CUMULATIVE EFFECT VOL 3
ENVIRONMENTAL EFFECTS

TWIN METALS MINNESOTA PROJECT
Environmental Review Support Document

Prepared for Twin Metals Minnesota, LLC
Prepared by

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REVISION RECORD

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REVISION NARRATIVE

DISCLAIMER

This document is a working document. This document may change over time because of new information, or further analysis or deliberation.

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LIST OF ABBREVIATIONS, ACRONYMS, AND SYMBOLS

TMM	Twin Metals Minnesota, LLC

1.0 INTRODUCTION

The Twin Metals Minnesota, LLC (TMM) Project (Project) is focused on designing, permitting, constructing, and operating an underground copper, nickel, cobalt, platinum, palladium, gold, and silver mining project. Located approximately nine miles (14 kilometers [km]) southeast of Ely, Minnesota, and 11 miles (18 km) northeast of Babbitt, Minnesota, the Project targets valuable state, federal, and private minerals within the Maturi deposit, which is a part of the Duluth Complex geologic formation.

All potential Project infrastructure locations presented herein are considered preliminary and are undergoing further design and engineering evaluations which will dictate final design and locations. Further information about TMM and the Project is located at http://www.twin-metals.com/.

The purpose of this document is to provide necessary information for the environmental review and permitting process. TMM retained [insert Consultant name] (insert abbreviated Consultant name) to complete [insert text].

2.0 SUMMARY

- Provide a high level summary of what is presented within this report.
- Describes cumulative effects (if present) within environmentally relevant areas, based on methods and indicators identified in the other volumes of the *Cumulative Effect Data Package*.
- Describes mitigations that could be implemented as necessary.
- Describe how this report volume relates to the other volumes.
    - Indicate regulatory framework is presented in the other volumes of the *Cumulative Effect Data Package*.
    - Indicate proposed action and alternatives are defined within the other volumes of the *Cumulative Effect Data Package*.
- Reference relevant sections of the FSDD, SEAW, and / or federal documents to remind the reader there is a defined scope that is being followed.

3.0 ENVIRONMENTAL CONSEQUENCES

3.1 Impact Assessment Indicators and Methods

- Describe the impact assessment indicators and methods at a high level using the other volumes of the *Cumulative Effect Data Package* and indicate where additional details can be found within this document.
- Describe and show within figures the area of analysis. Describe at a high level using the other volumes of the *Cumulative Effect Data Package* and indicate where additional details can be found within this document.

3.2 Impact Assessment

Utilizing the impact assessment methods and area of analysis summarized in Section 3.1, an assessment of cumulative effects will be conducted and described within this section. The following items will be assessed and described for the proposed action, alternatives to the proposed action, and the no action alternative:

- Past, present and reasonably foreseeable projects (proposed action plus actions of others).
- Include public and private sectors.
- Include direct and indirect effects.
- Cumulative impact from the Project-specific effects (by resource).
- Cumulative impacts for each defined environmentally relevant area (by resource).

3.2.1 Proposed Action

Cumulative effects associated with the proposed action will be described in this section.

3.2.2 Alternatives to the Proposed Action

Cumulative effects associated with the alternatives will be discussed in this section. This discussion will focus on differences in cumulative effects between the alternatives and proposed action. Cumulative effects that are the same between the proposed action and alternatives will be noted but not discussed in detail.

3.2.3 No Action Alternative

Cumulative effects associated with the no action alternative will be described in this section.

4.0 AVOIDANCE, MINIMIZATION, MITIGATION, AND MONITORING MEASURES

4.1 Proposed Action

Avoidance, minimization, mitigation, and monitoring measures associated with the proposed action will be described in this section.

- Discuss avoidance / minimization steps involved in siting and design of Project features.

4.2 Alternatives to the Proposed Action

Avoidance, minimization, mitigation, and monitoring measures associated with the alternatives to the proposed action will be described in this section.

- Discuss avoidance / minimization steps involved in siting and design of alternative features.

5.0 REFERENCES

TABLES

FIGURES

APPENDICES

APPENDIX [#A, B, C, D]

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