SCIENTIFIC RESEARCH LICENCE APPLICATION
LAND, FRESHWATER & MARINE BASED RESEARCH

NRI strongly recommends that applicants review the following documents prior to submitting an application: *Scientific Research Licencing Guidelines* and *Negotiating Research Relationships in Inuit Communities: A Guide for Researchers*

IMPORTANT

This application fulfills the requirements for the NIRB environmental screening. Please be advised that your applicatio will not be processed until the application form, project summary, and maps are received.
All documents should be uploaded in the following formats: MS Word, Adobe PDF or jpeg.

SECTION 1: APPLICANT INFORMATION

1a. Project Title Flashline Mars Arctic Research Station

1b. Project Number

Please indicate if applicant has submitted any previous application(s) to NRI related to this project proposal? Yes (x) No ( )

If yes, please indicate the previous NRI licence number: 0202507R-M, 0204505N-M

Please indicate if applicant has submitted any previous application(s) to NIRB related to this project proposal? Yes (x) No ( )

If yes, please indicate the previous NIRB licence number(s): 05YN077

2. Applicant's full name and mailing address:

Robert Zubrin, Mars Society
11111 W. 8th Ave, unit A
Lakewood, CO 80215, USA

Phone: 303-980-0890
Fax: 303-980-0753
Email: zubrin2aol.com

3. Field Supervisor's name and mailing address:

Robert Zubrin, Mars Society
11111 W. 8th Ave. unit A
Lakewood, CO 80215, USA

Phone: 303-980-0890
Fax: 303-980-0753
Email: zubrin@aol.com

4. Other Personnel list (name, position, affiliation)

Walter Kramer geologist
Chrsty Garvin, interdiciplinary scientist
Kristine Ferrone, engineer
Joe Palaia engineer
Brian Shiro, geologist
Stacy Cusack, geologist

SECTION 2: AUTHORIZATION NEEDED

1. Indicate all authorizations associated with the project proposal:

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

2. List the active permits, licences, or other rights related to the project proposal and their expiry date:

Permit:	Expiry Date
Land Permit #N2003J0001	June 21, 2010
NWB Licence 3BC-MAR0709	September 30, 2009

3. Have you applied for all authorizations required to conduct the project proposal activities?

(x) Yes ( ) No

SECTION 3: PROJECT PROPOSAL DESCRIPTION

1. Indicate the activities related to the project proposal:

[ ]	Temporary camp (to be removed at end of field season)	[ ]	Soil disposal/ soil storage
[x]	Permanent camp (to remain for life of authorization)	[x]	Incineration of combustible wastes and removal of non-combustible wastes
[ ]	Construction of recreational or safety cabin	[ ]	River/ stream/ lake crossing or work/ bridge
[ ]	Temporary fuel storage (to be removed at end of field season)	[ ]	Drainage alteration
[x]	Permanent fuel storage (to remain for life of authorization)	[ ]	Geoscientific sampling by diamond drilling
[x]	Placement of structures for life of permit (other than camp or cabin â€“ i.e. scientific instruments)	[ ]	Geoscientific sampling by soil sampling
[ ]	Placement of permanent structures (other than camp or cabin â€“ i.e. scientific instruments)	[ ]	Geoscientific sampling by trenching
[ ]	Air surveys (i.e. geophysical, wildlife)	[ ]	Geoscientific sampling by borehole core
[x]	Use of aircraft/watercraft/land vehicle for personnel drop-off and pick-up to project location	[ ]	Blasting
[x]	Use of on-site mechanized vehicles (i.e. atv, snowmobile, truck, zodiac)	[ ]	Channeling
[x]	Sewage or grey water disposal via sump	[ ]	Excavation
[ ]	Hazardous waste storage or disposal	[ ]	Hydrological testing
[ ]	Solid waste disposal	[ ]	Abandonment and restoration
[ ]	Chemical storage	[ ]	Site restoration (fertilization/ grubbing scarification/ spraying/ recontouring)

[ ]	Explosives storage	[x]	Research
[ ]	Soil testing	[ ]	Ecological survey
[ ]	Harvesting	[ ]	Removal of vegetation for scientific purposes
[ ]	Other: ———		

2. Personnel

Total No. of personnel on site = (A)	Total No. of days on-site = (B)	Total No. of Person days (A) Ã— (B) =
7	60 (30 per year)	420 (210 per year)

3. Timing

Period of operation:	July 1 2009	to	Aug 31, 2010
Proposed term of authorization:	June 15, 2009	to	June 15, 2011

Please outline the phases of the proposed project (construction/ operation/ decommissioning) including the timing and scheduling of each phase.

The team will arrive at the beginning of July each year and leave at the end of July.
The put in and pull out will each require 3 Twin Otter flights from Resolute Bay.

4. Location(s) of data collection:

Location Name	Region North Baffin, South Baffin, Kivalliq, Kitikmeot	Co-ordinates Lat (degree / minute), Long (degree / minute)	NTS Map Sheet Nr.	Land Status Crown, Commissionersâ€™, Inuit Owned
Haughton Crater	Devon Island	75 deg 26	58H	Crown Land
———	———	———	———	———
———	———	———	———	———
———	———	———	———	———

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

Lat (degree / minute) ——— **Long** (degree / minute) ———

NTS Map Sheet Nr. (if different from above) ———

Please attach maps (preferably 1:250,000 scale) which clearly indicate camp sites and research sites. PDF jpeg or tiff versions are requested.

Frm633774729719948750land-Map1without-figures-.pdf
Frm633774729719948750land-Map2.pdf
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The Nunavut Impact Review Board may require additional location information 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 attach 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:

- Project Title
- Researcher's Name and Affiliation
- Project Location
- Timeframe
- Project Description
  - purpose
  - goals & objectives
  - method of transportation
  - any structures that will be erected (permanent / temporary)
  - restoration / abandonment plans
- Methodology
  - collection protocol
  - collection mechanisms
  - indicate why specific communities or individuals were selected for your research
- Data
  - short term & long term use of data
  - other uses of data
- Reporting
  - How will the research results be communicated to the individual participants, communities, regional and Nunavut organizations?
  - Will the research result in a publication?

Frm633774729719948750land-FMARS Science Project Description-09.doc

SECTION 5: MATERIAL USE

1. List equipment (including drills, pumps, aircrafts, vehicles etc.):

Equipment type and number	Size â€“ dimensions	Proposed use
ATVs 6	single person quads	field mobility
diesel generators 2	5 kW	electric power for camp
airplane flights 6 each year	Twin Otter	put in and pull out

2. Detail fuel and hazardous material use:

Fuel	Number of Containers and Capacity of Containers	Total Amount of Fuel (in Litres)	Proposed Storage Method
Diesel	8 drums 55 gallon	440 gallon = 1600 liters	stored in drums in depot
Gasoline	4 drums 55 gallon	220 gallon = 800 liters	stored in drums in depot
Aviation fuel			
Propane	3 bottles 10 gallon	30 gallon = 110 liters	sored in bottles in depo
Other			

Hazardous Materials and Chemicals		Total Amount of Hazardous Materials and Chemicals (in Litres)	

3. Detail daily water consumption rates

Daily amount (in Litres)	Proposed water retrieval methods	Proposed water retrieval location
250 liters	Hand pump to Jerry cans	stream near base camp

4. Have you applied for a Class A Licence with the Nunavut Water Board?

(x) YES ( ) NO

SECTION 6: WASTE DISPOSAL AND TREATMENT METHODS

1. List the types of waste:

Type of waste	Projected amount generated	Method of Disposal	Additional treatment procedures
Sewage (human waste)	30 liters per day	____	incineration, Fly out residue
Greywater	250 liters per day	____	filter and sumping
Combustible wastes	200 kg	____	incinweration -fly out residue
Non-Combustible wastes	100 kg	____	fly out at end of seasor
Overburden (organic soil, waste material, tailings)	N/A	____	____
Hazardous waste	N/A	____	____
Other:	____	____	____

2. Will you be incinerating combustible waste, removing all solid waste, and removing the ash generated from incineration?

(x) YES ( ) NO

SECTION 7: COMMUNITY INVOLVEMENT & REGIONAL BENEFITS

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

Minute	____	____	____
Community	Name	Organization	Date Contacted
Resolute Bay	____	Mayor, Deputy Mayor, SAO, HTO	June 2000, November 2000
Griese fiord	____	Mayor, SAO, HTO, Hamlet Council	June 2000, November 2000
____	____	____	____

2. How will the proposed project benefit Nunavut? Will your project provide local employment or training opportunities? Please specify.

The project will help the Nunavut economy by providing logistics support jobs to the residents of Resolute Bay, and business to the businesses based there.

Adults and students from Nunavut were also involved in the construction of the FMARS habitat, and some young people received excellent training in construction while doing so.

In addition, some students from Nunavut have served as interns with our crews, learning geology and planetary science.

3. Please describe the nature of local services and/or logistic support that will be required from local communities, eg. Equipment, accommodations, outfitting, translations...

Our crews require accomodation in Resolute Bay for several days at the beginning and end of each field season. We also rent equipment, such as ATVs from Resolute Bay, and hire logistics services

from there, as well as Twin Otter flights.
We also buy food and other supplies from Resolute businesses such as the co-op. At the end of each season we hire Inuit translators to translate our reports.

4. Describe and attach documentation regarding community support or concerns for the proposed project?

5. Is there a traditional knowledge component to this research project? If yes, please explain:

N/A

SECTION 8: GENERAL QUESTIONS

1. Do you give NRI permission to publish project information in the Nunavut Research Institute Annual Compendium of Research Undertaken in Nunavut?

(x) YES ( ) NO

2. Is the proposed research associated with International Polar Year (IPY)?

( ) YES (x) NO

Applicant:

Robert Zubrin	President, Mars Society	May 9. 2009
Signature	Title	Date

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