Who is Twin Metals Minnesota?

Twin Metals Minnesota is pursuing the development and operation of an underground copper, nickel, platinum, palladium and gold (strategic metals) mining project in NE Minnesota.

Twin Metals Minnesota has offices in St. Paul, Ely and Babbitt, Minn.
Minnesota Will Be A Global Leader

More than 4 billion tons of strategic metal resources estimated in Minnesota – world’s largest undeveloped strategic metals deposit.
Minnesota’s mineral endowment is directly related to the geology of the state.

No other state in the USA has rocks similar to those in Minnesota.

Integration of USGS commodity reports with published data from Minnesota’s mines/projects.
Twin Metals Minnesota
Part of Northern Minnesota’s Mining Range
• Approx. 32,000 acres of property interests.

• Babbitt 10 miles to the SW and Ely 15 miles to the NW.

• Three mineral deposits: Maturi, Spruce Road and Birch Lake.

• Anticipate up to 100 years of mining production and employment.
Twin Metals Minnesota Prefeasibility Study (PFS)

• Critical project details form foundation for rigorous and thorough environmental review by state and federal agencies.
  - Environmental impacts and controls
  - Mine design and processing rates
  - Type of ore processing
  - Facility locations
  - Transportation methods and routes
  - Power sources and transmission routes
  - Economics: jobs, revenues, taxes, royalties

• PFS completion 2014+; focus on quality analysis and fully informed decisions.
Twin Metals Minnesota – “Jobs for Generations”

2009 UMD Study (long-term impacts):
• Strategic metals projects: > 12,000 MN construction jobs and > 5,000 long-term mining jobs created when all strategic metal mining projects move forward.

2012 UMD Study (focus through 2016):
• Strategic metals project construction = $1.7 billion contributed to state economy; up to 2,000 jobs.
• Strategic metals project operations = $200 million to state economy; > 1,300 jobs.

Study Sponsors
MN DEED
IRRRB
NRRI
MN Power
Mining MN
Iron Mining Assoc. of MN
Annual Mining Wages 2010
Source: U.S. Bureau of Labor Statistics

- All industries avg. in MN: $46,985
- Mining jobs in MN: $72,365 (54% increase)
- All industries avg. in U.S.: $46,451
- Mining jobs in U.S.: $67,719 (47% increase)

MINING JOBS COMPARED TO OTHERS
Twin Metals Minnesota (Fall 2012)
Preliminary Long-term Job Estimates (Operations)

Geologists, engineers, carpenters, safety inspectors, mine designers, mapping experts, mechanics, electricians, miners, truck drivers, drillers, IT professionals, business administration, and more.
Twin Metals Minnesota
Operations & Employment (2012)

To date, more than $160 million has been invested in exploration and project development activities, supporting some 175-200+ direct and consultant/contractor jobs.

Ely & Babbitt, Minn.
Employees 20
Drillers/Contractors 140-160

St. Paul, Minn.
Employees 20
Contractors/Consultants 20~
Twin Metals Minnesota Partnerships to Educate & Train Future Workforce
Twin Metals Minnesota
Environmental Responsibility and Protection
Twin Metals Minnesota – Environmental Commitment

• Protect Minnesota’s Pristine Wilderness, Natural Environment and Recreational Resources

• Exceed State and Federal Environmental Protection Standards:
  
  — Project will face rigorous, thorough and lengthy environmental review by multiple state and federal agencies and Native Tribes.

  — State and federal environmental permits protecting water, air, land and wildlife will include stringent standards.

  — Project MUST exceed those standards, or it will not be approved.
Typical Environmental Study Requirements

- Lake & stream chemistry & flows
- Chemistry & flows
- Wild rice population surveys
- Lake & stream sediments
- Cultural resource surveys
- Meteorology & air quality monitoring
- Air quality modeling
- Carbon footprint
- Biological surveys
- Aquatic biota
- Visual simulations
- Surface water impact predictions
- Wetlands analysis
- Hydrogeologic study & modeling
- Noise & light surveys
- Lake & stream sediments
- Closure & reclamation design
Extensive Environmental Regulation/Oversight

MN Dept. of Natural Resources

MN Pollution Control Agency

MN Tribal Entities

US Forest Service

US Bureau of Land Management

US Army Corps of Engineers

US Environmental Protection Agency
Sample of Environmental Permits/Approvals

Federal Mineral Leases
State Mineral Leases
MDH Explorer’s License and Boring Notification
Permit to Mine – Non-Ferrous Metallic Mining
Air Emissions Permit
MN Water Appropriation Permit
MN Public Waters Work Permit
MN Dam Safety Permit
Permit for Work in Protected Waters
Section 404 Permit
Section 10 Permit
Section 401 Certification
Wetland Replacement Plan
NPDES/SDS Permits
Underground Injection Permit
License to Cross Public Lands and Waters
NPDES Construction Stormwater General Permit
NPDES Industrial Stormwater General Permits
Non-Community Public Water Supply System
Industrial Pretreatment Permit or User Agreement
Monitoring Well Construction Permit
Variance - Exploratory Boring as a Monitoring Well
Section 106 Consultation and Determination
Incidental Take Permit
Threatened and Endangered Species Permit
Aquatic Vegetation Removal Permit
USFS Road Use Permits
USFS Special Use Permits
Easement/Lease for Road Across State Land
Route Permit for High Voltage Transmission Lines
Hazardous Waste Generator/Transporter License
Solid Waste Storage Permit
Waste Tire Disposal
Open Burning Permit
Above ground/Underground Storage Tank Permit
Subsurface Sewage Treatment System Permit
Conditional Use Permit
Grading, building, and other land use permits
Thank you

www.Twin-Metals.com