



Giant Mine Oversight Board

Research Proposal Template

General instructions

1. Ensure that you address each of the bullet points in your response. Please use the suggested number of pages per section as indicated. Do not exceed the maximum number of pages for the entire proposal (18 pages), not including references (one page) and the budget justification (two pages).
2. Do not alter the template text and presentation format (font type and size, margins or line spacing).
3. Figures and tables are welcome.

EXECUTIVE SUMMARY (400 WORDS)

INSERT YOUR TEXT HERE, RESPONDING TO EACH OF THE ABOVE POINTS

BACKGROUND AND PROJECT OBJECTIVES (3 PAGES)

- Position the proposed project relative to GMOB's description of the challenge of finding a permanent solution.
- Outline the general research objective and the main specific objectives.
- Explain the new concepts or directions needed to address the topic and how this research will fill knowledge gaps related to developing new and innovative products, processes or technologies that are related to the management of arsenic trioxide at the Giant Mine.

INSERT YOUR TEXT HERE, RESPONDING TO EACH OF THE ABOVE POINTS

PROPOSED METHODOLOGY (10 PAGES)

- Describe the methodological approach proposed to reach project objectives.
- Describe the anticipated effectiveness, permanence and reversibility.
- Describe the technical feasibility and compatibility with cold climates.
- Describe possible implementation risks (environmental and human).
- Describe the Technology Readiness Level (TRL) using the scale provided in Appendix A.
- Detail the resources and activities needed to achieve the anticipated results.
- Indicate approximate timelines for the activities to lead to milestones and deliverables using a Gantt chart, table or diagram.
- Identify the indicators and methods for monitoring progress during the project and for assessing the outcomes. You may include a chart or table.

INSERT YOUR TEXT HERE, RESPONDING TO EACH OF THE ABOVE POINTS

EXPECTED OUTCOMES (3 PAGES)

- Explain the potential outcomes and impacts.
- Describe how the project fits in the GMOB's research program objectives and describe how your technical outcome would outperform the currently approved 100-year freezing concept.
- Place your research idea within the greater context of solving the arsenic trioxide problem (e.g., extraction from underground, arsenic stabilization and long-term management of stabilized arsenic products).
- Describe how the expected outcomes of the project will benefit the local communities, region and Canada.
- Describe the potential for job creation and training, particularly for local residents.

INSERT YOUR TEXT HERE, RESPONDING TO EACH OF THE ABOVE POINTS

TEAM AND MANAGEMENT APPROACH (2 PAGES)

- List the applicant and any co-applicants.
- Explain how the knowledge, experience and achievements of these individuals provide the expertise needed to accomplish the project objectives. Discuss the role of each individual and how his/her contributions will be integrated into the project.
- If applicable, please detail the project manager's qualifications, involvement, role and responsibilities.
- Append CVs of co-applicants (CVs are not included in the page count for the proposal).

INSERT YOUR TEXT HERE, RESPONDING TO EACH OF THE ABOVE POINTS

REFERENCES (1 PAGE)

- Use this section to provide a list of the cited references.
- These pages are not included in the page count.

INSERT YOUR TEXT HERE, RESPONDING TO THE FIRST POINT ABOVE

BUDGET (INSERT ROWS AND ADDITIONAL YEARS AS NEEDED)

	Year 1	Years 2	Years 3	Year 4
Salaries				
Equipment				
Materials/supplies				
Travel				

These pages are not included in the page count.

BUDGET JUSTIFICATION (2 pages)

- Describe how the GMOB investment will be integrated with other sources of funding (if applicable).
- These pages are not included in the page count.

Appendix A: Technology Readiness Level (TRL) Scale

TRL	Definition	Description	Example
1	Basic ideas and hypotheses are presented	Conceptual design is developed on paper	Literature search and review of similar technologies
2	Ideas are ready to be tested	Development of laboratory tests	Benchtop experiments
3	Poof of concept	R&D advances	Advanced experiments moving towards fully implementing all components of the design or process
4	Complete design or process tested in a laboratory environment	All components are tested and are shown to work	“ad hoc” hardware assembled in the lab
5	Technology or process validation in a simulated environment	The technology or process is integrated and tested in a simulated environment	Repeated measurements show robustness of technology or process
6	Prototype in a simulated environment	The prototype represents a near desired configuration	The prototype is tested in the simulated environment
7	Prototype is ready to be field tested	Limited field testing in an appropriate/localized environment	“Real-world” field testing
8	The technology or process is finalized and demonstrated to work through tests or demonstration	The technology or process works under expected conditions	Development testing and evaluation of the technology to meet operational requirements.
9	Deployment of technology or process in an operational environment	The application of the technology or process in real-life setting	Using the technology or process under operational conditions