



Comments in Support of the Twin Metals Lease Renewal

**Center of the American Experiment**

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January 22, 2019

**Bureau of Land Management  
U.S. Department of the Interior**

MN Hardrock Lease Renewal EA Project Manager  
Northeastern States District Office  
626 E. Wisconsin Ave., Ste. 200,  
Milwaukee, WI 53202

**Organization of this Comment**

1. About Center of the American Experiment
2. Minnesota's Economy Needs More Environmentally Responsible Mining
3. Minnesota's Strict Regulations Protect the Environment
4. Conclusion

Center of the American Experiment submits the following comments in response to BLM's call for comments regarding the renewal of mineral leases pertaining to the Twin Metals Minnesota (TMM) proposed copper-nickel mine. Center of the American Experiment fully supports the renewal of mineral leases for the TMM project.

**About American Experiment**

Center of the American Experiment has been Minnesota's leading public policy organization for more than 25 years. The Center is more than a think tank. It not only reaches and produces papers on Minnesota's economy, education, health care, energy, environment, employee freedom, and state and local governance, it also crafts and proposes creative solutions that emphasize free enterprise, limited government, personal responsibility, and government accountability.

**Minnesota's Economy Needs More Environmentally-Responsible Mining**

As the lead author of *Unearthing Prosperity: How Environmentally Responsible Mining will Boost Minnesota's Economy*, a 43-page report containing 126 footnotes, I am writing today to encourage the Bureau of Land Management to renew the mineral leases of the Twin Metals Minnesota (TMM) mining project because Minnesota's economy needs more environmentally-responsible mining.<sup>1</sup>

Mining is already an important part of Minnesota's economy, but it could be much larger.

Using the economic modeling software IMPLAN, our report found developing Minnesota's copper-nickel, platinum, cobalt, and ilmenite, the primary ore for titanium, deposits would grow Minnesota's economy by \$3.7 billion every single year, employing 1,900 people in the mining industry, and support 3,181 indirect and 3,385 induced throughout Minnesota with total wages exceeding \$634 million (See Table 1).<sup>2</sup>

Impact Type	Employment	Labor Income (\$)	Value Added (\$)	Output (\$)
Direct Effect	1,902	\$260,579,680	\$922,044,209	\$2,499,574,473
Indirect Effect	3,181	\$210,427,565	\$366,721,156	\$716,469,323
Induced Effect	3,385	\$163,508,298	\$273,563,569	\$478,211,856
<b>Total Effect</b>	<b>8,468</b>	<b>\$634,515,542</b>	<b>\$1,562,328,935</b>	<b>\$3,694,255,652</b>

*Table 1. According to the economic modeling software IMPLAN, mining Minnesota's copper, nickel, PGE and titanium deposits could be a significant boom to the state's economy. Developing these resources would generate nearly \$3.7 billion in economic output, create 1,902 mining jobs, and support 6,566 jobs throughout the economy with a total labor income of \$634.5 million. Source: IMPLAN*

With an estimated 650 direct jobs, and another 1,300 indirect and induced jobs, the TMM mine will play an important role in making these family-supporting jobs come to fruition.<sup>3</sup>

Mining and logging jobs are the most productive sector of Minnesota's economy, contributing more to the gross state product than any other industry on a per-job basis (See Figure 1).<sup>4</sup> It is these extractive jobs that provide the income necessary to fund education and pay for healthcare, as well as the other goods and services that make Minnesota such a great place to live.

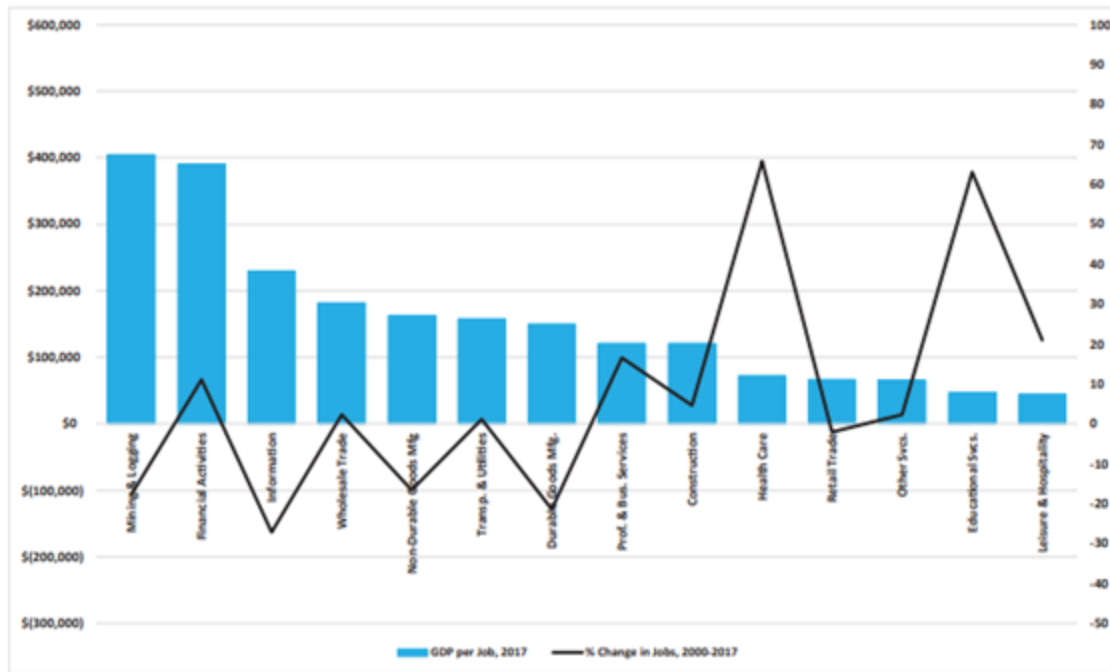
<sup>1</sup> Isaac M. Orr et al., "Unearthing Prosperity: How Environmentally Responsible Mining Will Boost Minnesota's Economy," Center of the American Experiment, August 2018, <https://bit.ly/2R2TwiY>.

<sup>2</sup> *Ibid.*

<sup>3</sup> Twin Metals Minnesota, "Creating Local Jobs," Economic Potential, Accessed January 20, 2019, <https://bit.ly/2v2sui1>.

<sup>4</sup> Bureau of Economic Analysis and Bureau of Labor Statistics

Figure 1 : Minnesota Gross Domestic Product Per Job, 2017, and Job Growth by Sector, 2000-2017



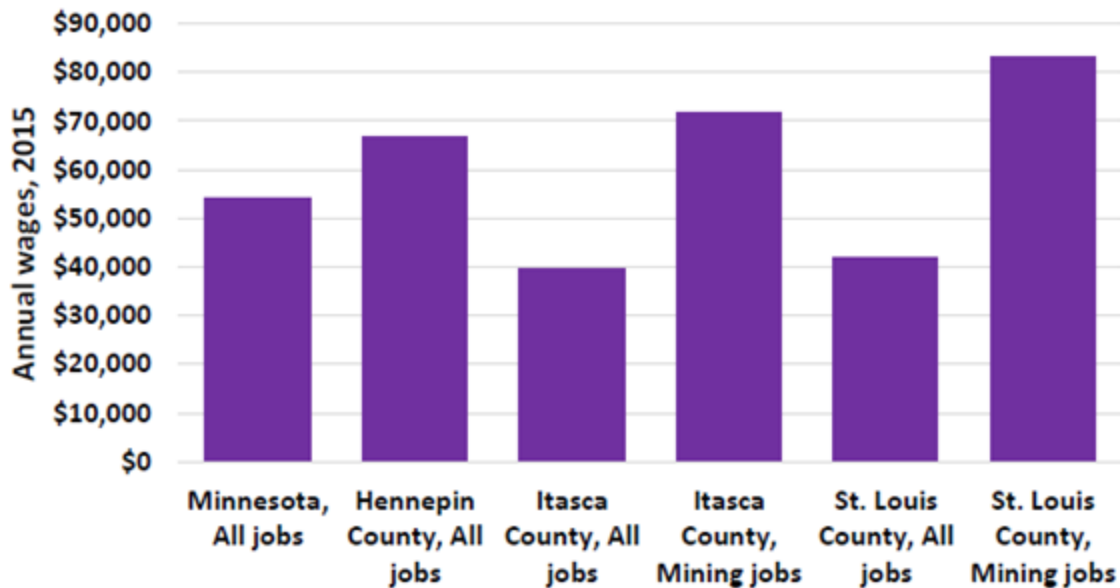
Source: Bureau of Economic Analysis and Bureau of Labor Statistics

Figure 1. Mining & Logging, for example, generated \$404,250 per job in 2017, making it the largest contributor to state gross product on a per-job basis.

As shown in Figure 2 below, the average wages paid in the mining industry exceed \$80,000, which is roughly twice the average wage paid to workers in other sectors of the economy in mining counties. In fact, mining jobs exceed the average pay of jobs in Hennepin County, which has the highest average wage of any county in the state of Minnesota.<sup>5</sup>

<sup>5</sup> Bureau of Labor Statistics Quarterly Census of Employment and Wages.

Figure 2. Wages for Mining Jobs and All Jobs, Minnesota and Selected Counties, 2015



Source: Bureau of Economic Analysis and Bureau of Labor Statistics

Figure 2. Mining jobs pay wages exceeding \$80,000 per year in St. Louis County, nearly double the \$42,000 earned for all jobs in the county.

The high wages associated with mining jobs is a key reason why residents of Northeastern Minnesota overwhelmingly support expanded mining in Minnesota.

According to a poll conducted by Center of the American Experiment for our quarterly magazine *Thinking Minnesota*, 54 percent of Minnesotans supported expanded mining in Minnesota, and this support is especially strong in Northeastern Minnesota, where 61 percent of residents support potential copper, nickel, gold, and platinum mining (See Figure 3).<sup>6</sup> Our polling strongly suggests the majority of Minnesotans support more mining, but a vocal minority do not.

<sup>6</sup> Center of the American Experiment, "Shovel Ready," *Thinking Minnesota*, Summer 2018, <https://bit.ly/2AUDyS5>.

**Figure 3. The Majority of Voters Support Expanded Mining, While MSP Voters Are Divided**

"In general, do you SUPPORT or OPPOSE potential copper, nickel, gold and platinum mining in northern Minnesota?"

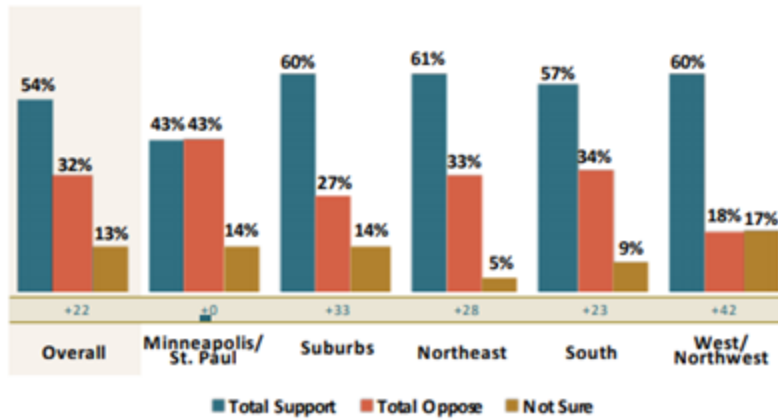


Figure 3. According to internal polling, every jurisdiction but one supported mining by a significant margin. Minneapolis and Saint Paul were evenly split between favor and oppose.

### Shortcomings of Jim Stock’s Economic Analysis

Many commenters who oppose the Twin Metals Minnesota lease renewal will do doubt cite a letter written to the U.S .Forest Service by Harvard economics professor James Stock and Jacob Brandt contending the mine would be a net negative for the region. Although this is often generalized as a study by Harvard University, it is a personal letter written by the authors, not an official study, and we therefore reference it as the “Stock Report,” rather than a “Harvard Study.”

Understanding this technical distinction is less important than understanding the several shortcomings of the Stock Report’s analysis which renders its conclusions dubious, at best.

Among the most egregious oversights of the Stock Report is that it intentionally omitted the economic impact of induced jobs generated from mining operations, and its assumption that the recreational economy would decline by either 1.2 percent or 2.4 percent annually are not supported by any empirical data.

### Omitting Induced Jobs Is Intellectually Dishonest

As shown in Table 1, the high wages provided by employment in the mining industry result in the creation of 1.78 induced jobs for every mining job created, as mine employees spend their paychecks in the broader economy on school supplies for their children, visits to the doctor’s office, eating at restaurants, on tourism-related activities, etc.

However, the Stock Report intentionally omitted the induced jobs would be created by the TMM mining project from its analysis.<sup>7</sup> As a result, the report vastly, and incorrectly, underrepresents the vast economic gains the mine would provide to the local community.

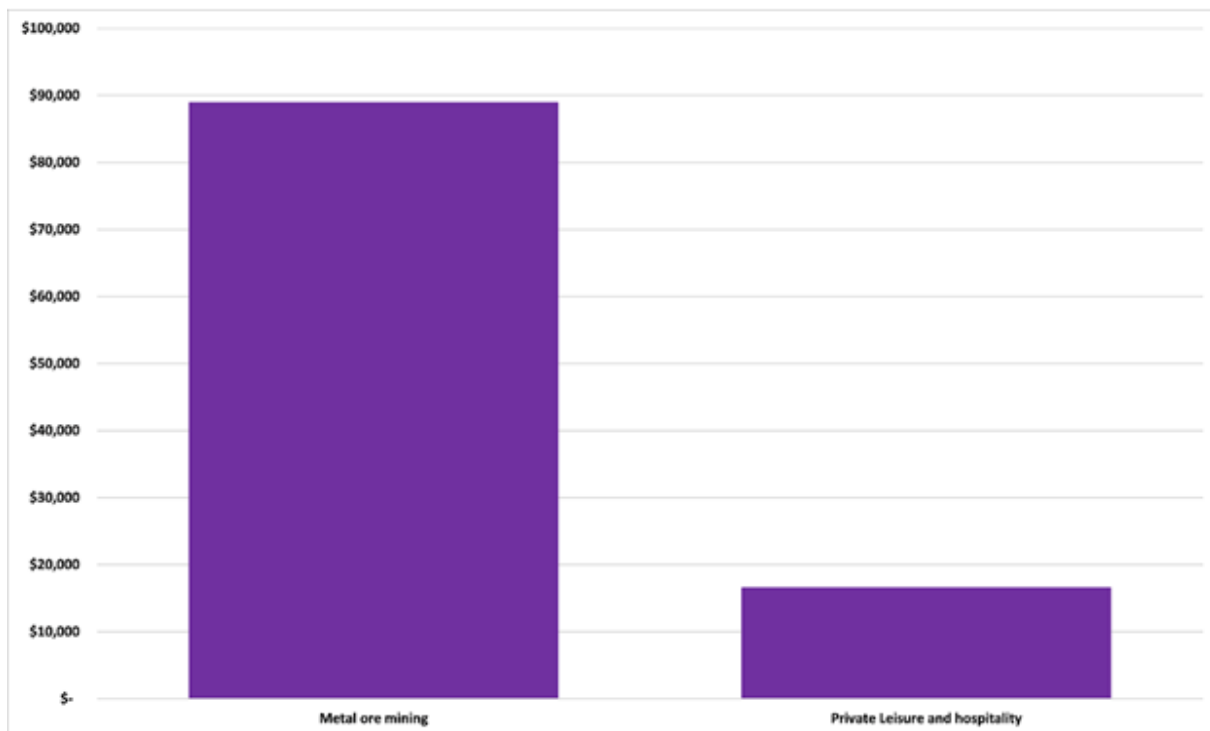
The Stock Report attempted to obscure the importance of this omission by claiming:

*“There is in any event no reason to think induced effects would differ depending on the income source so they would be proportional to direct plus indirect income changes for both the mining and hospitality industry.”*

However, John Phelan, an economist at Center of the American Experiment who studied at the London School of Economics, argues this logic is dreadfully wide of the mark.

For example, Figure 4 shows average annual pay in all private establishment sizes in 2017 in St. Louis County for Metal ore mining and Leisure and hospitality. For mining the figure was \$88,885, for leisure and hospitality it was just \$16,542. As mine workers have more money to spend than leisure and hospitality workers, it follows that there will be more induced jobs resulting from mining than from leisure and hospitality.<sup>8</sup>

Figure 4. Contribution to state gross product, per job.



<sup>7</sup> James H. Stock, “U.S. Forest Service (USFS) Environmental Assessment (EA) on Proposed 20-year Mineral Leasing Withdrawal in Superior National Forest,” Letter to the U.S. Forest Service, August 6, 2018, <https://bit.ly/2RBdxlc>.

<sup>8</sup> John Phelan, “With Another Dubious Assumption, Harvard Study Authors Tilt the Scales Against Mining,” Center of the American Experiment, September 10, 2018, <https://bit.ly/2Mldog7>.

Figure 4. Mining jobs create more induced jobs because the wages they pay are far greater than the wages earned in tourism jobs. Source data are from the Bureau of Labor Statistics.

And that is what the IMPLAN modeling software shows. Table 2 shows the results for Minnesota generated by IMPLAN of 100 new jobs in both copper mining and full service restaurants holding all else equal. Because of the higher wages in the direct effects and the larger scale of the supply chains in the indirect effect, 100 copper mining jobs generate 128 induced jobs while 100 restaurant jobs generate just 20.

Table 2: Economic impacts of 100 new jobs in Minnesota

Copper mining				
Impact Type	Employment	Labor Income (\$)	Value Added (\$)	Output (\$)
Direct Effect	100	\$ 16,586,218	\$ 44,247,823	\$ 65,444,929
Indirect Effect	51	\$ 2,909,860	\$ 5,902,288	\$ 12,220,982
Induced Effect	128	\$ 6,163,375	\$ 10,321,789	\$ 18,034,443
Total Effect	279	\$ 25,659,453	\$ 60,471,901	\$ 95,700,354
Full service restaurants				
Impact Type	Employment	Labor Income (\$)	Value Added (\$)	Output (\$)
Direct Effect	100	\$ 2,315,844	\$ 2,722,269	\$ 5,105,176
Indirect Effect	11	\$ 727,065	\$ 1,139,716	\$ 2,138,649
Induced Effect	20	\$ 966,320	\$ 1,616,913	\$ 2,826,681
Total Effect	131	\$ 4,009,228	\$ 5,478,897	\$ 10,070,505

Source: IMPLAN

Table 2: Mining jobs pay far higher wages than tourism jobs, and as a result, employment in the mining industry leads to more induced jobs than employment in the leisure and hospitality sector.

Induced jobs are 15% of the total effect for restaurant employment but 46% of the total effect for copper mining employment. Excluding the induced effects will lower the expected benefits of both, but that the reduction will be greater for mining.

In short, by excluding induced jobs based on such a bizarre assumption, Stock and Bradt give a distorted picture of the wider impacts of employment in mining and leisure. As with their assumption of jobs losses in the leisure industry, this serves to make mining look relatively less beneficial than leisure.

### The Stock Report's Assumptions for Tourism and Hospitality Decline Are Unsupported by Real-World Data

In addition to omitting important jobs numbers, the letter by Professor Stock assumes mining would result in a reversal of the projected growth in tourism in the Boundary Waters Canoe Area Wilderness. The letter assumes tourism would decline at a rate of 1.2 percent to 2.4 percent per year, or approximately 21.5 percent to 38.5 percent over 20 years, but provides exactly zero empirical evidence to support this assumption.

The footnote supposedly supporting this claim is a study published in 1996 examining population growth in two counties in northwestern Montana from 1969 through 1992. It is hard to imagine how a study from

22 years ago examining even older trends from only two counties in Montana would be applicable to mining in modern day Minnesota.

Interestingly, the Stock letter does not even assume mining will harm the environment. This begs the question, why would anyone not eat in a restaurant, stay overnight in a motel, or go canoeing because an environmentally responsible mine is located 25, 50, or 100 miles away?

Rather than basing their assumptions on mining areas of Montana spanning from the Nixon administration through the George H.W. Bush administration, it would have been more appropriate for the authors of the Stock Report to seek a more-local example of a modern mine with advanced environmental-protection technology and a modern regulatory regime.

Such an example exists at the Eagle Mine, a nickel-copper mine which began operating in Marquette County, Michigan in 2014. Interestingly, employment in the leisure and hospitality sectors have *increased* in Marquette County since the mine has begun operation.<sup>9</sup>

Figure 5 shows the change in employment in the five counties bordering Marquette County: Baraga, Iron, Dickinson, Menominee, Delta, and Alger.<sup>10</sup> We see that, in Marquette County itself, employment in the Leisure and hospitality sector actually *increased* after the Eagle Mine opened. In other words, mining was associated with more jobs in Leisure and hospitality. Employment in this sector went up in three of the neighboring counties, and went down in another three.

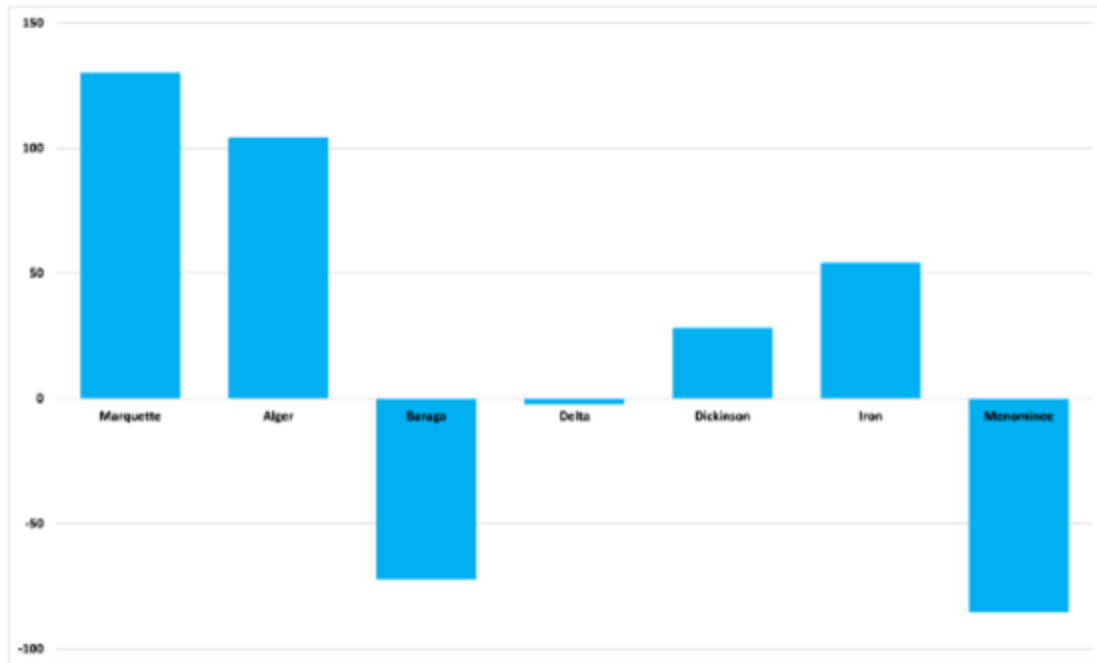
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<sup>9</sup> Bureau of Labor Statistics.

<sup>10</sup> John Phelan, "Data From Michigan Suggests that Mining Doesn't Destroy Leisure and Hospitality Jobs," Center of the American Experiment, August 31, 2018, <https://bit.ly/2QZ1jh3>.



Figure 5. Net Change in Leisure and Hospitality Employment, 2014-2017

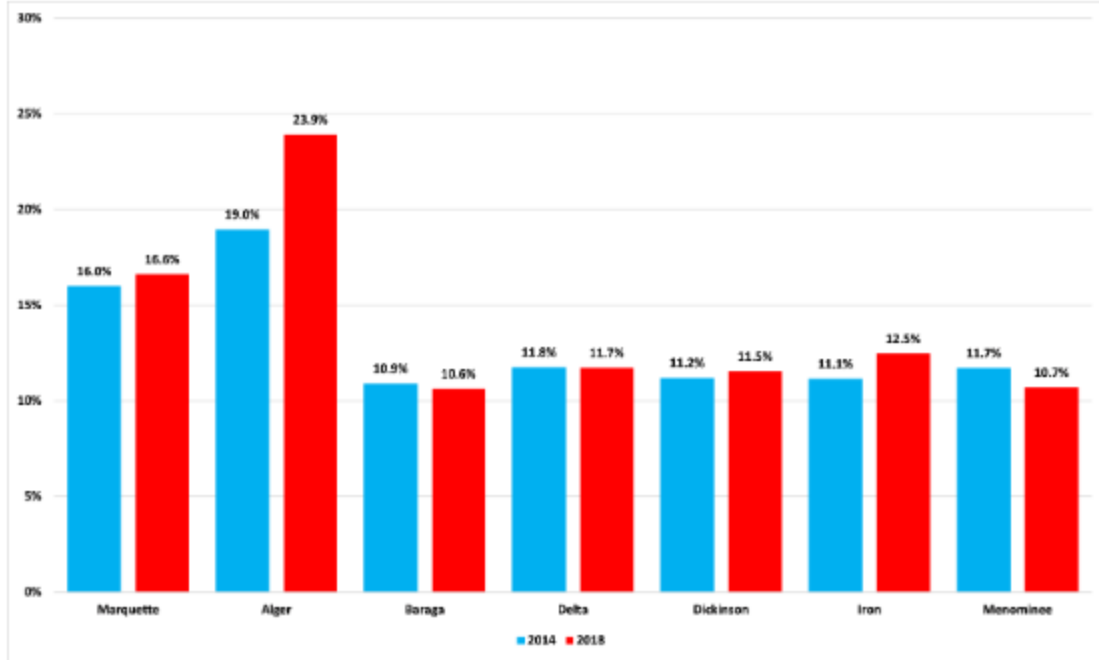


Source: Bureau of Labor Statistics

*Figure 5. Jobs in the leisure and hospitality sector have increased in Marquette County since the Eagle Mine began operations in 2014. The growth in tourism jobs in Marquette County casts doubt on the validity of the Stock Report's unsupported assumption that tourism and hospitality jobs will decrease by 1.2 or 2.4 percent per year if the TMM mine comes to fruition.*

Furthermore, some of these counties have been losing jobs across the board. Between 2014 and 2017, total employment fell in Baraga, Delta, Dickinson, and Menominee so the declines in Leisure and hospitality sector employment might be part of an overall trend. Figure 6 illustrates that. Despite falls in the level of employment in Leisure and hospitality 2014 and 2017 in Baraga, Delta, and Menominee, as a share of total employment the decline was only particularly large in Menominee.

Figure 6. Leisure and Hospitality Employment as a Share of Total Employment



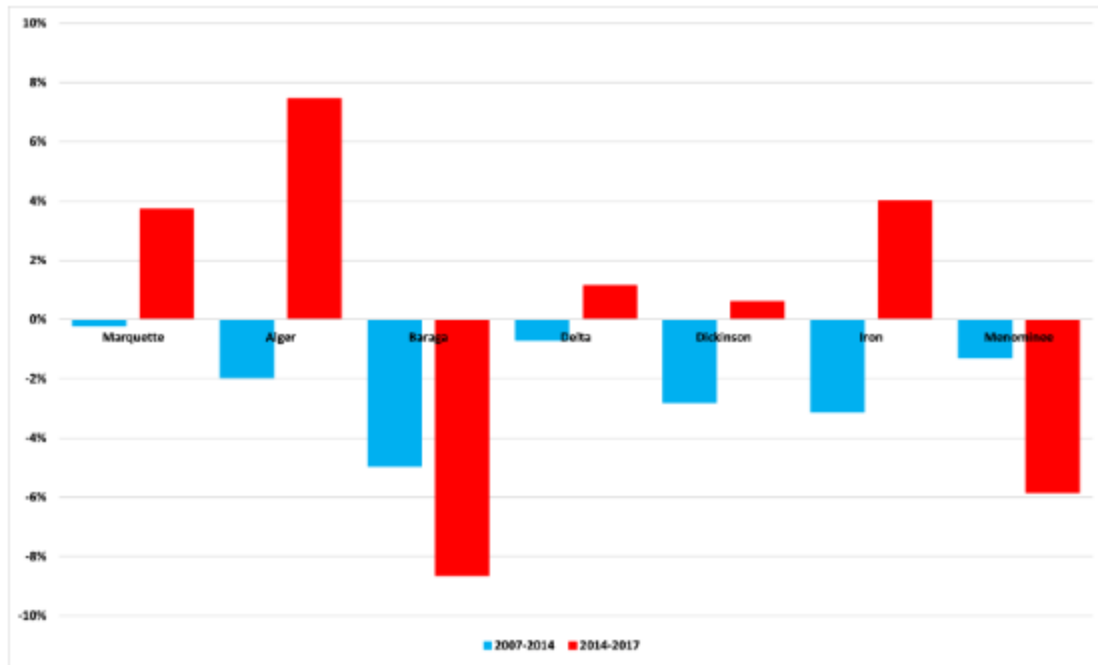
Source: Bureau of Labor Statistics

Figure 6. Rather than reducing the proportion of tourism and hospitality jobs in Marquette County, the opening of the Eagle Mine has coincided with a these jobs assuming a larger percentage as a share of total employment since the Eagle Mine began operations.

As for Marquette County, where the Eagle Mine actually is, total employment also fell making the gain in Leisure and hospitality jobs even more striking.

What did the opening of the Eagle Mine do to the growth rate (or otherwise) of employment in Leisure and hospitality in these counties? Figure 7 illustrates this. We see that in only two counties – Baraga and Menominee – did the rate of growth in Leisure and hospitality employment worsen after the mine opened relative to the years before.

Figure 7. Growth Rate of Employment in Leisure and Hospitality



Source: Bureau of Labor Statistics

Figure 7. The rate of growth for employment in leisure and hospitality grew by nearly 4 percent between 2014 and 2017.

It is important to note the Eagle Mine is just one mine, however, the growth in tourism related employment in Marquette County casts doubt on the validity of the assumptions used by the authors of the Stock Report for a dramatic reduction in tourism-related employment in the BWCA area.

In conclusion, the Stock Report's assertions that the TMM mine will cause more economic harm than good were obtained by omitting benefits and manufacturing costs. Relevant examples of modern mines operating in the Midwest were available for comparison, but this example was not used, likely because the results did not support the author's policy preferences.

It is worth noting that John Hinderaker, the President of Center of the American Experiment challenged Professor Stock to debate the respective merits of our study and his study in Hibbing, Minnesota. Hinderaker offered up 21 dates in an effort to accommodate Professor Stock's schedule. Regrettably, Professor Stock responded saying none of the 21 proposed dates would fit with his schedule.

After a thorough review, Center of the American Experiment has determined the Stock Report was more advocacy than scholarship, and the Bureau of Land Management should disregard the findings of the Stock Report when weighing whether to renew the mineral leases for the TMM mine.

### Minnesota's Strict Regulations Protect the Environment

Minnesota has among the strictest environmental standards for mining in the world. Two-thirds of *Unearthing Prosperity* is dedicated to detailing the extensive environmental protection and monitoring requirements used to regulate mining in our state, and how modern mines have operated safely.

The approval of permits for the PolyMet NorthMet project demonstrates the scientists at the Minnesota Department of Natural Resources (DNR) and Pollution Control Agency (PCA) believe mining operations can meet Minnesota's strict standards for environmental protection.<sup>11</sup> Renewing the leases for Twin Metals is a necessary step for allowing state agencies to begin their analysis to determine whether the Twin Metals mine can meet these standards, as well.

We believe the TMM project can, and will, meet these strict standards because modern mining has become increasingly safe for the environment.

For example, the U.S. Environmental Protection Agency (EPA) recently concluded a lengthy rulemaking, evaluating whether U.S. hardrock mines should provide EPA with additional financial assurance pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)—also known as the Superfund legislation—Section 108(b) that is separate from the financial assurance that mines are already required to provide to state regulators, the U.S. Bureau of Land Management (BLM), and the U.S. Forest Service.<sup>12,13,14</sup> 64 In the course of this rulemaking process, EPA made a detailed assessment of the scope and effectiveness of existing federal and state environmental protection rules for hardrock mines.

EPA concluded that modern regulations have greatly reduced the risk of taxpayer financed response actions, and this conclusion is supported by the experience of other federal agencies. For example, in letters sent to Senator Murkowski, BLM and the Forest Service stated that no modern mines permitted since 1990 by either BLM or the Forest Service have been added to the National Priorities List (NPL), BLM responded that it had approved 659 plans since 1990 and none had been added to the NPL and the Forest Service reported approval of 2,685 plans since 1990 with no sites being placed on the NPL (See Figure 8.<sup>15,16</sup>

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<sup>11</sup> Dan Kraker, "DNR Backs PolyMet Mine Permits," MPR News, November 1, 2018, <https://bit.ly/2RXHz4>.

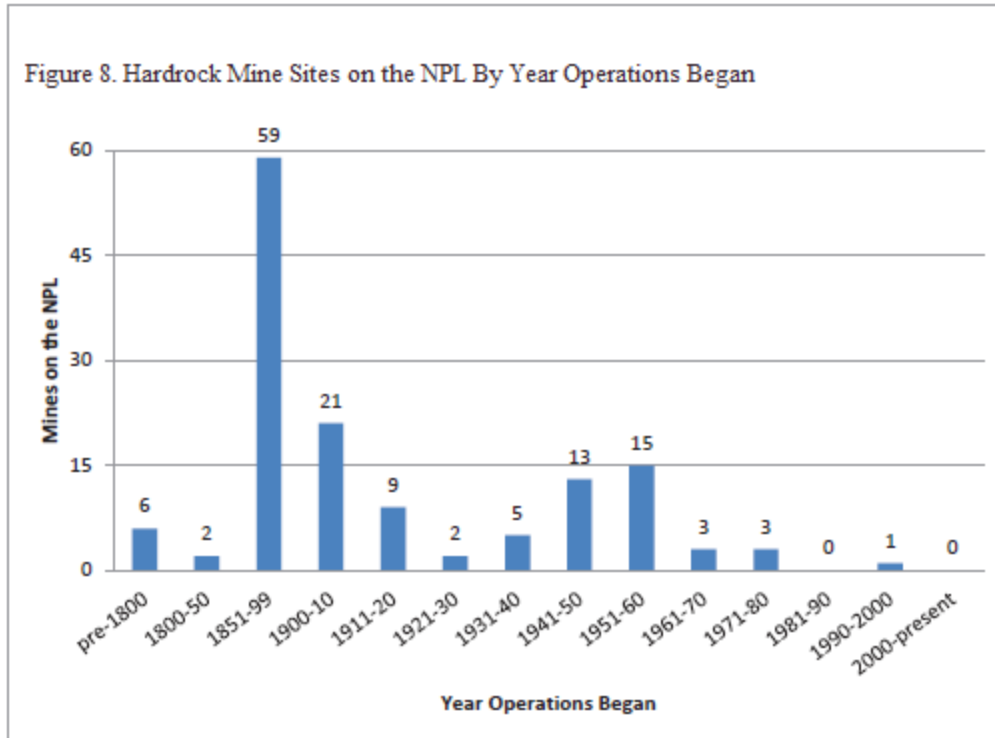
<sup>12</sup> Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR Part 320, is commonly called "the Superfund."

<sup>13</sup> U.S. EPA Financial Responsibility Requirements Under CERCLA Section 108(b) for Classes of Facilities in the Hardrock Mining Industry, *Federal Register*, Vol. 83, No. 35, February 21, 2018, pp. 7556-7588, <https://bit.ly/2Oeo4gR>.

<sup>14</sup> For purposes of this rulemaking, EPA defines "hardrock mines" as: "facilities that extract, beneficiate, or process metals (e.g., copper, gold, iron, lead, magnesium, molybdenum, silver, uranium, and zinc), and non-metallic non-fuel minerals (e.g., asbestos, gypsum, phosphate rock, and sulfur)," *Federal Register* at p. 7557.

<sup>15</sup> *Federal Register*, Vol. 83, No. 35, p. 7568.

<sup>16</sup> 68 U.S. EPA, "Superfund: CERCLA Overview," Accessed July 25, 2018, <https://bit.ly/2fWRLTq>.



*Figure 8. Modern mining has an impressive history of environmental stewardship. The vast majority of mine sites that have had negative environmental impacts began production before the year 1900. The Barite Hill Mine in South Carolina is the only site that has been added to the NPL since 1990. Based on EPA's research about this site, EPA states that it does not consider the mine to be representative of modern mining practices and instead would be more properly characterized as a legacy mine site. EPA has confirmed that South Carolina updated its mining law in 1990, after the mine began operating, to impose reclamation requirements for mines.*

Despite the well-established track record of environmental success stories at modern mines, there are stakeholders who object to the lease renewal on environmental grounds.

Environmental concerns about the proposed Twin Metals mine spring primarily from claim that the mine will impair the Boundary Waters Canoe Area and Wilderness (BWCA), and that the area is simply too fragile to permit a non-ferrous mine in the Rainy River Watershed.

Canada, evidently, feels otherwise, because a large gold mine, named the New Gold Rainy River mine, has opened 40 miles from the Minnesota border (See Figure 9).<sup>17,18</sup> The New Gold Rainy River mine is massive, holding an estimated 3.8 million ounces of gold reserves and 9.4 million ounces of silver. This equates to approximately \$4.7 billion in gold resources and \$155 million in silver resources.

The New Gold Mine began mining in November 2017, and thanks to stringent environmental protections, it has operated without major incident or impairment to the BWCA.

<sup>17</sup> New Gold, "Rainy River," Operations, Accessed January 20, 2019, <https://bit.ly/2HotPt8>.

<sup>18</sup> Minnesota Department of Natural Resources, "Exploration for Metallic Mineral Resources in Minnesota: Gold," Published 2017, <https://bit.ly/2LQ18mM>.

Figure 9.

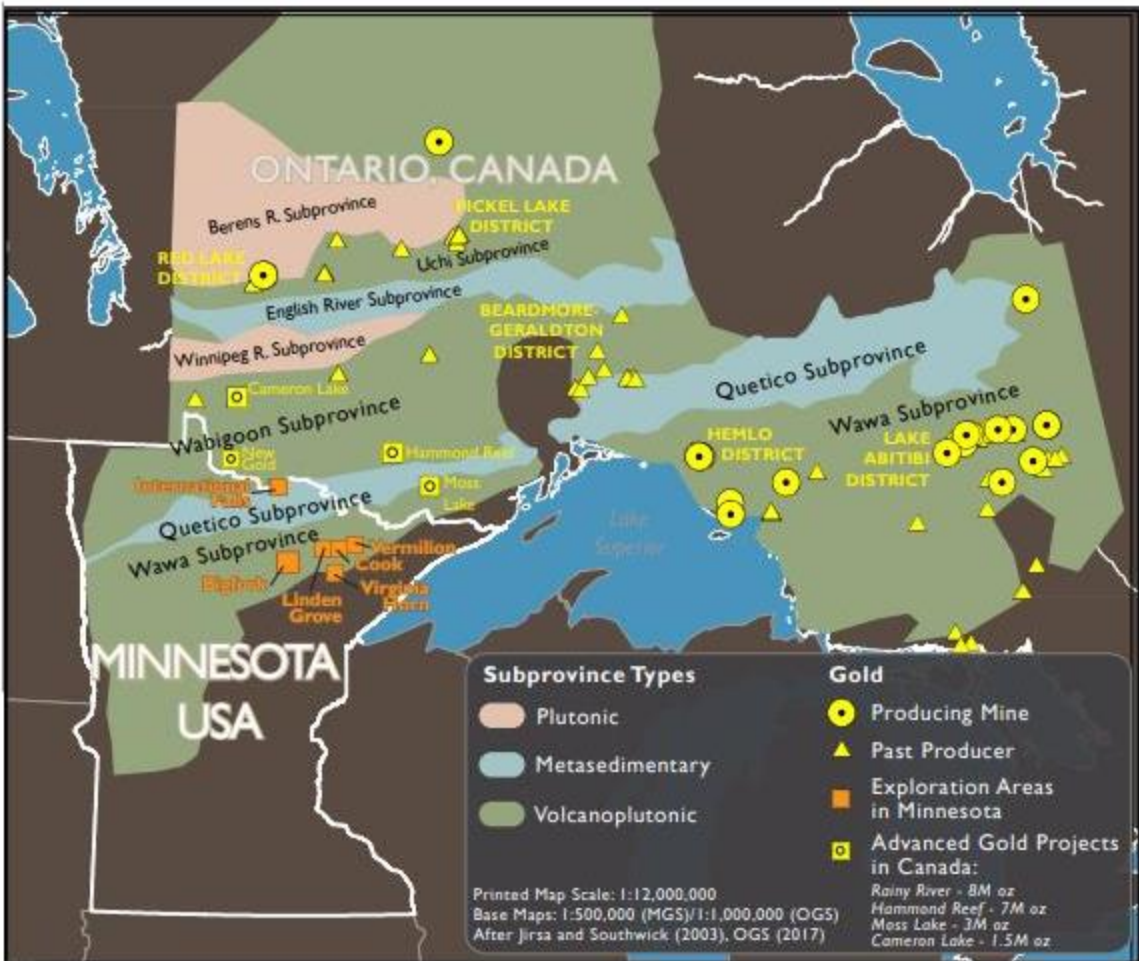


Figure 9. The New Gold Rainy River mine in Canada is operating 40 miles north of the Minnesota border in the BWCA watershed.

Any proposed Twin Metals Mine will require the approval of multiple state environmental protection agencies. It is for these reasons that Center of the American Experiment, urges the BLM to renew the mineral leases for the TMM project.

### Compliance with Federal Law Requires BLM to Renew TMM’s Leases

Compliance with the National Materials and Minerals Policy, Research and Development Act of 1980 (30 USC § 1601 *et seq.*, “MMPRDA”) requires BLM to renew the TMM mineral leases. MMPRDA establishes the importance of responsibly developing domestic minerals:

“...[I]t is the continuing policy of the United States to promote an adequate and stable supply of materials necessary to maintain national security, economic well-being and industrial production, with appropriate attention to a long-term balance between resource production, energy use, a healthy environment, natural resources conservation, and social needs....

The Congress further declares that implementation of this policy requires that the President shall, through the Executive Office of the President, coordinate the responsible departments and agencies to, among other measures... identify materials needs and assist in the pursuit of measures that would assure the availability of materials critical to commerce, the economy, and national security... promote and encourage private enterprise in the development of economically sound and stable domestic materials industries; and...encourage Federal agencies to facilitate availability and development of domestic resources to meet critical materials needs.” 30 USC § 1602

The TMM mineral leases contain a significant copper-nickel mineral deposit. Both copper and nickel are essential to the national economy, our defense, the industrial and technology sectors, and our infrastructure. MMPRDA clearly directs BLM to take the necessary steps to make domestic mineral resources like the TMM deposit available for exploration and development. Failure to renew the TMM leases would thus be inconsistent with the MMPRDA.

Renewing these leases will provide TMM the opportunity to advance the TMM Project to the environmental permitting stage and to apply for the necessary local, state, and federal environmental permits required to develop their proposed mining operation. This rigorous permitting process will require TMM to demonstrate that the proposed TMM project will protect all aspects of the human and natural environment. Pursuant to MMPRDA, BLM must renew the TMM leases to allow the Company to continue its work and to proceed with the environmental permitting process. Consequently, BLM’s decision to renew the TMM leases is not an environmental decision. Rather, it is a land tenure decision authorized by federal statute that would preserve TMM’s rights to continue to develop this important deposit and to proceed to the environmental permitting process.

## **Conclusion**

The economic importance of environmentally-responsible mining in Minnesota will be a major source of prosperity for decades to come. It is for this reason Center of the American Experiment urges the BLM to re-issue mineral leases for the proposed TMM mining project.

Sincerely,

Isaac M. Orr  
Policy Fellow  
Center of the American Experiment