MULTIMEDIA SCREENING ASSESSMENT VOL 1

BASELINE DATA, IMPACT INDICATORS, AND METHODS

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.
- Describe how this report volume relates to the other volumes.
- Describes how the area of analysis was selected.
- Describes rationale and approach for collection of baseline data.
- Describes rationale for selection of impact indicators.
- Describe multimedia screening analysis modeling protocol.
- 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 PROPOSED ACTION AND ALTERNATIVES

3.1 Proposed Action

- Reference the TMM Project Description and Alternatives document and indicate the proposed action is defined within this document.

3.2 Alternatives to the Proposed Action

- Reference the TMM Project Description and Alternatives document and indicate the alternatives to the proposed action are defined within this document.

3.3 No Action Alternative

- Reference the TMM Project Description and Alternatives document and indicate the no action alternative is defined within this document.

4.0 REGULATORY FRAMEWORK

- Reference regulatory framework discussions provided within the *Biology Data Package, Air Quality Data Package, Water Resources Data Package,* and *Wetlands and Riparian Resources Data Package*.

5.0 AFFECTED ENVIRONMENT

5.1 Area of Analysis

- Reference the *Biology Data Package, Air Quality Data Package, Water Resources Data Package,* and *Wetlands and Riparian Resources Data Package*, and indicate area of analyses are defined within these documents.

5.2 Methods

- Reference the *Biology Data Package, Air Quality Data Package, Water Resources Data Package,* and *Wetlands and Riparian Resources Data Package*, and indicate methods for defining existing conditions are defined within these documents.

5.3 Existing Conditions

- Reference the *Biology Data Package, Air Quality Data Package, Water Resources Data Package,* and *Wetlands and Riparian Resources Data Package*, and indicate existing conditions are defined within these documents.

6.0 IMPACT ASSESSMENT CRITERIA

6.1 Impact Indicators

Impact indicators will be defined and will include the following:

- Changes in wetland water quality related to deposition of air emissions;
- Changes in surface water quality from deposition of air emissions; and
- Changes in mercury concentrations of fish tissue from deposition of air emissions and methyl-mercury export from wetlands.

6.2 Methods

This section will include a discussion on methods for multimedia impact assessment, with a focus on modeling the deposition of metals, sulfate / nitrogen, and dust on nearby water bodies, wetlands, or sensitive vegetation. Deposition modeling results will be utilized to quantify annual deposition load at selected receptors.

6.3 Area of Analysis

A discussion will be provided to describe the following:

- Areas of direct impacts.
  - None
- Areas of potential indirect effects.
  - Wetlands that are not filled or excavated, but have a reduced function or value, would be considered indirectly affected by:
    - changes in wetland water quality related to atmospheric deposition of dust from the project (sulfate, metals, mercury)
  - Surface water quality would be considered for evaluation of potential impacts from deposition of air emissions (sulfate, metals, mercury) at the following locations:
    - Birch Lake
    - White Iron Lake
    - Keeley Creek
    - Unnamed tributary to Keely Creek
    - North Nokomis Creek
    - South Nokomis Creek
    - S. Kawishiwi River
    - Filson Creek
    - Unnamed tributary to Filson Creek
  - Ecological receptors such as fish would be considered for evaluation of potential impacts at the following locations from deposition of air emissions and export of methyl-mercury:
    - Birch Lake
    - White Iron Lake
- Areas where there is potential deposition of metals, sulfate, or dust from the Project, based on deposition modeling.

7.0 REFERENCES

TABLES

FIGURES

APPENDICES

APPENDIX [#A, B, C, D]

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APPENDIX [#A, B, C, D]

[APPENDIX TITLE]

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