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 Madrid Advanced Exploration Project

2. Applicant's full name and mailing address:

TMAC Resources Inc.
95 Wellington Street West
Suite 1010, P.O. Box 44
Toronto, Ontario, M5J 2N7

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

M. John Roberts
Vice President, Environmental Affairs
TMAC Resources Inc.
95 Wellington Street West
Suite 1010, P.O. Box 44
Toronto, Ontario, M5J 2N7
Phone: 416-628-0126
Fax: 416-644-9337
e-mail: john.roberts@tmacresources.com

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)
	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 active permits, licences, or other authorizations related to the project proposal, and their expiry date(s):

Hope Bay Belt Authorizations

Quarry Permits (KIA)
KTP308Q010 - Quarries A, B, D (expires Jan 20, 2015)
KTP307Q010 - Quarries 2, 3, 4 (expires Jan 20, 2015)
IOL Surface tenure – Quarries G and H (application pending)

Land Use Licences (KIA)
KTL303C056 - Hope Bay Land Use (expires Jan 20, 2015)
KTL306C003 - Boston Land Use Licence (expires Jan 20, 2015)
KTL306F007 - Winter Road Land Use (expires Jan 20, 2015)
IOL Surface tenure for advanced exploration - Madrid (application pending)

Mineral Lease (NTI)
IOL Exploration Agreement BB60-00-01:TOK 1 Renewal Anniversary Date Dec 31, 2014
IOL Exploration Agreement BB60-00-03:TOK 3 Renewal Anniversary Date Dec 31, 2014

Mining Lease (AANDC/INAC)
#4648 Madrid 1 and #4649 Madrid 2 Expires Oct 12, 2022

Commercial Lease (KIA)
KTCL313D001 - Commercial Lease (expires Sept 13, 2018)

Water Licences (NWB)
2BB-BOS1217 Boston Advanced Exploration Project (expires July 31, 2017)
2AM-DOH1323 Doris North Mining and Milling Undertaking (expires Aug 15, 2023)
2BE-HOP1222 Hope Bay Regional Exploration Program (June 30, 2022)
2BB-Madrid Advanced Exploration Program (application pending)

3. List the pending permits, licences, or other authorizations related to the project proposal:

NWB water licence and IOL surface tenure

4. Has this project or any components of this project been previously screened or reviewed by NIRB?

☒ **YES** ☐ **NO**

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

Exploration and bulk sampling activities at Boston have been screened and determined to be exempt **(EX148)** and regional exploration activities across the Hope Bay Belt have also been screened and determined to be exempt. Advanced exploration and mine development at Doris North Project has been screened and undergone environmental assessment (screening **05MN047** and Project Certificate 003).

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	☐	**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	☐			☐

Please note:

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.

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

3a. If Project Type 12, 13 or 14 was selected above, complete the table and questions below.
Not applicable

Transportation Type	Quantity	Proposed Use	Length of Use
E.g. Helicopter	*1*	*Site to site pick ups and drop offs*	*6 days*

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.*

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.

4. Personnel

Total No. of personnel on site = (A) Peak is 70

Total No. of days on-site = (B) 365

Total No. of Person days (A) × (B) = 25,550 per year

5. Timing

Period of operation: from Jan 1 to Dec 31 each year

Proposed term of authorization: from June 2015 to May 2025

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.

The Madrid area of the belt is located approximately 130 km southwest of Cambridge Bay. The nearest communities are Umingmaktok (70 km to the southwest of the Property) and Kingaok (Bathurst Inlet; 150 km to the southwest of the Property).

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

The Hope Bay Belt is a north-south trending greenstone belt, with economically viable zones of gold mineralization that can be divided into three areas: Doris, Madrid, and Boston. Over the past twenty years, the belt has undergone considerable exploration and development activities by TMAC and previous operators. The Doris North Project is Phase 1 of a belt-wide development, with gold production from an underground mine located near Doris Lake. The Hope Bay Belt has significant infrastructure including air strips, roads, fuel storage, a port facility, power plants, administration, geology, and lab buildings, and underground development at the Doris and Boston areas. Phase 2 includes the development of the Madrid and/or Boston areas, including infrastructure and waste management facilities to support underground and open pit mining and processing. The proposed advanced exploration at Madrid will help inform the planning and design of Phase 2 development.

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

Sites identified in area will be recovered as per current GN requirements and a "chance find" policy will be implemented

7. Land Status (check all that applies):

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

8a. Co-ordinates:

	Lat/Long		UTM	
NE	68° 06′ 34″ N	106° 32′ 22″ W	7555864	435954
NW	68° 08′ 07″ N	106° 37′ 44″ W	7555840	432309
SE	68° 00′ 13″ N	106° 29′ 00″ W	7544000	438000
SW	68° 00′ 07″ N	106° 40′ 29″ W	7544000	430000

NTS Map Sheet No: 077A03 Hope Bay (1:50 000)

(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

Min Lat (degree/minute) _____ Min Long (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.

Refer to "Madrid Advanced Exploration Program Type B Water Licence Application Supplemental Information Report" Section 2.0 for a non-technical description of the project proposal and appropriate translations.

SECTION 5: MATERIAL USE

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

Refer to Part 2 Project Specific Information Requirement (PSIR) Form.

2a. Detail fuel and hazardous material use:

Refer to Part 2 Project Specific Information Requirement (PSIR) Form

2b. Describe the proposed Spill Prevention Plan.

Spill Prevention and Response will be in accordance with the approved Hope Bay Spill Contingency Plan with updates as required to incorporate the Madrid Advanced Exploration Project.

3a. Detail the anticipated daily water consumption rates

Daily amount (m^3)	Proposed water retrieval methods	Proposed water retrieval location
Up to 295	Submersible pump and storage in portable tanks for transport via truck	Patch Lake, Windy Lake and lakes local to diamond drill locations (>15,000m2)

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

X YES NO

If yes, what class of licence?

☐ **Class A Water Licence** X Class B Water Licence

SECTION 6: WASTE DISPOSAL AND TREATMENT METHODS

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

Refer to Part 2 Project Specific Information Requirement (PSIR) Form.

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

Refer to Part 2 Project Specific Information Requirement (PSIR) Form.

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

Waste management will be in accordance with the current Plans for the Doris North Project (2AM-DOH1323). Refer to Part 2 Project Specific Information Requirement (PSIR) Form.

SECTION 7: COMMUNITY INVOLVEMENT & REGIONAL BENEFITS

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

Refer to "Madrid Advanced Exploration Program Type B Water Licence Application Supplemental Information Report" Section 10.0

Community	Name	Organization	Date Contacted

SECTION 8: GENERAL QUESTIONS

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

X **YES** (see attached Points West memo)
☐ **NO**

SECTION 9: APPLICANT SIGNATURE

Please sign and date your application:

Signature	Vice President, Environmental Affairs **Title**	December 8, 2014 **Date**

1. GENERAL PROJECT INFORMATION REQUIREMENTS		Location (section) within Madrid Advanced Exploration Type B Water license application Supplemental Report
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.	Application, Supplemental Information Report: Section 2.1.1 (Table 2.1-1)
2	Map of the project site within a regional context indicating the distance to the closest communities.	Supplemental Information Report: Section 3.5.1 (Figure 3.5-1)
3	Map of any camp site including locations of camp facilities.	Supplemental Information Report: Section 3.5.1 (Figure 3.5-2)
4	Map of the project site indicating existing and/or proposed infrastructure, proximity to water bodies and proximity to wildlife and wildlife habitat.	Supplemental Information Report: Figure 3.5-2, 4.2-1, 4.3-1
Project General Information		
5	Discuss the need and purpose of the proposed project.	Supplemental Information Report: Section 3.7
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).	Supplemental Information Report: Section 10.10.1 to 10.10.4, Appendix 4
7	Provide a schedule for all project activities.	Application, Supplemental Information Report: Section 3.4
8	List the acts, regulations and guidelines that apply to project activities.	Supplemental Information Report: Section 1
9	List the approvals, permits and licenses required to conduct the project.	Application and Supplemental Information Report: Section 10.2 (Table 10.2-1)
DFO Operational Statement (OS) Conformity		
10	Indicate whether any Department of Fisheries and Oceans (DFO) Operational Statement (OS) activities apply to the project proposal	Supplemental Information Report: Section 4
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.	Supplemental Information Report: Section 4, Appendix 4, Section 6.5
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).	Supplemental Information Report: Section 4.2.1, 4.3.1 (Figure 4.2-1, 4.3-1)
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.	not applicable
14	If an airstrip is being constructed, provide the following information: a. Discuss design considerations for permafrost b. Discuss construction techniques c. 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). d. Describe dust management procedures. e. Provide a map showing location of proposed airstrip.	not applicable
15	Describe expected flight altitudes, frequency of flights and anticipated flight routes.	not applicable
Camp Site		
16	Describe all existing and proposed camp structures and infrastructure	Supplemental Information Report: Section 4.1.4
17	Describe the type of camp: a. Mobile b. Temporary c. Seasonal d. Permanent e. Other	Supplemental Information Report: Section 4.1.4
18	Describe the maximum number of personnel expected on site, including the timing for those personnel involved with the project.	Supplemental Information Report: Section 4.1.4
Equipment		
19	Provide a list of equipment required for the project and discuss the uses for the equipment.	Supplemental Information Report: Section 4.2.6 and 4.3.6 (Tables 4.2-1 and 4.2-2)
20	If possible, provide digital photos of equipment.	Not available
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.	Application, Supplemental Information Report: Section 4.2.6, 4.2.7, 4.3.6, 4.3.7, 6.1
22	Describe the estimated rate of water consumption (m^3/day).	Application, Supplemental Information Report: Section 6.1 (Table 6.1-1)
23	Describe how waste water will be managed. If relevant, provide detail regarding location of sumps, including capacity of sumps and monitoring.	Application, Supplemental Information Report: Section 4.2.11.1, 4.3.11, 6.4, 7.1 to 7.5, 8.1 (Table 8.1-1) and 8.2
24	If applicable, discuss how surface water and underground water will be managed and monitored.	Supplemental Information Report: Section 6.3.1, 6.3.2, 10.4.3 and 10.4.5.1

Waste Water (Grey water, Sewage, Other)		
25	Describe the quantities, treatment, storage, transportation, and disposal methods for the following (where relevant): - Sewage - Camp grey wate - Combustible solid waste - Non-combustible solid waste, including bulky items/scrap metal - Hazardous waste or oil - Contaminated soils/snow - Empty barrels/fuel drums - Any other waste produced	Supplemental Information Report: Section 7.1 (Table 7.1-1) and Section 8.1 (Table 8.1-1)
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.	Supplemental Information Report: Section 4.2.11.3 and 8.1 (Table 8.1-1)
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.	Supplemental Information Report: Section 4.1.5, 4.2.4 (Figure 4.2-1), 4.2.10.3, 4.3.4 (Figure 4.3-1), 4.3.10 and 4.4.1
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.	Supplemental Information Report: Section 4.2.4, 4.3.4 and 4.4.1
29	Describe the method of fuel transfer and the method of refuelling.	Supplemental Information Report: Section 4.2.10.3 and 4.3.10
30	Describe spill control measures in place.	Supplemental Information Report: Section 4.2.10.3, 4.3.10, 4.4.1 and 8.1 (Table 8.1-1)
Chemicals and Hazardous Materials*		
Including 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.	Supplemental Information Report: Section 4.2.10.2, 4.2.11.3, 4.3.10, 4.3.11, Appendix 4 Figure 4.2-1 and 4.3-1
32	Describe any secondary containment measures to be employed, including the type of material or system used.	Supplemental Information Report: Section 4.2.10.2, 4.3.10, Appendix 4
33	Describe the method of chemical transfer.	Supplemental Information Report: Section 4.2.10.2, 4.2.11.3, 4.3.10, 4.3.11, Appendix 4
34	Describe spill control measures in place.	Supplemental Information Report: Section 8.1 (Table 8.1-1) and 10.8
Workforce and Human Resources/Socio-Economic Impacts		
35	Discuss opportunities for training and employment of local Inuit beneficiaries.	Supplemental Information Report: Section 11.2
36	Discuss workforce mobilization and schedule, including the duration of work and rotation length, and the transportation of workers to site.	Supplemental Information Report: Section 11.2
37	Discuss, where relevant, any specific hiring policies for Inuit beneficiaries.	Supplemental Information Report: Section 11.2
Public Involvement/ Traditional Knowledge		
38	Indicate which communities, groups, or organizations would be affected by this project proposal.	Supplemental Information Report: Section 5.5 and Section 11.2
39	Describe any consultation with interested Parties which has occurred regarding the development of the project proposal.	Supplemental Information Report: Section 11.2
40	Provide a summary of public involvement measures, a summary of concerns expressed, and strategies employed to address any concerns.	Supplemental Information Report: Section 11.2
41	Describe how traditional knowledge was obtained, and how it has been integrated into the project.	Supplemental Information Report: Section 5.5 and Section 11.2
42	Discuss future consultation plans.	Supplemental Information Report: Section 11.2
2. PROJECT SPECIFIC INFORMATION		
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)	Supplemental Information Report: Section 4.2, 4.3, Appendix 4C
2	Provide a conceptual plan of the road, including example road cross-sections and water crossings.	Supplemental Information Report: Section 4.2, 4.3, Appendix 4C
3	Discuss the type and volume of traffic using the road/trail (i.e. type of vehicles and cargo and number of trips annually).	Supplemental Information Report: Section 4.2, 4.3, Appendix 4C
4	Discuss public access to the road.	The roads within the Madrid area are not public roads - there is no public road access into the Hope Bay Project area.
5	Describe maintenance procedures.	Supplemental Information Report: Section 4.2, 4.3, Appendix 4C
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).	not applicable

A-2. All-Weather Road/Access Trail		
7	Discuss road design considerations for permafrost.	Supplemental Information Report: Section 4.2, 4.3, Appendix 4C
8	Describe the construction materials (type and sources for materials), and the acid rock drainage (ARD) and metal leaching characteristics of the construction materials.	Supplemental Information Report: Section 4.2, 4.3, Appendix 4C
9	Discuss construction techniques, including timing for construction activities.	Application, Supplemental Information Report: Section 4.2, 4.3, 4.4, Appendix 4C
10	Indicate on a map the locations of designated refuelling areas, water crossings, culverts, and quarries/borrow sources.	Supplemental Information Report: Section 4.2, 4.3, Appendix 4C
11	Identify the proposed traffic speed and measures employed to ensure public safety.	There are no public roads associated with the project. Otherwise 20 to 25km/hour in congested areas, up to 40km/hour for light vehicles in non-congested areas.
12	Describe dust management procedures.	Supplemental Information Report: Section 4.2, 4.3, Appendix 4, Section 6.1 and 10.5.1
SECTION B: Mineral Exploration /Advanced Exploration /Development		
B-1. Project Information		
1	Describe the type of mineral resource under exploration.	Application, Supplemental Information Report: Section 5.2, Appendix 5
B-2. Exploration Activity		
2	Indicate the type of exploration activity: - Bulk Sampling (underground or other) - Stripping - Trenching - Pitting - Delineation drilling - Prelimnary delineation drilling - Exploration Drilling - Geophysical Work (ground and/or air) - Other	Application, Supplemental Information Report: Section 3.5, 3.6 and 4.4
3	Describe the exploration activities associated with this project: - Satellite remote sensing - Aircraft remote sensing - Soil sampling - Sediment sampling - On land drilling (indicate drill type) - On ice drilling (indicate drill type) - 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	Application, Supplemental Information Report: Section 3.5, 3.6 and 4.2 to 4.4
B-3. Geosciences		
4	Indicate the geophysical operation type: a. Seismic b. Magnetic c. Gravimetric d. Electromagnetic e. Other	Supplemental Information Report: Section 4.4, Appendix 4
5	Indicate the geological operation type: a. Geological Mapping b. Aerial Photography c. Geotechnical Survey d. Ground Penetrating Survey e. Other	Supplemental Information Report: Section 4.4, Appendix 4
6	Indicate on a map the boundary subject to air and/or ground geophysical work.	Supplemental Information Report: Section 3.5.1 (Figure 3.5-2)
7	Provide flight altitudes and locations where flight altitudes will be below 610m.	TBD

B-4. Drilling		
8	Provide the number of drill holes and depths (provide estimates and maximums where possible).	Supplemental Information Report: Section 3.6, Section 4
9	Discuss any drill additives to be used.	Supplemental Information Report: Section 4.4.1
10	Describe method for dealing with drill cuttings.	Supplemental Information Report: Section 4.4.1
11	Describe method for dealing with drill water.	Supplemental Information Report: Section 4.4.2
12	Describe how drill equipment will be mobilized.	Supplemental Information Report: Section 4.4.1
13	Describe how drill holes will be abandoned.	Supplemental Information Report: Section 4.4.3
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.	not applicable
B-5. Stripping/ Trenching/ Pit Excavation		
15	Discuss methods employed. (i.e. mechanical, manual, hydraulic, blasting, other)	not applicable
16	Describe expected dimensions of excavation(s) including depth(s).	not applicable
17	Indicate the locations on a map.	not applicable
18	Discuss the expected volume material to be removed.	not applicable
19	Discuss methods used to determine acid rock drainage (ARD) and metal leaching potential and results.	not applicable
B-6. Underground Activities		
20	Describe underground access.	Supplemental Information Report: Section 4, Appendix 4
21	Describe underground workings and provide a conceptual plan.	Supplemental Information Report: Section 4, Appendix 4
22	Show location of underground workings on a map.	Supplemental Information Report: Section 4, Appendix 4
23	Describe ventilation system.	Supplemental Information Report: Section 4, Appendix 4
24	Describe the method for dealing with ground ice, groundwater and mine water when encountered.	Supplemental Information Report: Section 4, Appendix 4, Section 10.4.3
25	Provide a Mine Rescue Plan.	TBD
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.	Supplemental Information Report: Section 4, Appendix 4
27	Discuss the anticipated volumes of waste rock and tailings.	Supplemental Information Report: Section 4.2.3, 4.3.3, Appendix 4
28	Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.	Supplemental Information Report: Section 4, Appendix 4
B-8. Stockpiles		
29	Indicate on a map the location and conceptual design of all stockpiles.	Supplemental Information Report: Section 4, Appendix 4
30	Describe the types of material to be stockpiled. (i.e. ore, overburden)	Supplemental Information Report: Section 4.2.2, 4.3.2, Appendix 4
31	Describe the anticipated volumes of each type of material to be stockpiled.	Supplemental Information Report: Section 4.2.2, 4.3.2, Appendix 4
32	Describe any containment measures for stockpiled materials as well as treatment measures for runoff from the stockpile.	Supplemental Information Report: Section 4.2.2, 4.2.7, 4.2.8, 4.3.2, 4.3.7, 4.3.8, Appendix 4
33	Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.	Supplemental Information Report: Section 8.3, Appendix 8B
B-9. Mine Development Activities		
34	Indicate the type(s) of mine development activity(s): - Underground **BULK SAMPLE** - Open Pit - Strip Mining - Other	Supplemental Information Report: Section 4
35	Describe mine activities.	Supplemental Information Report: Section 4.1 to 4.4
	- Mining development plan and methods - Mine development plan - Site access - Site infrastructure - 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 - Explosives use, supply and storage - Power generation, fuel requirements and storage - Continuing exploration	Supplemental Information Report: Section 4.1 to 4.4, 6.4, 8.1 to 8.4 and Table 8.1-1
36	Describe the explosive type(s), hazard class, volumes, uses, location of storage (show on map), and method of storage.	Supplemental Information Report: Section 4.2.10.1, 4.3.10

B-10. Geology and Mineralogy		
37	Describe the physical nature of the ore body, including known dimensions and approximate shape.	Supplemental Information Report: Section 5.2, Appendix 5
38	Describe the geology/ mineralogy of the ore deposit	Supplemental Information Report: Section 5.2, Appendix 5
39	Describe the host rock in the general vicinity of the ore body.	Supplemental Information Report: Section 5.2, Appendix 5
40	Discuss the predicted rate of production.	Supplemental Information Report: Section 4
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.	Supplemental Information Report: Section 4, Appendix 4, 5 and 8
B-11. Mine		
42	Discuss the expected life of the mine.	Supplemental Information Report: Section 3.4
43	Describe mine equipment to be used.	Supplemental Information Report: Section 4.2.6 and 4.3.6 (Tables 4.2-1 and 4.2-2)
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.	not applicable
45	Discuss the possibility of operational changes occurring during the mine life with consideration for timing. (e.g. open pit to underground)	not applicable
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* .	not applicable
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.	not applicable
48	Describe the proposed capacity of the mill.	not applicable
49	Describe the physical and chemical characteristics of mill waste as best as possible.	not applicable
50	Will or does the mill handle custom lots of ore from other properties or mine sites?	not applicable
SECTION C: Pits and Quarries		
1	Describe all activities included in this project: - Pitting - Quarrying - Overburden removal - Road use and/or construction - Explosives transportation and storage - Work within navigable waters - Blasting - Stockpiling - Crushing - Washing - Other	Supplemental Information Report: Section 4, Appendix 8C
2	Describe any field investigations and the results of field investigations used in determining new extraction sites.	Supplemental Information Report: Section 5, Section 8, Appendix 8C
3	Identify any carving stone deposits.	not applicable
4	Provide a conceptual design including footprint.	Supplemental Information Report: Section 4, Appendix 4 and 8C
5	Describe the type and volume of material to be extracted.	Supplemental Information Report: Section 4, Appendix 4
6	Describe the depth of overburden.	Supplemental Information Report: Section 4, Appendix 4
7	Describe any existing and potential for thermokarst development and any thermokarst prevention measures.	Supplemental Information Report: Section 5.2, Appendix 5, Section 7.3 and 10.4.3
8	Describe any existing or potential for flooding and any flood control measures.	Supplemental Information Report: Section 4.2.7, 4.2.8, 4.3.7, 4.3.8
9	Describe any existing or potential for erosion and any erosion control measures.	Supplemental Information Report: Section 6.4, 7.2, 10.4.2 and Table 10.3-1
10	Describe any existing or potential for sedimentation and any sedimentation control measures.	Supplemental Information Report: Section 10.4.2, 10.4.5.1 and Table 10.3-1
11	Describe any existing or potential for slumping and any slump control measures.	not applicable
12	Describe the moisture content of the ground.	Supplemental Information Report: Section 5.2, Appendix 5, Section 8, Appendix 8C
13	Describe any evidence of ice lenses.	not applicable
14	If blasting, describe methods employed.	Supplemental Information Report: Section 4.2.10.2, 4.3.10, Appendix 4, 6.2
15	Describe the explosive type(s), hazard class, volumes, uses, location of storage (show on map), and method of storage.	Supplemental Information Report: Section 4.2.10.2, 4.3.10
16	Discuss methods used to determine acid rock drainage (ARD) and metal leaching (ML) potential and results.	Supplemental Information Report: Section 8.3, Appendix 8B
17	Discuss safety measures for the workforce and the public.	Supplemental Information Report: Section 4, 8.1 (Table 8.1-1) and 10.5.2

3. DESCRIPTION OF THE EXISTING ENVIRONMENT		
Physical Environment		
	§ Proximity to protected areas, including:	Supplemental Information Report: Section 5.2 and Appendix 5
	§ 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.	
Biological Environment		
	§ Vegetation (terrestrial as well as freshwater and marine where applicable).	Supplemental Information Report: Section 5.3 and Appendix 5
	§ 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.	
Socioeconomic Environment		
	§ Proximity to communities.	Supplemental Information Report: Section 3.5.1, 3.6
	§ 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.	
4. 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).	Supplemental Information Report: Section 10.3 and Table 10.3-1
2	Discuss the impacts identified in the above table.	Supplemental Information Report: Section 10.3 and Table 10.3-1
3	Discuss potential socioeconomic impacts, including human health.	Supplemental Information Report: Section 5.5, 10.6 and Appendix 5
4	Discuss potential for transboundary effects related to the project.	Supplemental Information Report: Section 10.9
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.	Supplemental Information Report: Section 10.5.2
6	Discuss proposed measures to mitigate all identified negative impacts.	Supplemental Information Report: Section 10.4 and 10.5
5. CUMULATIVE EFFECTS		
	Discuss how the effects of this project interact with the effects of relevant past, present and reasonably foreseeable projects in a regional context.	Supplemental Information Report: Section 10.7

6. SUPPORTING DOCUMENTS		
	Where relevant, provide the following supporting documents:	
	Abandonment and Decommissioning Plan	Supplemental Information Report: Section 8, Appendix 8C
	Existing site photos with descriptions	Not available
	Emergency Response Plan	Supplemental Information Report: Section 8.1 (Table 8.1-1)
	Comprehensive Spill Prevention/Plan (must consider hazardous waste and fuel handling, storage, disposal, spill prevention measures, staff training and emergency contacts)	Supplemental Information Report: Section 8.1 (Table 8.1-1)
	Waste Management Plan/Program	Supplemental Information Report: Section 4.2.11, 4.3.11, 7.1 (Table 7.1-1) and 8.1 (Table 8.1-1)
	Monitoring and Management Plans (e.g. water quality, air pollution, noise control and wildlife protection etc.)	Supplemental Information Report: Section 8.1 (Table 8.1-1)
	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	not applicable
	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.	not applicable
	§ Human Health Risk Assessment of the contaminants at the site.	not applicable

TABLE 1 - IDENTIFICATION OF ENVIRONMENTAL IMPACTS

PROJECT ACTIVITIES	ENVIRONMENTAL COMPONENTS	PHYSICAL	designated environmental values (ie. Parks, Wildlife Protected areas)	ground stability	permafrost	hydrology/ limnology	water quality	climate conditions	odors and other emissions to air	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	land migration patterns	aquatic species, incl. habitat and migration patterns	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
CONSTRUCTION																																			
OPERATION																																			
DECOMMISSIONING																																			

Did not use table; see attached

Note: Please indicate in the matrix cell 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 please leave the cell blank

Table 1 - TMAC Madrid Type B Application - Environmental Affects

	Project Phase				
Potential Effect	**Construction**	**Operations**	**Temporary Closure/ Closure**	**Post-Closure**	**Summary of Mitigation Measures**
Air Quality					
Degradation of air quality due to exhaust emissions from vehicles, aircraft and other combustion equipment	M	M	M		Use of well-maintained, fuel efficient equipment and promotion of fuel conservation measures.
Degradation of air quality due to fugitive dust emissions from blasting and quarrying	M	M			Dust generated will be short term and localized in nature and may settle on nearby overburden/soils, vegetation and surface water. As needed, water will be applied during periods of dry weather and/or application of approved dust suppression chemicals.
Degradation of air quality due to fugitive dust emissions from increased use of the existing airstrip and road traffic	M	M	M		Dust generated will be localized in nature and may settle on nearby overburden/soils, vegetation and surface water. As needed, water will be applied during the summer periods of dry weather and/or application of approved dust suppression chemicals.
Greenhouse gas emissions contributing to climate change	M	M	M		Use of well-maintained, fuel efficient equipment and promotion of fuel conservation measures. The equivalent emissions of GHG from the Madrid Advanced Exploration Program during the peak year is approximately 0.002% of Canada's annual emissions.
Noise					
Changes to background noise conditions due to movement of vehicles, aircraft and other equipment	M	M	M		Equipment fitted with appropriate mufflers and silencers. Use enclosures, berms, acoustic screening and shrouding where stationary sources requiring control are identified. Keeping equipment in a well maintained condition.
Increased noise and vibration due to blasting and exploration drilling	M	M			Use enclosures, berms, acoustic screening and shrouding where stationary sources requiring control are identified. Keeping equipment in a well maintained condition.
Ground Stability and Permafrost					
Alteration of the active layer	M/N	M/N	M/N	M/N	Effects to permafrost will be mitigated as far as practical by reducing the extent of cut and fill areas; cut and fill will be allowed in designated rock quarries Appropriate thermal insulation will be placed to prevent onset of thermal erosion. Where fill is required, it will be of sufficient thickness and quality such that the active layer is not reduced.
Acceleration of permafrost-related processes such as mass wasting and erosion	M	M	M	M	Minimizing areas of disturbance. Where disturbance occurs, erosion and sediment control measures including compaction, sediment fences, and erosion control blankets will be implemented.
Groundwater					
Changes in groundwater quality due to the interaction between talik groundwater and underground mine water	M	M			Minimize operations within talik zone. Underground water will be collected into sumps and re-used for underground drilling. If excess water accumulates, the collected water will be transported to the Pollution Control Pond on surface.
Changes in groundwater quality due to the interaction between deep groundwater and underground mine water					Mine operations do not extend below the base of the permanently frozen zone.
Degradation of active layer water due to contact with poor quality (contact) water	M	M			Surface water management strategies including diversion/collection systems have been incorporated to reduce the risk of degradation of very shallow groundwater in the active-layer.
Surface Water Quantity					
Surface water drawdown of area lakes as a result of use	M	M			Recycling of intercepted contact water for drilling purposes will reduce the demand for fresh water and lake drawdown. Compliance with DFO Guidelines for under ice water taking.
Alteration in surface runoff patterns due to diversions	M	M	M		Minimizing footprint and diversion of surface runoff, minimizes the alteration to runoff patterns. Diverted surface runoff is kept within the existing watershed.
Surface Water Quantity and Sediment Quality					
Changes in surface water quality from disposal of contact water at bulk sample sites		M	M	M	Contact water meeting discharge criteria will be released from the bulk sample pad to the tundra at least 31m away from the local waterways. If the discharge water does not meet the water quality criteria, it will be transported to the Doris North Project for disposal in TIA. Transport of treated or untreated contact water for discharge to the TIA at the Doris North Project may also be implemented.
Changes in water quality from fugitive dust emissions	M	M			Appropriate drainage and sediment control structures will be used to prevent sediment laden water from entering surrounding waters. Dust generation will be minimized by road watering or by using other non-toxic, non-wildlife attractant substances to suppress dust.
Changes in surface water quality from runoff from quarry sites	M	M			Contact water within the quarry boundaries will be collected in a sump. If this contact water meets discharge criteria it will be discharged to the environment. If it does not meet discharge criteria it will be trucked to the Pollution Control Pond for reuse, or trucked to Doris North Project for disposal in TIA. Management plans will outline the storage, handling and use of explosives to minimize excessive residue and nitrogen loading.
Changes in surface water quality from runoff water from roads, pads, and other infrastructure	M	M	M	M	Runoff from the pads will be directed to the Pollution Control Pond and runoff from the roads may be monitored for two years to confirm geochemical stability of the material. Roads and infrastructure pads have been sited to avoid water bodies and are designed to minimize the risk for erosion and use of silt fencing if and where necessary. Available spill and emergency response equipment.
Presence of hydrocarbons owing to fuel spills	M	M	M		The possibility of accidental spills or releases will be eliminated or reduced by implementation of management plans and standard operating procedures.
Changes in surface water quality from disposal of treated sewage effluent and/or sludge					The existing camp facilities at Doris North Project will be used and portable, latrine style toilet facilities at Madrid South and Madrid North. Toilet wastes will be returned to the Doris North Project for disposal at existing sewage treatment facilities.
Changes in surface water quality from disposal of underground mine water	M	M	M		Underground contact water will be collected in underground sumps and reused for drilling. Excess water will be pumped to the surface and discharged to the Pollution Control Ponds.

	Project Phase				
Potential Effect	**Construction**	**Operations**	**Temporary Closure / Closure**	**Post-Closure**	**Summary of Mitigation Measures**
Mobilization of particulate material dust-generating activities	M	M			Dust generation will be minimized by road watering or by using other non-toxic, non-wildlife attractant substances to suppress dust.
Changes in surface water quality from runoff from quarry sites	M	M	M	M	Disposal of the drilling wastes in either a local sump or pumped to a system allowing the solids to settle out and clarified water to be released to tundra away from any surface water body. The remaining solids (sludge) can then be left in place at the local sump and reclaimed, or can be deposited in a dedicated containment location.
Disturbance and suspension of sediments from in-water construction activities	M				Appropriate drainage and sediment control structures will be used to prevent sediment laden water from entering surrounding waters.
Changes in sediment quality from disposal of treated contact water at bulk sample sites	M	M	M	M	Contact water meeting discharge criteria will be released from the bulk sample pad to the tundra at least 31 m away from the local waterways. If the discharge water does not meet the water quality criteria, a treatment plant may be installed to treat to the required concentration and release to the tundra 31 m away from local waterways. Transport of treated or untreated contact water for discharge to the TIA at the Doris North Project may also be implemented.
Presence of hydrocarbons in sediment quality owing to fuel spills	M	M			The possibility of accidental spills or releases will be eliminated or reduced by implementation of management plans and standard operating procedures.
Changes in sediment quality from disposal of treated sewage effluent and/or sludge					The existing camp facilities at Doris North Project will be used and portable, latrine style toilet facilities at Madrid South and Madrid North. Toilet wastes will be returned to the Doris North Project for disposal at existing sewage treatment facilities.
Vegetation					
Loss of ecosystems and vegetation to infrastructure development	N	N			Loss of ecosystems and vegetation will be minimized by minimizing Project footprint and utilization of existing infrastructure and access corridors associated with the Doris North Project. The total area that will be converted to roads, pads, and laydown areas amounts to approximately 25 ha across the Madrid area.
Degradation of eco-systems and vegetation through increased dust deposition, chemical spills, alteration of local hydrology, or the introduction of invasive species	M	M	M	M	Implementation of dust mitigation measures and available spill and emergency response measures Where practical, road construction and maintenance will prevent the ponding of water to maintain local hydrological patterns. The introduction of invasive plant species to newly disturbed areas will be minimized by washing machinery and vehicles thoroughly prior to their use on site.
Degradation of ecosystems and vegetation through discharge to the tundra		M			Erosion will be mitigated through the use of silt curtains and Pollution Control Ponds, as required.
Terrestrial Fauna					
Habitat loss due to infrastructure development	M	M	M	M	Minimizing overall Project footprint and avoiding significant habitat. Avoiding clearing during wildlife sensitive periods or using qualified personnel to conduct pre-clearing surveys if clearing occurs within sensitive wildlife periods.
Changes in movement and behaviour due to sensory disturbance from blasting, human presence, vehicle and aircraft traffic	M	M	M		Equipment fitted with appropriate mufflers and silencers. Use enclosures, berms, acoustic screening and shrouding where stationary sources requiring control are identified. Keeping equipment in a well maintained condition.
Mortality due to vehicle and aircraft traffic	M	M	M		Vehicle speed limits will be implemented and enforced and vehicles restricted to site roads and quarry footprints.
Mortality or reduced vigor from ingestion of contaminants deposited in food and water sources due to construction activities, vehicle traffic, and drilling activities	M	M	M	M	A waste and wildlife attractant management protocol implemented such that wildlife do not have access to camp wastes, contaminated areas, and attractants.
Aquatic Fauna					
Reduction in habitat or de-oxygenation of water through water withdrawals for operations and dust suppression activities	M	M			Recycling of intercepted contact water for drilling purposes will reduce the demand for fresh water and lake drawdown. Compliance with DFO Guidelines for under ice water taking. Minimizing footprint and diversion of surface runoff, minimizes the alteration to runoff patterns. Diverted surface runoff is kept within the existing watershed.
Reduction in habitat quality through reduced water or sediment quality associated with the introduction of nutrients or contaminants, including elevated TSS levels through dust-generating and in-water construction activities	M	M			The mitigation measures already described for water and sediment quality will help minimize the potential effects to aquatic organisms, fish, and fish habitat by minimizing changes to water and sediment. Elevated levels of TSS will be mitigated through the use of silt curtains and Pollution Control Ponds, as required.
Removal or alteration of aquatic habitat for infrastructure, including the construction of bridges or culverts	M	M			Minimized accepted techniques for sediment control, riparian care, site isolation, and timing windows. Location of infrastructure to minimize the loss of aquatic systems, with a particular focus on avoiding important fish habitat. Infrastructure is designed with a minimum 30 m setback distance from adjacent water bodies and the water that comes into contact with these facilities will be intercepted for management prior to release to the environment.
Historical and Traditional Uses					
Disturbance or loss of recorded and unrecorded archaeological sites or significant heritage resources	M	M			The footprint has been surveyed and the recorded archaeological sites are mitigable with recovery in accordance with Territorial legislation and implementation of a "chance find" procedure.
Damage or removal of archaeological material	M	M			The footprint has been surveyed and the recorded archaeological sites are mitigable with recovery in accordance with Territorial legislation and implementation of a "chance find" procedure.
Decrease in access to land for land users	N	N	M	M	Communication will be a major component of mitigation to changes to access to the area. This would inform other land users of activities associated with Project construction and operations, including restricted areas, blasting activities, and wildlife management. Communication will enable land users to adjust their activities accordingly, and stay informed regarding Project development.
Changes to the aesthetic quality of the area	M	M	M	M	TMAC will also consider suggestions made by land users and residents of local communities in the development of mitigation and enhancements, in the interest of ensuring that these measures are meaningful and effective in the local context.

Note: P = Positive
N = Negative and non-mitigatable
M = Negative and mitigatable
U = Unknown
If no impact is expected cell is blank