

January 10, 2022

James Mosley  
Draft List of Critical Minerals, MS-102 U.S. Geological Survey  
12201 Sunrise Valley Dr.  
Reston, VA 20192

Submitted via regulations.gov DOI-2021-0013

Dear Mr. Mosley,

Thank you for the opportunity to provide comments on the United States Geological Survey's (USGS) Draft List of Critical Minerals (86 Fed Reg. 62199, Nov. 9, 2021). Please accept these comments on behalf of the undersigned organizations who work with mining-impacted communities nationwide.

### **Environmental Justice Must Be Paramount to Supply Risk**

Signatories urge USGS to factor growth trends from a more circular materials economy in the critical minerals list (CML) methodology. Most importantly, no metric or aspect of a circular materials economy should disproportionately impact frontline, environmental justice communities. For instance, the White Mesa Mill in southeastern Utah (owned by Energy Fuels) was designed to close after 15 years as a conventional uranium mill, yet now purports itself as part of the minerals supply solution despite current Environmental Protection Agency (EPA) violations prohibiting the mill from receiving certain materials.<sup>1</sup>

The mill has long threatened the Ute Mountain Ute Tribe and is opposed by them.<sup>2</sup> The Tribe's community of White Mesa sits only a few miles south and downgradient of the mill site, where there is existing shallow groundwater contamination, and toxic, and radioactive waste will remain forever in the hundreds of acres of tailings ponds, some lined only with a single, decades-old PVC liner. Communities like White Mesa deserve to be listened to and deserve not to live in fear of being poisoned so that the rest of the country can get what it needs.

### **General Comments**

Overall, the draft CML has some improvements from the current critical minerals list (2018 CML).<sup>3</sup> For instance, commenters, USGS, and Congress agree uranium is a fuel mineral; and

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<sup>1</sup> See Dec. 2, 2021 EPA Reg. 8 CERCLA OSR Unacceptability Notice Letter to Energy Fuels, Ref: 8ENF-RO-R.

<sup>2</sup> See Ute Mountain Tribal Council Resolution No.: 2021-135 (August 24, 2021) "WHEREAS, the White Mesa community sits three miles south of the White Mesa Mill owned and managed by Energy Fuels Resources (USA) which process radioactive waste materials, such as uranium, and has not only far exceeded the period of time for its operations, but has accepted and processed materials that were not a part of its original design and has gone beyond the purposes for which the Mill operates;"

<sup>3</sup> Final Critical Minerals List 2018 <https://www.federalregister.gov/documents/2018/05/18/2018-10667/final-list-of-critical-minerals-2018>

the critical minerals definition Congress provided excludes fuel minerals.<sup>4</sup> For the reasons USGS provided, commenters provided to the 2018 CML,<sup>5</sup> and additional reasons described below, we also support USGS removing certain commodities like helium, potash, strontium, and rhenium from the CML.

The Energy Policy Act of 2020 also requires the Department of Interior (DOI) to periodically review, and if necessary, revise the CML. The law also grants DOI broad discretion to “determine that minerals, elements, substances, and materials previously determined to be critical minerals are no longer critical...”<sup>6</sup> USGS should especially scrutinize listed elements mined as byproducts.<sup>7</sup>

Unfortunately, some domestic mining proponents justify permits for new copper or gold mines because those deposits often accompany CML byproducts.<sup>8</sup> Those byproducts also exist in large supply in domestic historic mine tailings. DOE recently awarded \$19 million to 13 projects to recover critical minerals from abandoned mine sites.<sup>9</sup> For byproducts still present in historic mine tailings, USGS’s CML methodology should quantify supply risk factoring in the supply potential from the estimated 500,000 abandoned hardrock mines.<sup>10</sup>

### **USGS’s CML Methodology Must Account for Growing Trends in Circular Economy, Material Recycling, and Reuse**

In June 2021, the Biden administration released a report addressing how the United States can meet increased material demand associated with the ongoing transition to low-carbon renewable energy.<sup>11</sup> The report, prepared in response to the President’s Executive Order 17017, “America’s Supply Chains,” calls for an aggressive approach to mineral recycling:

*“Recycling offers many benefits to critical materials sustainability. By developing a circular economy for advanced battery materials, the United States can capture this material back into*

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<sup>4</sup> Public Law 116– 260, Energy Policy Act of 2020, Section 7002(a)(3)(B), passed as part of the Consolidated Appropriations Act of 2020.

<sup>5</sup> See <https://earthworks.org/publications/joint-comments-submitted-to-the-interior-department-on-draft-list-of-critical-minerals/>. Helium is a byproduct of oil and gas production. The United States has a helium surplus. Potash and rhenium have diverse supplies from willing countries. Strontium can be substituted for barite.

<sup>6</sup> Section 7002(b)(5)(B)(ii) of the Energy Policy Act.

<sup>7</sup> See Renner and Wellmer: Volatility drivers on the metal market and exposure of producing countries. *Mineral Economics* (2020) 33:311–340 <https://doi.org/10.1007/s13563-019-00200-8>. Cited under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>)

<sup>8</sup> For a fuller discussion of recent critical minerals policy developments, see generally <https://earthworks.org/publications/just-minerals/>. The Perpetua Resources Stibnite project on Nez Perce territory in Idaho purports their proposed gold mine as an antimony source. See also, [New York Times: As Miners Chase Clean Energy Minerals, Tribes Fear a Repeat of the Past \(Dec. 27, 2021\)](#). Another operator in Oregon, American Mineral Research, purports their exploratory nickel and copper program as a tellurium source.

<sup>9</sup> See DOE press release April 29, 2021, <https://www.energy.gov/articles/doe-awards-19-million-initiatives-produce-rare-earth-elements-and-critical-minerals> .

<sup>10</sup> For example, antimony and tellurium are byproducts with low criticality scores and relative abundance in domestic gold and copper mine tailings. USGS has extensively researched the potential to recover critical mineral byproducts from mine tailings and the CML methodology should quantify many of them as low supply risk.

<sup>11</sup> See <https://www.whitehouse.gov/wp-content/uploads/2021/06/100-day-supply-chain-review-report.pdf>.

*the economy and reduce the need for virgin extraction while reducing greenhouse gas emissions.”*

Also in June 2021, the Federal Consortium for Advanced Batteries (FCAB), an interagency body of the Energy, Defense, Commerce, and State Departments, released the National Blueprint for Lithium Batteries: 2021-2030 (Battery Blueprint).<sup>12</sup> The Battery Blueprint offers detailed priorities for more responsibly sourcing the materials for rechargeable batteries. It seeks to “secure access to raw and refined minerals and discover alternatives for critical minerals for commercial and defense applications” and “enable US end-of-life reuse and critical mineral recycling at a scale and full competitive value chain in the US.”<sup>13</sup>

The European Commission (EC), the executive body that forms legislation and regulations on behalf of the European Union, passed a directive in 2006 mandating collection and recycling for all batteries.<sup>14</sup> An updated directive is now before the EC that would cover the entire life cycle of batteries, from sourcing of materials to recycling.<sup>15</sup> This Battery Directive was followed by the March 2020 adoption of the EC’s Circular Economy Action Plan. This plan restricts single-use products, bans destruction of unsold durable goods, and makes it easier for consumers to repair products, among other measures.<sup>16</sup>

Robust circular economy policies, like the EC Battery Directive, have the potential to reduce new mining demand for cobalt, copper, lithium, and nickel by 25-55 percent of total demand by 2040.<sup>17</sup> Current recycling capacity and processes focus on cobalt and nickel, yet large-scale implementation to recycle more of these and other elements is achievable with the right blend of incentives and mandates. Recycling is particularly important for recovery of metals.<sup>18</sup> It is possible to recycle 95 percent of the four key minerals found in Lithium-ion batteries: cobalt, copper, lithium, and nickel. Research has shown that recycling end-of-life batteries has the greatest impact on reducing primary demand for battery metals, including cobalt, lithium, nickel, and manganese.<sup>19</sup>

USGS’s CML methodology should weigh these circular economy initiatives for their potential to reduce supply risk from primary metals production.

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<sup>12</sup> See [https://www.energy.gov/sites/default/files/202106/FCAB%20National%20Blueprint%20Lithium%20Batteries%200621\\_0.pdf](https://www.energy.gov/sites/default/files/202106/FCAB%20National%20Blueprint%20Lithium%20Batteries%200621_0.pdf).

<sup>13</sup> Ibid at page 4.

<sup>14</sup> See <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32006L0066>.

<sup>15</sup> See [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_20\\_2312](https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2312).

<sup>16</sup> See [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_20\\_420](https://ec.europa.eu/commission/presscorner/detail/en/ip_20_420).

<sup>17</sup> Dominish, E., Florin, N., Wakefield-Rann, R. (2020). The potential of avoidance, reuse and recycling solutions to minimise mining for lithium-ion batteries for electric vehicles. Report prepared for Earthworks by the Institute for Sustainable Futures, University of Technology Sydney. Available at: <https://www.earthworks.org/publications/recycle-dont-mine/>.

<sup>18</sup> See [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_20\\_2312](https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2312).

<sup>19</sup> See <https://earthworks.org/publications/recycle-dont-mine/>.

## **USGS's Methodology Should Account for the Infrastructure Bill's CML Grants and Subsidies to Reduce Criticality for Certain Commodities**

USGS proposed this new CML list on November 9, 2021. Six days later, November 15, President Biden signed the Infrastructure Investment and Jobs Act (IIJA or Infrastructure law Public Law No: 117-58). IIJA created and funded several Department of Interior (DOI) administered programs, including within USGS, specially designed to reduce critical mineral supply chain risks. In particular, IIJA's Division D, Title II provides grants for mapping, research, a rare earth element demonstration facility, grants for domestic battery material processing, recycling, and reuse, as well as mining.<sup>20</sup> Commenters do not necessarily support each of these programs.

Yet, in light of this Congressional direction, USGS's methodology should give more weight to these IIJA programs and related efforts to reduce supply risk.

### **Conclusion**

Many countries, including the United States, reduce mineral supply risk by supporting circular economy policies. Providing the right blend of incentives and mandates drives more investment where it is actually needed. The Europeans have outpaced the United States in circular economy development. Yet, IIJA's and related programs will shape improving domestic trends in recycling and collection rates, reuse, and mineral substitution that USGS's CML methodology should accurately reflect.

Thank you for your consideration.

Black Hills Clean Water Alliance  
Center for Biological Diversity  
Earthjustice  
Earthworks  
Friends of Buckingham  
Friends of the Inyo  
Grand Canyon Trust  
Great Basin Resource Watch  
Idaho Conservation League  
Information Network for Responsible Mining  
League of Conservation Voters  
Lynn Canal Conservation

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<sup>20</sup> Please note, not all signatories support all these programs. Sec. 40201. Earth Mapping Resources Initiative. Sec. 40202. National Cooperative Geologic Mapping Program. Sec. 40203. National Geological and Geophysical Data Preservation Program. Sec. 40204. USGS energy and minerals research facility. Sec. 40205. Rare earth elements demonstration facility. Sec. 40206. Critical minerals supply chains and reliability. Sec. 40207. Battery processing and manufacturing. Sec. 40208. Electric drive vehicle battery recycling and second-life applications program. Sec. 40209. Advanced energy manufacturing and recycling grant program. Sec. 40210. Critical minerals mining and recycling research. Sec. 40211. 21st Century Energy Workforce Advisory Board. Sec. 41003. Mineral security projects.

Malach Consulting  
Mining Impact Coalition of Wisconsin  
Montana Environmental Information Center  
Multicultural Alliance for a Safe Environment  
Okanogan Highlands Alliance  
Patagonia Area Resource Alliance  
Rapid Creek Watershed Action  
Salmon State  
Sierra Club  
The Wilderness Society  
Virginia Community Rights Network  
Virginia Environmental Justice Collaborative  
Western Watersheds Project