accommodations, offshore infrastructures, mill facilities, fuel storage facilities, site service roads)
    - Milling process
    - Water source(s) for domestic and industrial uses, required volumes, distribution and management.
    - Solid waste, wastewater and sewage management
    - Water treatment systems
    - Hazardous waste management
    - Ore stockpile management
    - Tailings containment and management
    - Waste rock management
    - Site surface water management
    - Mine water management
    - Pitting and quarrying activities (please complete Section C)
    - Explosive use, supply and storage (including on site manufacturing if required)
    - Power generation, fuel requirements and storage
    - Continuing exploration
    - Other
36. Describe the explosive type(s), hazard class, volumes, uses, location of storage (show on map), and method of storage.

B-10. Geology and Mineralogy

37. Describe the physical nature of the ore body, including known dimensions and approximate shape.
    - The Jericho kimberlite was discovered in 1995 and is 300mx100m. The current diamond resource totals 3.01 million carats inferred and indicated to 190m depth. Jericho was mined between 2006-2008 and produced a total of 780,000 carats of diamonds. There are six known kimberlites on the Carat Property within 10km of the main Jericho kimberlite. In addition there are two unsourced occurrences of kimberlite float and five unresolved indicator mineral dispersions.

38. Describe the geology/ mineralogy of the ore deposit
    - The Jericho Mine is hosted within kimberlite, the source work for diamonds.
39. Describe the host rock in the general vicinity of the ore body.
    - The host rock consists of Archean granitoids in the Slave Structural Province.
40. Discuss the predicted rate of production.
    - N/A
41. Describe mine rock geochemical test programs which have been or will be performed on the ore, host rock, waste rock and tailings to determine acid generation and contaminant leaching potential. Outline methods and provide results if possible.

B-11. Mine

42. Discuss the expected life of the mine.
43. Describe mine equipment to be used.
44. Does the project proposal involve lake and/or pit dewatering? If so, describe the activity as well as the construction of water retention facilities if necessary.
45. Discuss the possibility of operational changes occurring during the mine life with consideration for timing. (e.g. open pit to underground)
46. If project proposal involves uranium mining, consider the potential for radiation exposure and radiation protection measures. Particular attention should be paid to *The Nuclear Safety and Control Act*.

B-12. Mill

47. If a mill will be operating on the property in conjunction with mining, indicate whether mine-water may be directed to the mill for reuse.
48. Describe the proposed capacity of the mill.
49. Describe the physical and chemical characteristics of mill waste as best as possible.
50. Will or does the mill handle custom lots of ore from other properties or mine sites?

SECTION C: Pits and Quarries

1. Describe all activities included in this project.
    - Pitting
    - Quarrying
    - Overburden removal
    - Road use and/or construction (please complete Section A)
    - Explosives transportation and storage
    - Work within navigable waters
    - Blasting
    - Stockpiling
    - Crushing
    - Washing
    - Other
2. Describe any field investigations and the results of field investigations used in determining new extraction sites.
3. Identify any carving stone deposits.
4. Provide a conceptual design including footprint.
5. Describe the type and volume of material to be extracted.
6. Describe the depth of overburden.

7. Describe any existing and potential for thermokarst development and any thermokarst prevention measures.
8. Describe any existing or potential for flooding and any flood control measures.
9. Describe any existing or potential for erosion and any erosion control measures.
10. Describe any existing or potential for sedimentation and any sedimentation control measures.
11. Describe any existing or potential for slumping and any slump control measures.
12. Describe the moisture content of the ground.
13. Describe any evidence of ice lenses.
14. If blasting, describe methods employed.
15. Describe the explosive type(s), hazard class, volumes, uses, location of storage (show on map), and method of storage.
16. Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.
17. Discuss safety measures for the workforce and the public.

SECTION D: Offshore Infrastructure

D-1. Facility

1. Describe any field investigations and the results of field investigations used in selecting the site (i.e. aerial surveys, bathymetric surveys, tidal processes, shoreline erosion processes, geotechnical foundation conditions)
2. Provide a conceptual plan, profile description and drawing(s) indicating shoreline, facility footprint, tidal variations, required vessel draft, keel offset, deck height freeboard
3. Discuss how anticipated loads on the seabed foundation and on the offloading platform will be incorporated into the design.
4. Describe how vessels will manoeuvre around the facility. (e.g. pull alongside or in front)
5. Discuss the anticipated life of the facility.
6. Describe whether part of the facility or project will be located outside of the Nunavut Settlement Area and whether any other regulatory requirements must be met (e.g. CEAA).

D-2. Facility Construction

7. Describe the types of material used for construction (i.e. granular or rock, steel piling or sheet piling, concrete). If material is granular, consider acid rock drainage potential, metal leaching potential, percentage of fines, size.
8. Describe dredging activities.
9. Indicate source of granular or rock material used in construction.
10. List quantities of the various types of material used in construction.
11. Describe construction method(s).
12. Indicate whether a site engineer will be on-site to inspect construction.
13. If proposed construction method involves dumping of fill into water, discuss measures for mitigating the release of suspended solids.

D-3. Facility Operation

14. Describe maintenance activities associated with the facility (e.g. dredging, maintenance to account for potential settlement of facility,)

15. Discuss whether the public will have access to the facility(s) and describe public safety measures.
16. Describe cargo and container handling, transfer and storage facilities.
17. Indicate whether fuel will be transferred from barges at this site and describe the method of that fuel transfer.
18. Discuss frequency of use.

D-4. Vessel Use in Offshore Infrastructure

19. Please complete Section H

SECTION E: Seismic Survey

E-1. Offshore Seismic Survey

1. Indicate whether the survey is 2D or 3D at each site.
2. Describe the type of equipment used, including:
   - Type and number of vessels including length, beam, draft, motors, accommodation capacity, operational speeds when towing and when not towing
   - Sound source (type and number of airguns)
   - Type and number of hydrophones
   - Number, length, and spacing of cables/ streamers
3. On a map, indicate the grid, number of lines and total distance covered by each line, the distance to nearby community/communities and sensitive areas (e.g., National Parks, National Wildlife Areas, Migratory Bird Sanctuaries, recognized breeding grounds or migratory routes).
4. Indicate the discharge volume of the airguns, the depth of airgun discharge, the noise levels of acoustic signal at various distances from the source (e.g.,500 metres,1000 metres), and the frequency and duration of airgun operation at each site.
5. Discuss the potential for dielectric oil to be released from the streamer array, and describe proposed mitigation measures.
6. Indicate whether additional seismic operations are required for start-up of operations, equipment testing, repeat coverage of areas.
7. Indicate whether air gun procedures will include a “ramping up” period and, if so, the proposed rate of ramping up.
8. Indicate whether the measures described in the *Statement of Canadian Practice for Mitigation of Noise in the Marine Environment* will be adhered to for this project.
9. Describe whether any part of the project will be located outside of the Nunavut Settlement Area and whether any other regulatory requirements must be met (e.g. CEAA).

E-2. Nearshore/Onshore Seismic Survey

10. For each site, indicate whether nearshore and onshore surveys will be conducted during the ice season or once the ice has melted
11. Describe how nearshore and onshore areas will be accessed.
12. Describe the survey methods to be used (e.g. explosive charge, vibration, air or water gun, other)
13. Describe equipment to be used
14. If applicable, indicate number, depth and spacing of shot holes

15. Describe explosive wastes including characteristics, quantities, treatment, storage, handling, transportation and disposal methods.

E-3. Vessel Use in Seismic Survey

16. Please complete Section H.

SECTION F: Site Cleanup/Remediation

1. Describe the location, content, and condition of any existing landfills and dumps (indicate locations on a map).
2. Identify salvageable equipment, infrastructure and/or supplies.
3. Provide a list of all contaminants to be cleaned up, anticipated volumes and a map delineating contaminated areas. This includes buildings, equipment, scrap metal and debris, and barrels as well as soil, water (surface and groundwater) and sediment.
4. Describe the degree of pollution/contamination, and list the contaminants and toxicity.
5. Describe technologies used for clean-up and/or disposal of contaminated materials. Include a list of all the physical, chemical and biological cleanup/ remediation methods, operational procedures, and the dosage/frequency of reagents and bacterial medium.
6. Identify and describe all materials to be disposed of off site, including the proposed off site facilities, method of transport and containment measures.
7. Discuss the viability of landfarming, given site specific climate and geographic conditions.
8. Describe the explosive types, hazard classes, volumes, uses, location of storage (indicate on a map), and method of storage (if applicable).
9. If blasting, describe the methods employed.
10. Describe all methods of erosion control, dust suppression, and contouring and re-vegetation of lands.
11. Describe **all** activities included in this project.
    - Excavation (please complete Section B-5)
    - Road use and/or construction (please complete Section A)
    - Airstrip use and/or construction
    - Camp use and/or construction
    - Stockpiling of contaminated material
    - Pit and/or quarry (please complete Section C)
    - Work within navigable waters (please complete Section H)
    - Barrel crushing
    - Building Demolition
    - Other

SECTION G: Oil and Natural Gas Exploration/Activities

G-1. Well Authorization

1. Identify the location(s) of the well centre(s) by latitude and longitude. Attach a map drawn to scale showing locations of existing and proposed wells.
2. Indicate if the site contains any known former well sites.
3. Include the following information for each well:
    a. Well name
    b. Surface location
    c. Proposed bottomhole location

d. Ground elevation (in metres)
e. Spacing area (in units)
f. Identify the well type:
    i. Production
    ii. Injection
    iii. Disposal
    iv. Observation
    v. Storage
    vi. Experimental
    vii. Other (specify)
g. Identify the well classification:
    i. Exploratory wildcat
    ii. Exploratory outpost
    iii. Development
h. Drilling operation (deviation):
    i. Vertical
    ii. Directional
    iii. Horizontal
    iv. Slant
i. Objective Zones (copy chart style below)

Objective Formation	Fluid (oil/gas/water)	Depth (mTVD)	Core (Y/N)

j. Proposed Total Depth in mTDV and mMD.
k. Formation of Total Depth
l. Sour well? (yes or no)
    i. If Yes: Maximum H_2S concentration in mol/kmol
        Emergency planning zone radius in km
m. Blowout Prevention (Well Class I – VI)
n. Deviation Surveys
    i. Will be run at intervals less than 150m? (yes or no)
o. Wireline logs
    i. Will run logs in hole for surface casing? (yes or no)
    ii. Will run a minimum of 2 porosity measuring logs? (yes or no)

G-2. On-Land Exploration

4. Indicate if the site contains any known:
    a. Waste Dumps
    b. Fuel and Chemical Storage Areas
    c. Sump Areas
    d. Waste Water Discharge Locations
5. Attach maps drawn to scale showing locations of existing and proposed items identified in (2) above, as well as all proposed:
    a. Sumps
    b. Water sources
    c. Fuel and chemical storage facilities
    d. Drilling mud storage areas

    e. Transportation routes
6. If utilizing *fresh water*, estimate maximum drawdown and recharge capability of the river or lake from which water will be drawn.
7. Indicate if permafrost is expected to be encountered under:
    a. Camp Facilities
    b. Well Site
    c. Access Routes
    d. Sumps
    e. Other: _____
8. Indicate any potential for encountering artesian aquifers or lost circulation within the surface hole (to casing depth).
9. Will drilling wastes contain detrimental substances (including, but not limited to, oil-based or invert mud and high salinity fluids)? If yes, indicate the substances and estimated volumes.
10. Indicate methods for disposal of drilling wastes:
    a. Sump
    b. Down Hole (requires NEB approval)
    c. On-Site Treatment (provide plan)
    d. Off-Site (give location and method of disposal)
11. If a sump is being used, attach the following information:
    a. scale drawings and design of sumps
    b. capacity in cubic metres
    c. berm erosion protection
    d. soil permeability and type
    e. recycling/reclaiming waters
    f. surface drainage controls
    g. abandonment procedures
12. Attach the proposed or existing contingency plan which describes the course of action, mitigative measures and equipment available for use in the event of system failures and spills of hazardous materials.
13. Attach an outline of planned abandonment and restoration procedures.

G-3. Off-Shore Exploration

14. Will drilling wastes contain detrimental substances (including, but not limited to, oil-based or invert mud and high salinity fluids)? If yes, indicate the substances and estimated volumes.
15. Attach the proposed or existing contingency plan which describes the course of action, mitigative measures and equipment available for use in the event of system failures and spills of hazardous materials.
16. Attach an outline of planned abandonment and restoration procedures.
17. Please complete Section H.

G-4. Rig

18. Type of Rig. Draw works, make and model
19. Derrick/Mast make and model
20. H.P. available to draw-works

SECTION H: Marine Based Activities

H-1. Vessel Use

1. Describe the purpose of vessel operations.
2. List classes and sizes of vessels to be used.
3. Indicate crew size.
4. Indicate operating schedule.
5. Provide a description of route to be traveled (include map).
6. Indicate whether the vessel will call at any ports. If so, where and why?
7. Describe wastes produced or carried onboard including the quantities, storage, treatment, handling and disposal methods for the following:
    a. Ballast water
    b. Bilge water
    c. Deck drainage
    d. Grey and black water
    e. Solid waste
    f. Waste oil
    g. Hazardous or toxic waste
8. List all applicable regulations concerning management of wastes and discharges of materials into the marine environment
9. Provide detailed Waste Management, Emergency Response and Spill Contingency Plans
10. Does the vessel(s) possess an Arctic Pollution Prevention Certificate? If yes, indicate the date of issue and the name of the classification society.
11. Describe the source of fresh water and potable water
12. Indicate whether ice-breaking will be required, and if so, approximately where and when? Discuss any possible impacts to caribou migration, Inuit harvesting or travel routes, and outline proposed mitigation measures.
13. Indicate whether the operation will be conducted within the Outer Land Fast Ice Zone of the East Baffin Coast. For more information on the Outer Land Fast Ice Zone, please see the Nunavut Land Claims Agreement (NLCA), Articles 1 and 16.
14. Indicate whether Fisheries or Environmental Observers or any other *Qualified Marine Observer* will be onboard during the proposed project activities. If yes, describe their function and responsibilities.
15. Describe all proposed measures for reducing impacts to marine habitat and marine wildlife (including mammals, birds, reptiles, fish, and invertebrates).
16. Describe whether any part of the project will be located outside of the Nunavut Settlement Area and whether any other regulatory requirements must be met (e.g. CEAA).

H-2. Disposal at Sea

17. Provide confirmation you have applied for a *Disposal at Sea* permit with Environment Canada.
18. Provide a justification for the disposal at sea.
19. Describe the substance to be disposed of, including chemical and physical properties.
20. Indicate the location where the disposal is to take place.
21. Describe the frequency of disposals (disposals per day/week or month).
22. Describe the route to be followed during disposal and indicate on a map.

23. Indicate any previous disposal methods and locations.
24. Provide an assessment of the potential effects of the disposal substance on living marine resources.
25. Provide an assessment of the potential of the disposal substance, once disposed of at sea, to cause long-term physical effects.
26. Describe all mitigation measures to be employed to minimize the environmental, health, navigational and aesthetic impacts during loading, transport and disposal.

SECTION I: Municipal and Industrial Development

1. Describe the business type, including public, private, limited, unlimited or other.
2. Describe the activity (e.g. development of quarry, development of hydroelectric facility, bulk fuel storage, power generation with nuclear fuels or hydro, tannery operations, meat processing and packing, etc.).
3. Describe the production process or service provision procedures.
4. Describe the raw materials used in this activity, the storage and transportation methods. If hazardous materials are included in raw materials, products or by-products; include safety regulations methodology.
5. Provide detailed information about the structure and/or building in which the activity will be conducted.
6. List the PPE (personal protective equipment) and tools to be used to protect personal health and safety.
7. Describe the firefighting equipment that are or will be installed.
8. Describe the noise sources, noise level in work area, technical measurements that will be adopted to abate the noise levels and regulatory requirements for noise abatement and noise levels.
9. Describe the type of gaseous emission that will be produced during this activity. Include the allowable thresholds and mitigation measures.
10. Describe odours that the activity might release and include corresponding allowable threshold. Describe mitigation measures if thresholds are exceeded.
11. Describe radiation sources that might be emitted during the activity. Include type and source and include mitigation measures. Also describe preventative measures for human exposure (i.e. PPE).
12. Discuss the employee safety and environment protection training program.
13. If the activity involves a bulk fuel storage facility, include drawings showing the bulk fuel storage facility location in proximity to natural water courses, high water marks, etc.
14. If the activity involves the development of a new quarry or expansion of an existing quarry, complete Section C.

4. DESCRIPTION OF THE EXISTING ENVIRONMENT

Describe the existing environment, including physical, biological and socioeconomic aspects. Where appropriate, identify local study areas (LSA) and regional study areas (RSA).

Please note that the detail provided in the description of the existing environment should be appropriate for the type of project proposal and its scope.

The following is intended as a guide only.

Physical Environment

Please note that a description of the physical environment is intended to cover all components of a project, including roads/trails, marine routes, etc. that are in existence at present time.

- Proximity to protected areas, including:
  i. designated environmental areas, including parks;
  ii. heritage sites;
  iii. sensitive areas, including all sensitive marine habitat areas;
  iv. recreational areas;
  v. sport and commercial fishing areas;
  vi. breeding, spawning and nursery areas;
  vii. known migration routes of terrestrial and marine species;
  viii. marine resources;
  ix. areas of natural beauty, cultural or historical history;
  x. protected wildlife areas; and
  xi. other protected areas.
- Eskers and other unique landscapes (e.g. sand hills, marshes, wetlands, floodplains).
- Evidence of ground, slope or rock instability, seismicity.
- Evidence of thermokarsts.
- Evidence of ice lenses.
- Surface and bedrock geology.
- Topography.
- Permafrost (e.g. stability, depth, thickness, continuity, taliks).
- Sediment and soil quality.
- Hydrology/ limnology (e.g. watershed boundaries, lakes, streams, sediment geochemistry, surface water flow, groundwater flow, flood zones).
- Tidal processes and bathymetry in the project area (if applicable).
- Water quality and quantity.
- Air quality.
- Climate conditions and predicted future climate trends.
- Noise levels.
- Other physical Valued Ecosystem Components (VEC) as determined through community consultation and/or literature review.

The project area is located in the northern portion of the Slave Structural Province, northwest of Contowyto Lake. It is within the Contowyto-Itchen Lake Region and is in the upper Burnside River drainage basin. The terrain is defined by many small lakes and minimal topography. The vegetation is predominately heath or rocky heath with small localized areas of riparian and sedge meadows. An esker complex runs NE-SW through the northern area of the project area. The Willingham hills, an area of rocky cliffs frequented as nesting sites for raptor species are in the eastern portion of the proposed project area. Large mammal species that may be encountered within the project area both seasonally and intermittently are grizzly bear, arctic wolf, arctic fox, muskox and caribou.

Biological Environment

- Vegetation (terrestrial as well as freshwater and marine where applicable).
- Wildlife, including habitat and migration patterns.
- Birds, including habitat and migration patterns.

- 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.
- Aquatic (freshwater and marine) species, including habitat and migration/spawning patterns.
- Other biological Valued Ecosystem Components (VEC) as determined through community consultation and/or literature review.
-

Vegetation in the project area comprises arctic tundra; plants are generally less than six inches in height, and include grasses, heathers, low-bush evergreens, and arctic wildflowers. There are no trees in the area, though dwarf birch and willow may be found in sheltered areas.

Baseline work and operational data exists for the area.

Socioeconomic Environment

- Proximity to communities.
- Archaeological and culturally significant sites (e.g. pingos, soap stone quarries) in the project (Local Study Area) and adjacent area (Regional Study Area).
- Palaeontological component of surface and bedrock geology.
- Land and resource use in the area, including subsistence harvesting, tourism, trapping and guiding operations.
- Local and regional traffic patterns.
- Human Health, broadly defined as a complete state of wellbeing (including physical, social, psychological, and spiritual aspects).
- Other Valued Socioeconomic Components (VSEC) as determined through community consultation and/or literature review.

The Jericho Diamond Mine is 266 km southeast of the Hamlet of Kugluktuk and 450 km from the Hamlet of Cambridge Bay. Both communities previously enjoyed employment and business opportunities at the Jericho Diamond Mine. Some residents still continue to enjoy employment and business opportunities at both the Ekati and Diavik Diamond Mines in the Northwest Territories and there is hope for more employment with Newmont's Hope Bay Project. Community residents have experience in the past with exploration activities in the Region and also with various exploration and preliminary mine training programs.

Local residents continue to live a traditional lifestyle where possible with harvesting caribou, musk ox and fishing pursuits. Tourism including the occasional cruise ship generally include hunting and fishing and visiting Bloody Falls the site of a historic battle between the Inuit and the First Nations to the south.

5. IDENTIFICATION OF IMPACTS AND PROPOSED MITIGATION MEASURES

1. Please complete the attached Table 1 – Identification of Environmental Impacts, taking into consideration the components/activities and project phase(s) identified in Section 4 of this document. Identify impacts in Table 1 as either positive (P), negative and mitigable (M), negative and non- mitigable (N), or unknown (U).
2. Discuss the impacts identified in the above table.
3. Discuss potential socioeconomic impacts, including human health.
4. Discuss potential for transboundary effects related to the project.
5. Identify any potentially adverse effects of the project proposal on species listed under the *Species at Risk Act (SARA)* and their critical habitats or residences, what measures will be taken to avoid or lessen those effects and how the effects will be monitored.
6. Discuss proposed measures to mitigate all identified negative impacts.

The majority of work being proposed is not expected to impact the environment in a negative way.

Geological mapping, prospecting, and rock/soil sampling is not expected to affect the environment or wildlife population in a negative way. Positive impacts are related to the employment of local people as field assistants, prospectors, camp personnel, and wildlife monitors.

In response to concerns about disturbance to helicopters, the helicopter used to transport crews into the field from camp will be restricted to an altitude of not less than 300 metres, unless safety dictates otherwise.

When airborne geophysics is being performed, it will be conducted so as not to disturb wildlife. Monitors will ensure that when wildlife are present, the field crew is contacted and the survey will be suspended until such time that the area is free from wildlife.

All fuel caches will be supplied with a complete spill kit, including highly absorbent pads and one empty drum, for the highly unlikely event of a fuel spill. Each fuel cache will also be equipped with a fire extinguisher. Small fuel caches in the field are placed in shallow natural depressions which are a minimum of 31 metres from the normal high-water mark of nearby bodies of water.

Used greases and oil will be either removed from the site for proper disposal or incinerated. All drill water will be treated in sumps to collect cuttings, allowing the water to drain into the surrounding landscape. All sumps will be located a minimum of 31 metres from the normal high-water mark of any water body. All equipment, timbers, hoses, fuel drums, etc. will be removed from the drill site following completion of the borehole. Casing may or may not be left in the borehole temporarily, depending on whether or not the borehole requires re-entry at a later date; the majority of boreholes will have casing removed after completion. Drill collars will be marked for identification purposes.

6. CUMULATIVE EFFECTS

A cumulative impact (or effect) can be defined as the impact on the environment that results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions. Cumulative impacts can also result from individually minor but collectively significant actions taking place over a period of time.

Discuss how the effects of this project interact with the effects of relevant past, present and reasonably foreseeable projects in a regional context.

Given the proximity to the Jericho Mine, the Lupin Mine and the Izok exploration program, the potential for cumulative effects does exist. Shear is currently developing a monitoring program as a pilot project to assess the ability to collect meaningful data on a broader scale to encompass these other projects and evaluate effects.

7. SUPPORTING DOCUMENTS

Where relevant, provide the following supporting documents:

- Abandonment and Decommissioning Plan
- Existing site photos with descriptions
- Emergency Response Plan
- Comprehensive Spill Prevention/Plan (must consider hazardous waste and fuel handling, storage, disposal, spill prevention measures, staff training and emergency contacts)
- Waste Management Plan/Program
- Monitoring and Management Plans (e.g. water quality, air pollution, noise control and wildlife protection etc.)
- If project activities are located within Caribou Protection Areas or Schedule 1 Species at Risk known locations, please provide a Wildlife Mitigation and Monitoring Plan

In addition, for Project Type 9 (Site Cleanup/Remediation), please provide the following additional supporting documents:

- Remediation Plan including cleanup criteria and how the criteria were derived.
- Human Health Risk Assessment of the contaminants at the site.

See attached supporting documents.

THE NUNAVUT IMPACT REVIEW BOARD
PROJECT SPECIFIC INFORMATION REQUIREMENT - PART 2 FORM

TABLE 1 - IDENTIFICATION OF ENVIRONMENTAL IMPACTS

		ENVIRONMENTAL COMPONENTS	PHYSICAL	designated environmental areas (ie. Parks, Wildlife Protected 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	other VEC:	other VEC:	other VEC:	BIOLOGICAL	vegetation	wildlife, including habitat and migration patterns	birds, including habitat and migration patterns	aquatic species, incl. habitat and migration/spawnin	wildlife protected areas	other VEC:	other VEC:	other VEC:	SOCIO-ECONOMIC	archaeological and cultural historic sites	employment	community wellness	community infrastructure	human health	other VSEC
	PROJECT COMPONENTS/ACTIVITIES																																
CONSTRUCTION																																	
OPERATION	ground geophysics														N						M	M							P				
	airborne geophysics														N						M	M	M						P				
	core drilling						M								N					M	M	M	M						P				
	Prospecting and Mapping																												P				
DECOMMISSIONING																																	

Notes: Please indicate in the matrix cells whether the interaction causes an impact and whether the impact is:

P *Positive*
N *Negative and non-mitigatable*
M *Negative and mitigatable*
U *Unknown*
If no impact is expected then please leave the cell blank

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	PROJECT COMPONENTS/ACTIVITIES																																
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OPERATION	ground geophysics														N						M	M							P				
	airborne geophysics														N						M	M	M						P				
	core drilling						M								N					M	M	M	M						P				
	Prospecting and Mapping																												P				
DECOMMISSIONING																																	

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