BLM

Rhyolite Ridge Lithium-Boron Project Environmental Impact Statement

Public Scoping Report

March 27, 2023

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March 2023

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Acronyms and Abbreviations

BLM	Bureau of Land Management
EIS	Environmental Impact Statement
EPM	Environmental Protection Measure
FLPMA	Federal Land Policy and Management Act
Ioneer	Ioneer Rhyolite Ridge LLC
NEPA	National Environmental Policy Act
PAG	Potentially Acid Generating
Plan	Plan of Operations
Project	Rhyolite Ridge Lithium-Boron Project
U.S.	United States
USEPA	United States Environmental Protection Agency

1.0 Introduction

In compliance with the National Environmental Policy Act (NEPA), the United States (U.S.) Department of the Interior, Bureau of Land Management (BLM), is preparing an Environmental Impact Statement (EIS) to address potential effects from the development of a new lithium and boron mine, the Rhyolite Ridge Lithium-Boron Project (Project), in Esmeralda County, Nevada.

Ioneer Rhyolite Ridge LLC (Ioneer) submitted the Plan of Operations (Plan) (NVN-098058) and Nevada Reclamation Permit Application for the Rhyolite Ridge Lithium-Boron Project (Project) to the Tonopah Field Office of the Battle Mountain District BLM and Nevada Division of Environmental Protection, Bureau of Mining Regulation and Reclamation in May 2020. Following review by the BLM, revised Plans were submitted in July 2020, August 2020, November 2021, January 2022, and July 2022. The Plan was accepted by the BLM in August 2020 and subsequently in August 2022. Ioneer proposes to develop the Project in accordance with BLM Surface Management Regulations under 43 Code of Federal Regulations 3809.

The Project is located approximately 40 air miles southwest of Tonopah and 13 air miles northeast of Dyer. The proposed Plan boundary is 7,166 acres, which consists of the Operational Project Area and access road and infrastructure corridor. There are approximately 7,137 acres of land administered by the BLM and approximately 29 acres of private land within the Plan boundary. The Operational Project Area is situated on the west side of the central part of the Silver Peak Range, in a small basin in rolling foothills off the northeast side of Fish Lake Valley. The Project would have a life expectancy of approximately 23 years.

Public scoping is the process by which the BLM solicits public, tribal, and agency input on the issues, impacts, analysis methods, and potential alternatives that will be addressed in a NEPA document such as an EIS.

This report describes public scoping activities the BLM conducted for the proposed Project EIS; summarizes comments received during the public scoping period; and provides a preliminary list of issues and concerns about the proposed Project to address in the EIS.

2.0 Public Scoping Process

The public scoping process provides opportunities to:

- Introduce the Proposed Action and preliminary issues identified by the lead agency preparing the EIS.
- Engage state, local, and tribal governments and the public in refining preliminary issues and identifying new issues to be analyzed in the EIS.
- Refine the Proposed Action and identify potential alternatives.
- Identify permits, surveys, or consultations required by other agencies.
- Identify other interested parties to consult with during the NEPA process.

2.1 Public Scoping Notifications

The formal public scoping process began with a news release on December 19, 2022, and publication of a Notice of Intent in the Federal Register on December 20, 2022 (**Appendix A**). The BLM invited the public to submit comments during the public scoping period from December 20, 2022 through January 19, 2023. The Notice of Intent and the news release notified the public of the BLM's intent to prepare an EIS, provided information about the Proposed Action, described the purpose of the public scoping process, identified methods to provide comments, and provided contact information for questions regarding the Project. The news release advertised two public scoping meetings that were to be held virtually on January 4 and 5, 2023. The BLM also advertised the public scoping meetings through the BLM's ePlanning website.

The BLM issued a press release on January 4, 2023, notifying the public that the public scoping period for the Project would be extended by two weeks through February 3, 2023. The BLM further extended the scoping period for an additional 30 days through March 6, 2023, in response to additional requests from a cooperating agency and a consulting Tribe. A press release was issued to notify the public of the additional extension. Both press releases are provided in **Appendix A**.

2.2 Public Scoping Meetings

The BLM hosted two virtual public scoping meetings, which were held on January 4 and 5, 2023 (**Table 1**). The public scoping meetings gave agencies, organizations, the public, and other interested parties an opportunity to learn and ask questions about the Project and to share issues and concerns with the BLM. The BLM gave a presentation regarding the NEPA process and then Ioneer provided an overview of the Project. After the presentation (**Appendix B**), the BLM and Ioneer answered written and oral questions to encourage open and informal dialog between the public and agency representatives.

Table 1 Public Scoping Meeting Dates, Times, and Attendance

Date and Time	Location	Number of Attendees
January 4, 2023 – 2:00 p.m.	Virtual meeting via Zoom or phone	90
January 5, 2023 – 5:00 p.m.	Virtual meeting via Zoom or phone	47

The BLM provided a Project overview on the ePlanning website describing the Project and the public scoping process and the detailed Plan (**Appendix B**). Instructions on how to provide comments were included on the ePlanning website, in the presentation, and were discussed during the meetings. Following the meetings, the BLM posted videos of the virtual public meetings on the ePlanning website.

2.3 Tribal Consultation and Coordination

On January 29, 2020, the BLM Tonopah Field Office sent letters via certified mail to official tribal representatives of the Duckwater Shoshone, Timbisha Shoshone, and Yomba Shoshone tribes to inform them of the Project and to request any comments or questions they may have regarding the Project.

On February 11, 2020, five tribal representatives from the Timbisha Shoshone Tribe accompanied the BLM on a visit to the Project site. During the site visit, the tribal representatives expressed concern about impacts to prehistoric cultural resources and inquired about impacts to bighorn sheep (*Ovis canadensis*) and Tiehm's buckwheat (*Eriogonum tiehmii*). Tribal representatives stated that avoidance of cultural resources is preferred over mitigation.

On June 23, 2020, representatives from the Timbisha Shoshone and the Duckwater Shoshone tribes met with representatives of Ioneer and the BLM at the Project site to tour the area and discuss the Project and potential impacts. In a letter to the BLM dated June 26, 2020, the Duckwater Shoshone indicated that two areas where specific sacred items were located should be avoided by the Project activities. The Tribes requested that tribal monitors be present during ground-disturbing activities. The Tribes also requested another meeting with Ioneer to further discuss concerns.

The BLM reinitiated the Project and associated Project scoping letters were sent via email to official tribal representatives of the Big Pine Band of Owens Valley Paiute Shoshone Indians, Duckwater Shoshone, Timbisha Shoshone, Yomba Shoshone, Bishop Paiute, Benton (Utu Utu Gwaitu) Paiute, Te-Moak Tribe of the Western Shoshone, Ely Shoshone, and Shoshone-Paiute on December 19, 2022. Consultation/coordination between the BLM and the tribes is ongoing and will continue throughout the Project.

2.4 Federal, State, and Local Cooperating Agency Consultation

The BLM has consulted with the federal, state, and local cooperating agencies in **Table 2** during the EIS consultation process and will continue to consult throughout the EIS process. Memorandums of Understanding were sent on January 31, 2023, to cooperating agencies.

Table 2 Federal, State, and Local Cooperating Agencies Consulted by the BLM

Agency	Responsibility
U.S. Department of Energy	Energy Supply
U.S. Environmental Protection Agency (USEPA)	Human Health and Environment
U.S. Fish and Wildlife Service	Threatened and Endangered Species, Migratory Birds
Nevada Department of Wildlife	Wildlife, Migratory Birds, Sensitive Species
Nevada Division of Forestry	State-Protected Native Plants
Nevada Division of Environmental Protection	Mining Activities
Esmeralda County	Human and Natural Resources
Nye County	Human and Natural Resources

3.0 Public Scoping Comments

3.1 Public Scoping Comment Documents Received

Within this report, the full content of each electronic submittal or mailed letter is referred to as a "comment document." Each comment document received containing unique text was bracketed and coded into one or more "comments" using the methods described in **Section 3.2, Public Scoping Comment Processing**. The BLM received 95 unique comment documents. Of the 95 comment documents submitted, 16 were received via email or mail, and 79 were received via ePlanning.

As shown in **Table 3**, the largest number of comment documents were attributed to individuals (75 percent). Comments were received from Western Shoshone Defense Project, Western Shoshone National Council, Great Basin Resource Watch, Basin and Range Watch, Earthworks, Progressive Leadership Alliance of Nevada, Tonopah Development Corporation, Rotary Club of Tonopah, Nevada Mineral Exploration Coalition, Nevada Offroad Association, Nevada Mining Association, National Mining Association, Nevada Native Plant Society, Center for Biological Diversity, Esmeralda Cattle Company, Dragonfly Energy Corp., USEPA, U.S. Fish and Wildlife Service, Esmeralda County, Nye County, Mineral County, Nevada Department of Wildlife, Big Pine Paiute Tribe of the Owens Valley, Timbisha Shoshone Tribe, and 71 individuals or others that did not include or withheld their affiliation. A petition from local businesses expressing support for the Project was also received. Some commenters submitted multiple comment documents, while other comment documents were submitted on behalf of multiple entities.

Table 3 Number of Comment Documents Received by Affiliation

Affiliation Category	Number of Comment Documents
No Affiliation Included or Withheld	71
Interest Group[1]	9
Business	3
Federal Agency	2
State Agency/Counties	4
Tribal Groups[2]	6
Total	**95**

[1] This total includes one document that was submitted on behalf of four interest groups.
[2] Two tribal groups submitted multiple comment documents.

3.2 Public Scoping Comment Processing

The BLM used a systematic process to catalogue, organize, sort, and summarize comments submitted during scoping. The following steps describe the process used for processing comment documents, identifying comments, and grouping comments into issue categories:

1. Receive and log data for each comment document.

2. Assign each comment document a unique identifier (referred to as a document number) for tracking purposes.

3. Review the comment documents and identify each individual comment in the comment document. Enter all individual comments into a sortable spreadsheet.

4. Code each comment with an issue category based on the content of the comment. Issue categories are broad topics used to group comments expressing similar concerns.

5. Sort comments by issue category.

6. Summarize comments by issue category in a narrative form to describe the general questions and concerns associated with each category (**Section 3.4, Summary of Scoping Comments by Issue Category**).

7. Develop issue statements to identify questions, concerns, and opportunities to address during preparation of the Project EIS.

3.3 Public Scoping Comments by Issue Category

The BLM identified 609 individual public scoping comments from the 95 comment documents, and some comments were categorized as addressing more than one issue. **Table 4** identifies the issue categories used and the number of public scoping comments coded to each issue category. The largest issue category was the out-of-scope category. This category included a total of 117 comments that were expressions of support or opposition to the Project, editorial comments, and other comments not directly related to the analysis. For substantive comments, the issues most frequently addressed were water resources (79), followed by threatened and endangered species (52), socioeconomics and environmental justice (33), reclamation (30), project description (28), and NEPA analysis (27).

Table 4 Number of Comments by Issue Category

Issue Category	Number of Comments Per Issue Category	Percentage of Total Public Scoping Comments
Air Quality	17	3
Alternatives	14	2
Climate Change	6	1
Cultural Resources	7	1
Financial Assurances	6	1
Geochemistry	6	1
Geotechnical Design and Stability	12	2
Hazardous Materials and Waste	8	1
Land Use	3	<1
Laws and Regulations	26	4
Livestock Grazing	2	<1
Mitigation	16	3
Native American Concerns and Consultation	26	4
NEPA Analysis	27	4
Noise	2	<1
Out-of-Scope, Supportive of Project, Opposed to Project, Editorial	117	19
Project Description/Plan of Operations	28	5
Proposed Environmental Protection Measures (EPMs)	12	2
Public Involvement	10	2
Reclamation	30	5
Recreation	3	<1
Review Period	3	<1
Socioeconomics and Environmental Justice	33	5
Soil Resources	1	<1
Threatened and Endangered Species	52	9
Transportation and Access	16	3
Vegetation	15	2

Issue Category	Number of Comments Per Issue Category	Percentage of Total Public Scoping Comments
Visual Resources	4	1
Water Resources	79	13
Wetlands and Riparian Areas	2	<1
Wild Horses and Burros	1	<1
Wildlife and Special Status Species	25	4
Total	**609**	**100**

3.4 Summary of Public Scoping Comments by Issue Category

This section summarizes comments submitted during public scoping that are within the scope of the Project EIS. Comment summaries are grouped into issue categories based on the content and substance of the comment. **Appendix C** contains the text of all comments extracted from the comment documents as well as the issue category(s) assigned to each.

3.4.1 Issue Statements

The BLM public scoping process is intended to identify resource categories and capture issues for analysis related to the Project. Public scoping comments are reviewed by the BLM for substance, content, and relevance to the Project and EIS analysis. Each comment is assigned to a specific resource or area of concern and related issue statements are subsequently developed to summarize comments upon a specific resource or topic. In the following sections, each group of related comments are summarized in specific issue statements for each resource or topic. Some topics are summarized without issue statements. Those comments that the BLM has determined to be beyond the scope of the EIS analysis or non-substantive opinion-based statements are not included in the comment summaries or issue statements.

The BLM's interpretation and summarization of scoping comments does not constitute agreement or disagreement with the content of the scoping comments. The purpose of this report is to present the issues raised in the public scoping comments for consideration during the NEPA process. Additionally, because each comment was coded to only one issue category, but may express concerns related to multiple issues, the comment summaries below attempt to capture comments coded to each specific category as well as related comments that may have been coded to different categories.

Air Quality Comment Summary

The EIS should describe impacts to local and regional air quality from criteria pollutants and hazards air pollutants. Emission sources from the Project should include facilities and roads related to the mine's operations, including any off-site processing and support activities. Additionally, the EIS should estimate the releases and impacts of hazardous air emissions, greenhouse gases, and particulates and confirm compliance with the National Emission Standards for Hazardous Air Pollutants, National Ambient Air Quality Standards, Prevention of Significant Deterioration increments, the Federal Land Policy and Management Act (FLPMA), and state regulatory requirements. Consider including the social cost of greenhouse gases to aid in the disclosure of impacts. The EIS should discuss how the Project emissions and other elements interact with the goals of state, national, and international greenhouse gas emissions reduction goals. The EIS should disclose the design control, monitoring, and mitigation measures to reduce air pollutant emissions and airborne particles.

<u>Air Quality Issue Statements</u>

- How would air pollutants (including hazardous air pollutants and particulate matter) from on- and off-site Project operations impact air, soil, and water resources?
- How would emissions be controlled, evaluated, and mitigated?
- What would the Project's contribution be to carbon dioxide and other greenhouse gases?

- How would emissions and dust impact Tiehm's buckwheat?

Alternatives Comment Summary

Commenters suggested an alternative access route and relocation of several Project facilities. The EIS should analyze a broad range of reasonable alternatives for Project construction, operation, and closure and post-closure, including all interdependent parts of the Project, and compare environmental impacts of the alternatives. Comments indicate the EIS should discuss adaptive management planning approaches for each alternative. Alternatives should also be discussed in the context of BLM's authorities under FLPMA and the Mining Act of 1872 and should be identified to minimize impacts to resources. BLM should provide clear reason for elimination of alternatives not analyzed in detail.

Alternatives Issue Statements

- What are the environmental impacts of each alternative and why were some alternatives not evaluated in detail?

- What is the Environmentally Preferred Alternative and has BLM considered the No-Action Alternative?

Climate Change Comment Summary

Updated Council on Environmental Quality guidance from January 2023 should be used to analyze climate change effects. The EIS should address the reasonably foreseeable effects of climate change in the area and whether the Project may be affected by those changes. Comments indicate that the EIS should consider the interaction of impacts from the Project and those due to climate change and incorporate measures to address risks and make the Project more resilient to climate change effects.

Climate Change Issue Statements

- How would the Proposed Action and alternatives contribute to or be affected by climate change?

Cultural Resources Comment Summary

A survey of the Project area should be completed for historic properties and cultural sites. The EIS should analyze potential impacts to tribal, cultural, or other treaty resources as well as develop avoidance or mitigation plans for any affected historic properties or cultural resources. The BLM must identify and protect all cultural sites affected by the Project, in consultation with Native American tribes and in accordance with all federal laws.

Cultural Resources Issue Statements

- How would the Proposed Action and alternatives impact the cultural resource sites identified within the analysis area? How would impacts to these sites be avoided, or mitigated?

Financial Assurances Comment Summary

Sufficient financial assurance and bonding requirements to account for mine closure, reclamation, and post-closure monitoring should be calculated and described in the EIS and required under any Project approval. If a funding mechanism is deemed necessary, describe the details in the EIS.

Financial Assurances Issue Statements

- Is the financial assurance and bonding sufficient?

Geochemistry Comment Summary

Characterization of the unique geochemistry at the Project site should be described in the EIS in order to identify the Project's impacts and address them through facility design and mitigation measures. The justification of the site-specific criteria should be explained in the EIS. Discuss the mineralogy and acid generation/neutralization potential of materials in the Project area and the measures in place to neutralize

these materials on- or off-site and prevent further acid generation. The EIS should discuss current water quality at the site and the facility and design control measures implemented to prevent impacts to surface and groundwater quality. The EIS should include a plan to handle acid generation or a contingency plan in case predictions are off. The EIS should describe the static and humidity cell tests that have been conducted on ore and waste rock and provide the results for each test and include monitoring of chemistry of springs.

Geochemistry Issue Statements

- How would the Project impact surface water and groundwater quality from potentially acid generating (PAG) waste rock? How would these impacts be monitored for and mitigated?

Geotechnical Design and Stability Comment Summary

Explain the frequency and details of how quarry slopes would be monitored and repaired/reinforced during mining operations and any other activities to monitor and prevent direct and indirect effects to Tiehm's buckwheat. Regarding the plans for placing backfill to stabilize slopes at the end of mining, provide a sectional view of this fill, and a calculation of the slope stability Factor of Safety that would be achieved by this backfill. The EIS should include details on rainfall, earthquake, or any other natural disaster type of event and how these events, combined with quarry development and configuration may impact slope saturation and stability which may affect Tiehm's buckwheat plants and/or subpopulations. The EIS should provide factors of safety of the quarry slopes throughout mine development and closure. Why was a higher factor of safety not considered given that an endangered species and its designated critical habitat sit at the mines edge? Commenters recommend increasing the factor of safety to 2.0 during mining or providing additional details related to monitoring and correction that would occur. Commenters recommend a minimum factor of safety of 2.0 in the permanent conditions after mining.

Geotechnical Design and Stability Issue Statements

- Would the proposed quarry be stable? How would natural events affect the stability of the quarry?

Hazardous Materials and Waste Comment Summary

The EIS should analyze potential impacts from the Project during operation, closure, and post-closure. The EIS should also describe impacts from contamination of meteoric water, describe chemical characterization of water in open ponds, design of water collection systems, mitigation measures to prevent contamination of water and sediment, how accidental releases would be handled, and the mine's petroleum-contaminated soil management plan. Human, health, and safety should be considered.

Hazardous Materials and Waste Issue Statements

- What is the potential for contamination of surface water and groundwater?
- Which controls and containment systems would be in place to collect leaks, contain spills, and handle/store hazardous waste?
- How would accidental releases be handled?

Land Use Comment Summary

The EIS should consider the Esmeralda County Master Plan, FLPMA, and how the Project complies with applicable land use designations.

Land Use Issue Statement

- How does the Project comply with applicable land use designations, the local Master Plan, and FLPMA?

Laws and Regulations Comment Summary

Comments indicated the BLM needs to ensure the EIS complies with federal laws and regulations, including NEPA, FLPMA, Executive Orders, Mining Law, Clean Water Act; Endangered Species Act; Migratory Bird

Treaty Act; and state laws and regulations including Nevada Revised Statutes and Nevada Administrative Codes. The EIS should identify all permits and standards applicable to the Project.

No issue statements were developed to summarize these comments.

Livestock Grazing Comment Summary

The EIS should describe how the Project would impact livestock grazing and access to grazing allotments.

Livestock and Grazing Issue Statement

- How would the Project impact permitted Animal Unit Months and livestock access to grazing allotments?

Mitigation Comment Summary

The EIS should identify and describe appropriate mitigation measures to address adverse effects of the Proposed Action. The EIS should identify which mitigation measures would be committed by the proponent, and which are required by the BLM. In addition, the effectiveness, enforcement, and funding of each mitigation measure should be analyzed and disclosed in the EIS. For each impact area, describe specific mitigation implementation thresholds, implementation and effectiveness monitoring, and the criteria by which success would be determined once mitigation is fully implemented.

Mitigation Issue Statements

- What mitigation measures are necessary during operations, closure and post-closure, and which ones are the proponent, the BLM, or other agencies responsible for?
- What mitigation is required for surface water and groundwater quality?
- What mitigation is required to minimize impacts to wildlife including special status species?
- What mitigation measures are required to minimize criteria air pollutant emissions, impacts to special status species, Tiehm's buckwheat, archaeological sites, and traditional cultural properties from the Project?
- What are the BLM and State regulators reclamation bonding requirements and how are funds ensured for the completion of reclamation and closure activities?
- How is long-term monitoring and management enforced?

Native American Concerns and Consultation Comment Summary

The details of consultation, issues raised, and how those issues were addressed should be included in the EIS. The EIS should include impacts to Native American sacred and spiritual sites and traditional practices (including traditional food and medicine gathering) from the Project as well as cumulative impacts to these uses. The EIS should include any Memoranda of Availability appendices with sensitive information redacted. The EIS should consider impacts to treaty rights, cultural resources, archaeological sites, and traditional cultural properties.

Native American Concerns and Consultation Issue Statement

- How would the Proposed Action and alternatives affect important tribal sacred or religious sites, settings, or other important tribal values or resources?

NEPA Analysis Comment Summary

The EIS must analyze all applicable baseline information and consider potential effects from all proposed infrastructure and actions. The EIS should describe impacts that could occur later in time or at a distance from the Project and which would not occur without the Project, and the methods for identifying these

impacts. In analyzing impacts, frame the affected environment through the lens of meaningful impacts and natural boundaries, BLM should focus on resources of concern, and examine other current or reasonably foreseeable future projects in the study area. The EIS should analyze and disclose the potential for declining trends, or other projects, which could be exacerbated by the Project. The EIS should include all relevant information from other NEPA documents that are referenced, rather than referencing these documents and requiring the reader to find and read previously prepared documents for other projects in the area. Based on Department of the Interior Secretarial Order 3399, the BLM should not change the level of application or level of NEPA applied to a Proposed Action. Therefore, the EIS should also examine how the various impacts of this Project would add to the collective impacts of other ecosystem disturbing projects in the region.

NEPA Analysis Issue Statements

- How would cumulative effects be analyzed in the EIS?

Noise Comment Summary

The EIS should analyze the effects of noise and vibration on wildlife, springs, plants, and cultural resources. Several commentors recommended that noise be restricted during evening and nighttime hours.

Noise Issue Statement

- How would noise from the Project affect wildlife and other noise sensitive resources?

Non-substantive Comments Summary (Out-of-scope, Supportive of Project, Opposed to Project Comment Summary)

Approximately 117 comments were submitted related to issues such as general opinions for or against the Project, the importance of a domestic supply of lithium, and editorial comments. Comments were also received regarding the Project proponent's application to a U.S. Department of Energy loan program.

No issue statements were developed from these comments.

Project Description/Plan of Operations Comment Summary

Several comments were received regarding the proposed mining operations as described in the Plan, such as layout and design of Project facilities, mining in proximity to Tiehm's buckwheat, and descriptions of environmental protection measures for various resources.

No issue statements were developed to summarize these comments.

Proposed Environmental Protection Measures Comment Summary

Commenters suggested additional EPMs to be incorporated into the Project. The proposed EPMs addressed noxious weeds, recreation, reducing noise and light pollution, solution management, wildlife, migratory birds, raptors, eagles, Tiehm's buckwheat, and reclamation.

Proposed EPM Issue Statements

- Would proposed EPMs reduce Project-related impacts?
- Are the proposed EPMs feasible and why were some not incorporated into the Project?

Public Involvement Comment Summary

The BLM should continue working with agencies during the preparation of the EIS. Additional comments included timing of the public comment period, suggestions regarding the virtual public meetings including having attendees turn on cameras, providing attendance numbers, allowing attendees to mute/un-mute themselves allowing the public to speak freely, and allowing attendees to ask each other questions. A more transparent structure was suggested where all attendees and moderators could be seen, heard, and

understood. It was requested that all information used as part of the decision-making process be posted on a website that allows open access for all members of the public.

No issue statements were developed to summarize these comments.

Reclamation Comment Summary

A detailed account of measures that would be taken to decommission mine operations and stabilize and revegetate slopes, waste rock facilities, roads, and other areas of disturbance should be included in the EIS. In addition, the EIS should include information was regarding areas targeted for reclamation, and proposed treatment in each area including use of appropriate seed mixes based on ecological conditions and include the use of native species. Timing of reclamation, standards for determining reclamation success, growth media and covers, and means for assuring maintenance for reclaimed areas would continue after operations cease should also be included in the EIS. Suggestions were made to convert the pit lake to a recreational fishing area and, conversely, to backfill the quarry to prevent the formation of a pit lake.

Other comments requested that the reclamation plan address potential leaks in wastewater and other process containment systems, and potential flooding. Additional comments requested the amount and method of backfill and include how the waste rock may impact water resources post-closure.

Reclamation Issue Statement

- Is the reclamation plan sufficient?

Recreation Comment Summary

Commenters suggested that the EIS should describe how the Project would impact recreation and that educational and directional signage be posted to reduce conflicts between recreational users and Project traffic.

Recreation Issue Statement

- What impact would the Project have on recreation?

Review Period Comment Summary

Requests for extensions of the public scoping period to allow additional time for tribal and public input were submitted. If the Plan is changed substantially during the scoping period, it should be made available for an additional comment period.

No issue statements were developed to summarize these comments.

Socioeconomics and Environmental Justice Comment Summary

The EIS should include an analysis of economic and social effects upon the local communities and the capacity of existing infrastructure and emergency services to withstand the effects and demands resulting from the Project and anticipated new work force that would be required to staff the operation. The EIS should identify minority and low-income populations potentially disproportionally affected by the Proposed Action in the EIS and disclose any potential adverse effects. The USEPA's EJScreen tool could be used to aid the BLM in developing outreach for environmental justice communities.

Socioeconomics and Environmental Justice Issue Statements

- How would the Proposed Action and alternatives affect local and regional social and economic conditions through jobs, tax revenues, and local and regional spending?

- How would the Proposed Action and alternatives affect demand on local and regional resources and services (e.g., housing, roads, health care, law enforcement)?

- How would the Proposed Action and alternatives affect the quality of life and non-market values of local and regional populations?

- How would the Proposed Action and alternatives affect nearby environmental justice populations and local communities?

Soil Comment Summary

The EIS should describe the effects of the Project on soils.

Soil Issue Statement

- What impact would the Project have on soils?

Threatened and Endangered Species Comment Summary

The analysis in the EIS should include Project-related impacts to Tiehm's buckwheat and bi-state sage-grouse. Project reclamation should replace and maintain essential physical and biological features of Tiehm's buckwheat habitat. The analysis should describe effects to Tiehm's buckwheat pollinators from the Project including explosive use, noise, dust, equipment, etc. Consideration should be given to increased buffer sizes between Tiehm's buckwheat and Project operations.

Threatened and Endangered Species Issue Statements

- How would the Proposed Action and alternatives impact Tiehm's buckwheat?

- How would the Proposed Action and alternatives impact bi-state sage-grouse?

Transportation and Access Comment Summary

Consider an alternative access route from U.S. Highway 6 using State Route 733 instead of State Route 264. The analysis in the EIS should include Project-related impacts to county and public roads used for the Project. Impacts to public access should be addressed.

Transportation and Access Issue Statement

- How would the Proposed Action and alternatives impact existing highway infrastructure, local and regional traffic volumes, traffic patterns, and public access?

Vegetation Comment Summary

The EIS should consider the impacts to vegetation from loss of surface water features and the potential spread of noxious and invasive non-native plants, including agricultural fields in Fish Lake Valley that would be fallowed due to supply water to the Project. The EIS should disclose impacts to any rare or special status plants.

Vegetation Issue Statement

- How would the Proposed Action and alternatives affect vegetation and vegetation communities through direct removal and from loss of surface water resources?

- How would the Proposed Action and alternatives affect special status plant species?

Visual Resources Comment Summary

The EIS should include an analysis of impacts on visual resources in the area, including light pollution.

Visual Resources Issue Statements

- How would the Proposed Action and alternatives affect visual resources in the Project area?

Water Resources Comment Summary

Many comments focused on water resources and water-related impacts associated with the Project including potential effects on water quantity and quality for both surface water and groundwater. Specific comments included potential effects on aquifer levels in Fish Lake Valley from continual pumping of agricultural wells to the Project; effects from fallow agricultural fields as a result of groundwater use for the Project; need for compliance with all required permits including the Clean Water Act section 404; stormwater management designs, monitoring, and implementation, with a recommendation to consider extended periods of precipitation frequency/duration beyond the 100-year, 24-hour event; need for a robust water monitoring and mitigation plan during all phases of the Project including post-closure; potential risks related to Project contamination and ensuing water impacts; anticipated water use and effects on public and private water rights; potential effects on surface water flow, water supply wells, wetlands, seeps and springs, and other water-dependent ecosystems; and potential effects on local communities. Comments were also received regarding the groundwater modeling approach.

Water Resources Issue Statements

- How would the Proposed Action and alternatives affect groundwater in Fish Lake Valley?
- What baseline data, monitoring and mitigation measures, and protocols and procedures would be used for monitoring throughout all phases of the Project?
- How would current drainage patterns across the Project area change under each alternative?
- How would any water contaminated from PAG waste rock or spills be captured or treated?
- How would the Project impact water-dependent wildlife, ecosystems, and local communities?

Wetlands and Riparian Areas Comment Summary

The EIS should analyze the potential impacts to surface waters and groundwater dependent ecosystems including riparian areas and springs. The EIS should consider the Project's compliance with the recently updated definition of Waters of the United States.

Wetland and Riparian Areas Issue Statements

- How would the Proposed Action and alternatives affect wetlands, drainages, and riparian areas?

Wild Horses and Burros Comment Summary

A commentor expressed concern that the Project would limit wild horse access to water and movement through the Project.

Wild Horses and Burros Issue Statement

- How would the Proposed Action and alternatives affect wild horses and burros?

Wildlife and Special Status Species Comment Summary

Several comments focused on wildlife-related impacts from the Project included concerns on effects to mule deer, antelope, bighorn sheep and their habitats; golden eagles and raptors and their habitat; migratory birds and their habitat; small mammals and their habitat; reptiles and their habitat; and aquatic species and their habitat. Comments also suggested the development of a Bird and Bat Conservation Strategy to reduce impacts.

Wildlife and Special Status Species Issue Statements

- How would the Proposed Action and alternatives affect raptors, including golden eagles?
- How would the Proposed Action and alternatives affect big game use in and movement through the Project vicinity?

- How would the Proposed Action and alternatives affect the availability and quality of habitat for terrestrial game and non-game species?
- How would impacts to surface water features impact terrestrial and aquatic wildlife?

4.0 Next Steps in the Process

The BLM will consider the comments submitted during public scoping and the issues identified in this public scoping report when preparing the EIS and developing alternatives to the Proposed Action. Alternatives will be developed in consultation with participating cooperating agencies and other stakeholders. A final list of issue statements that will be brought forward for analysis in the draft EIS will be compiled from the issues identified through public scoping, issues raised during ongoing consultation with cooperating agencies and stakeholders, and issues identified through internal scoping among the BLM interdisciplinary team.

A Notice of Availability will be published in the Federal Register announcing availability of the draft EIS for public review and comment. During the 45-day public comment period for the draft EIS, the BLM will hold public meetings, which will be announced through a press release, on the ePlanning website, and through mailings to contacts on the Project mailing list. The BLM will respond to all substantive written comments submitted during the public comment period for the draft EIS, then prepare the final EIS. A Notice of Availability for the final EIS will be published in the Federal Register announcing its public release.

The BLM will prepare a Record of Decision to document the selected alternative and identify any accompanying mitigation measures. The BLM will issue the Record of Decision no sooner than 30 days after the Notice of Availability for the final EIS is published in the Federal Register.

APPENDIX A

Public Scoping Notifications

Notice of Intent

information, including the validity of the methodology and assumptions used;

(3) Ways to enhance the quality, utility, and clarity of the information to be collected; and

(4) How the agency might minimize the burden of the collection of information on those who are to respond, including the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, *e.g.,* permitting electronic submission of response.

Comments that you submit in response to this notice are a matter of public record. We will include or summarize each comment in our request to OMB to approve this ICR. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Abstract: The BLM Oregon State Office has authority under the Oregon and California Revested Lands Sustained Yield Management Act of 1937 (43 U.S.C. 2601 and 2602) and subchapter V of the Federal Land Policy and Management Act (43 U.S.C. 1761–1771) to grant rights-of-way to private landowners to transport their timber over roads controlled by the BLM. This information collection enables the BLM to calculate and collect appropriate fees for this use of public lands. This OMB Control Number is currently scheduled to expire on August 31, 2023. The BLM plans to request that OMB renew this OMB Control Number for an additional three years.

Title of Collection: Tramroads and Logging Roads (43 CFR part 2810).

OMB Control Number: 1004–0168.

Form Numbers: OR–2812–6.

Type of Review: Extension of a currently approved collection.

Respondents/Affected Public: Private landowners who hold rights-of-way for the use of BLM-controlled roads in western Oregon.

Total Estimated Number of Annual Respondents: 1,088.

Total Estimated Number of Annual Responses: 1,088.

Estimated Completion Time per Response: 8 hours.

Total Estimated Number of Annual Burden Hours: 8,704.

Respondent's Obligation: Required to obtain or retain a benefit.

Frequency of Collection: Annually, biannually, quarterly, or monthly, depending on the terms of the pertinent right-of-way.

Total Estimated Annual Nonhour Burden Cost: None.

An agency may not conduct or sponsor and, notwithstanding any other provision of law, a person is not required to respond to a collection of information unless it displays a currently valid OMB Control Number.

The authority for this action is the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).

Darrin A. King,

Information Collection Clearance Officer.

[FR Doc. 2022–27562 Filed 12–19–22; 8:45 am]

BILLING CODE 4310–84–P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[LLNVB02000.L19900000.EX0000.23X; MO: 4500167767]

Notice of Intent To Prepare an Environmental Impact Statement for Ioneer Rhyolite Ridge LLC's Proposed Rhyolite Ridge Lithium-Boron Mine Project, Esmeralda County, NV

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of intent.

SUMMARY: In compliance with the National Environmental Policy Act of 1969, as amended (NEPA), and the Federal Land Policy and Management Act of 1976 (FLPMA), as amended, the Bureau of Land Management (BLM) Tonopah Field Office, Tonopah, Nevada, intends to prepare an Environmental Impact Statement (EIS) to analyze the potential environmental impacts of authorizing the proposed Ioneer Rhyolite Ridge LLC (Ioneer) Rhyolite Ridge Lithium-Boron Project (Project) in Esmeralda County, Nevada. This notice announces the beginning of the scoping process to solicit public comments and identify issues and alternatives; it also serves to initiate public consultation, as required, under the National Historic Preservation Act (NHPA).

DATES: This notice initiates the public scoping process for the EIS, which will run through January 19, 2023. Scoping comments may be submitted in writing until January 19, 2023. The date(s) and location(s) of the scoping meetings will be announced at least 15 days in advance through local media and newspapers and on the BLM website at: *https://www.blm.gov/office/tonopah-field-office* and the Project's ePlanning website at *https://eplanning.blm.gov/eplanning-ui/project/2012309/510.* In order to be considered during the preparation of the Draft EIS, all scoping comments must be received prior to the close of the 30-day scoping period or 15 days after the last public meeting, whichever is later. The BLM will provide additional opportunities for public participation upon publication of the Draft EIS.

ADDRESSES: You may submit scoping comments related to the proposed Rhyolite Ridge Lithium-Boron Mine Project by any of the following methods:

- *Website: https://eplanning.blm.gov/eplanning-ui/project/2012309/510.*
- *Email: BLM_NV_BMDO_TFO_NONRENEWABLE@blm.gov.*
- *Fax:* (775) 635–4034.
- *Mail:* BLM Battle Mountain District Office, Attn: Rhyolite Ridge Project, 50 Bastian Road, Battle Mountain, NV 89820.

Documents pertinent to this proposal may be examined at the Battle Mountain District Office and the Tonopah Field Office during regular business hours.

FOR FURTHER INFORMATION CONTACT: Scott Distel, Project Manager, telephone: (775) 635–4093; address: 50 Bastian Road, Battle Mountain, Nevada, 89820; email: *sdistel@blm.gov.* Contact Mr. Distel if you wish to add your name to our mailing list.

Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

SUPPLEMENTARY INFORMATION: The BLM's purpose for the action is to consider Ioneer's proposed Plan of Operations and to analyze the potential environmental effects associated with the Proposed Action as described in the Plan of Operations, as well as feasible alternatives to the Proposed Action. The BLM's need to consider the action is established by the BLM's responsibilities under section 302 of the FLPMA, 43 U.S.C. 1732, and the BLM Surface Management Regulations at 43 CFR part 3809. The BLM needs to make sure that the operations under the General Mining Law of 1872 will not cause unnecessary or undue degradation of the public lands. 43 U.S.C. 1732(b).

Based on the Proposed Action, Ioneer is proposing to construct, operate, close, and reclaim a new lithium-boron mine in the Silver Peak Range in Esmeralda

County, Nevada, approximately 40 air miles southwest of Tonopah, Nevada, and 13 air miles northeast of Dyer, Nevada. The Project Area encompasses approximately 7,166 acres. The proposed Project facilities associated with the Proposed Action are expected to disturb approximately 2,296 acres within the 7,166 Project Area, of which 2,272 acres are on public lands managed by the Tonopah Field Office and 24 acres are on private land. The Project Area includes an Operational Area and an Access Road and Infrastructure Corridor. If authorized, the mine would operate 24 hours per day, 365 days per year for approximately 17 years. The work force would be approximately 500 persons for construction and 350 persons for operation. The Proposed Action anticipates that reclamation activities at the end of mining will take approximately six years, with monitoring continuing beyond the 6 years as needed.

The purpose of the public scoping process is to identify relevant issues that will influence the scope of the environmental analysis, including alternatives, and guide the process for developing the EIS. During the public scoping period, the public is requested to identify any potential alternatives to the Proposed Action and provide any information or recommended analyses relevant to the Proposed Action and potential Project alternatives.

The BLM will use and coordinate the NEPA scoping process to help fulfill the public involvement process under the NHPA (54 U.S.C. 306108), as provided in 36 CFR 800.2(d)(3). The information about historic and cultural resources within the area potentially affected by the proposed Project will assist the BLM in identifying and evaluating impacts to such resources in the context of both the NEPA and the NHPA.

The BLM has and will continue to consult with Native American Tribes on a government-to-government basis in accordance with Executive Order 13175 and other policies. Tribal concerns, including impacts on Indian trust assets and potential impacts to cultural resources, will be given due consideration.

Federal, State, and local agencies, along with Tribes and stakeholders who may be interested in or affected by the proposed Project that the BLM is evaluating, are invited to participate in the scoping process and, if eligible, may request or be asked by the BLM to participate in the development of the EIS as a cooperating agency.

Following the completion of the public scoping process and subsequent analyses, the BLM will produce a Draft EIS. The Draft EIS will be made available for a 45-day public review and comment period and is anticipated to be completed by June of 2023 and will include public meetings to discuss the Draft EIS.

Following public input on the Draft EIS, the information received will be incorporated into a Final EIS, which is anticipated to be released for a 30-day public review period in December 2023. The BLM anticipates issuing a decision on this Project in January of 2024.

(Authority: 40 CFR 1501.9.)

Perry B. Wickham,

Field Manager, Tonopah Field Office, Battle Mountain District.

[FR Doc. 2022–27411 Filed 12–19–22; 8:45 am]

BILLING CODE 4310–HC–P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[BLM_ID_FRN_MO4500167688]

Notice of Public Meetings of the Idaho Resource Advisory Council and the Lava Ridge Wind Project Subcommittee

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of meetings.

SUMMARY: In accordance with the Federal Land Policy and Management Act of 1976 and the Federal Advisory Committee Act of 1972, the U.S. Department of the Interior, Bureau of Land Management's (BLM) Idaho Resource Advisory Council (RAC) and the Lava Ridge Wind Project Subcommittee (Subcommittee) will meet as follows.

DATES: The Subcommittee will host a meeting on Wednesday, Jan. 25, 2023, from 10 a.m. to 12 noon with public comments accepted at 11:15 a.m. Mountain Standard Time (MST). The Subcommittee will also host a meeting on Wednesday, Feb. 8, 2023, from 9 a.m. to 4:45 p.m., with public comments accepted at 2:30 p.m. MST.

The Idaho RAC will host a meeting on Thursday, March 9, 2023, from 9 a.m. to 5 p.m., with public comments accepted at 3 p.m. MST. The Idaho RAC will also host an in-person field tour on Wednesday, May 31, 2023, from 9 a.m. to 4 p.m. Mountain Daylight Time (MDT). The Idaho RAC will then host a meeting on June 1, 2023, from 9 a.m. to 5 p.m., with public comments accepted at 3 p.m. MDT. Public notice of any changes to this schedule will be posted on the Idaho RAC or the Subcommittee web pages (see **ADDRESSES**) 15 days in advance of each of the respective meetings.

ADDRESSES: The Subcommittee and Idaho RAC meetings in January, February, and March will take place at the BLM Twin Falls District Office, 2878 Addison Ave. E, Twin Falls, ID 83301. The Idaho RAC in-person field tour in May will commence at the BLM Boise District Office, 3948 S Development Ave., Boise, ID 83705 with the June meeting to be held at the BLM Idaho State Office, 1387 S Vinnell Way, Boise, ID 83709. A virtual participation option will be offered on the Zoom platform for the January and February Subcommittee meetings and registration information will be available on the Subcommittee's web page 30 days in advance of the meeting at *https://www.blm.gov/get-involved/resource-advisory-council/near-you/idaho/lava-ridge-subcommittee.* Virtual participation options will also be offered on the Zoom platform for the March 9 and June 1 RAC meetings and registration information will be available on the RAC's web page 30 days in advance of the meeting at *https://www.blm.gov/get-involved/resource-advisory-council/near-you/idaho.*

FOR FURTHER INFORMATION CONTACT: Idaho RAC Coordinator MJ Byrne, telephone: (208) 373–4006, email: *mbyrne@blm.gov.* Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

SUPPLEMENTARY INFORMATION: The Idaho RAC serves in an advisory capacity to BLM officials concerning issues relating to land use planning and management of public land resources located within the State of Idaho. The Idaho RAC is chartered and the 15 members are appointed by the Secretary of the Interior. Their diverse perspectives are represented in commodity, non-commodity, and local interests. The Idaho RAC's Lava Ridge Wind Project Subcommittee's purpose is to compile information, conduct research, and report their findings to the full RAC for consideration and formation of recommendations. The BLM Shoshone Field Office is currently developing an environmental impact statement to analyze the Lava Ridge Wind Project, a commercial-scale wind energy facility that is proposed to be constructed on

Rhyolite Ridge Lithium-Boron Project Public Scoping Meetings News Release

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BUREAU OF LAND MANAGEMENT BEGINS REVIEW OF RHYOLITE RIDGE LITHIUM-BORON MINE

Public meetings will inform project review

TONOPAH, Nev. – Today, the Bureau of Land Management announced it will commence review of the proposed Rhyolite Ridge Lithium-Boron Mine Project. Lithium is one of the elements on the U.S. Geological Survey's 2022 list of critical minerals and an important component of batteries for electric vehicles and personal electronics.

The proposed project by Ioneer Rhyolite Ridge LLC would be located within the Silver Peak Range in Esmerelda County, Nevada, approximately 40 miles southwest of Tonopah and 14 miles northeast of Dyer. The BLM will review the proposed construction, operation, reclamation, and closure of a surface quarry and associated facilities to mine lithium and boron.

"The Bureau of Land Management welcomes input on this proposed project. We are committed to transparent engagement in this review process and will utilize the public comments received to inform development of the Environmental Impact Statement," said **Perry Wickham, Tonopah Field Manager**.

Rhyolite Ridge is one of the only two known global deposits of lithium-boron. It is also the location of the only known population of the Tiehm's buckwheat plant, which was last week determined to be endangered by the U.S. Fish and Wildlife Service.

The purpose of the scoping process is to solicit public input on the proposed project including issues to be addressed and alternatives to be evaluated. The scoping meetings will provide an overview of the proposed project and the BLM's environmental review process and provide information on how members of the public can submit formal scoping comments.

Two public scoping meetings will be held online at 2:00 PM Pacific Standard Time (PST) January 4, and 5:00 PM PST January 5, 2023. Information and links to register for the meetings can be found on the project's website at https://eplanning.blm.gov/eplanning-ui/project/2012309/510.

No formal comments will be accepted during the online meetings, but public comments are being accepted via the website, email, and regular mail. All scoping comments must be received prior to the close of the 30-day scoping period or 15 days after the last public meeting, whichever is later, and should reference Rhyolite Ridge Mine in the subject line.

Formal comments may be submitted in the following ways:

- Online via the ePlanning website, https://eplanning.blm.gov/eplanning-ui/project/2012309/510 via the Participate Now tab.
- By regular mail to: Scott Distel, BLM Project Manager, 50 Bastian Road, Battle Mountain, NV 89820.
- Email to BLM_NV_BMDO_TFO_NONRENEWABLE@blm.gov.

For more information, contact Scott Distel, Project Manager, at 775-635-4093. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 7-1-1 (TYY, TDD, or TeleBraille) to access telecommunication relay services.

The BLM manages more than 245 million acres of public land located primarily in 12 western states, including Alaska, on behalf of the American people. The BLM also administers 700 million acres of sub-surface mineral estate throughout the nation. Our mission is to sustain the health, diversity, and productivity of America's public lands for the use and enjoyment of present and future generations.

MORE PRESS RELEASES

RELEASE DATE

Monday, December 19, 2022

ORGANIZATION

Bureau of Land Management

OFFICE

Tonopah Field Office

CONTACTS

Name: Perry Wickham

Name: Perry Wickham
Email: pwickham@blm.gov
Phone: 775-482-7801

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BUREAU OF LAND MANAGEMENT EXTENDS PUBLIC SCOPING PERIOD FOR RHYOLITE RIDGE LITHIUM-BORON MINE PROJECT

TONOPAH, Nev. – The Bureau of Land Management, Battle Mountain District, Tonopah Field Office will extend the public scoping period for the proposed Rhyolite Ridge Lithium-Boron Project by two weeks. The new deadline for submitting formal scoping comments is Feb. 3, 2023.

The proposed Rhyolite Ridge Project by Ioneer Rhyolite Ridge LLC would be located within the Silver Peak Range approximately 40 miles southwest of Tonopah, Nev., and 13 miles northeast of Dyer in Esmeralda County, Nev. The proposed project includes construction, operation, reclamation, and closure of a surface quarry using conventional surface mining techniques and associated facilities to mine lithium and boron. The project would employ up to 500 workers during construction and up to 350 workers during operations.

The Bureau of Land Management is holding one more public scoping meeting on Jan. 5, 2023, at 5 p.m. PST. Attendees must register in advance. If you have already registered, you do not need to re-register. Information on registering for the meetings can be found at https://eplanning.blm.gov/eplanning-ui/project/2012309/510.

The purpose of the scoping process is to solicit public comments and identify issues and alternatives, as well as to initiate public consultation, as required, under the National Historic Preservation Act. The scoping meetings will provide an overview of the proposed project, the environmental review process and provide information on how members of the public can submit formal scoping comments.

No formal comments will be accepted during the online meetings, but public comments are being accepted via the website, email, and regular mail. All scoping comments must be received prior to the close of the scoping period or 15 days after the last public meeting, whichever is later, and should reference Rhyolite Ridge Mine in the subject line.

Formal comments may be submitted in the following ways:

- Online via the ePlanning website, https://eplanning.blm.gov/eplanning-ui/project/2012309/510 via the Participate Now tab.
- By regular mail to: Scott Distel, BLM Project Manager, 50 Bastian Road, Battle Mountain, NV 89820.
- Email to BLM_NV_BMDO_TFO_NONRENEWABLE@blm.gov.

For more information, contact Scott Distel, Project Manager, at 775-635-4093. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 7-1-1 (TYY, TDD, or TeleBraille) to access telecommunication relay services.

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MORE PRESS RELEASES

RELEASE DATE

Wednesday, January 4, 2023

ORGANIZATION

Bureau of Land Management

OFFICE

Battle Mountain District Office

CONTACTS

Name: Prudence Crampton
Email: pcrampton@blm.gov
Phone: (775) 635-4011

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

BUREAU OF LAND MANAGEMENT EXTENDS PUBLIC SCOPING PERIOD FOR RHYOLITE RIDGE LITHIUM-BORON MINE PROJECT

TONOPAH, Nev. — The 30-day public scoping period for the proposed Rhyolite Ridge Lithium-Boron project began on December 20, 2022 and extended through January 20, 2023. Prior to the close of the scoping period, the BLM received a request for extension from a cooperating agency and a consulting Tribe on the project. In response, the BLM granted an extension accepting comments through February 3, 2023. Prior to the close of the extended scoping period, the BLM received requests for an additional extension from a cooperating agency and from a consulting Tribe. The BLM is granting the additional extension and the public scoping period will now conclude on March 6, 2023.

"After carefully considering the requests received from agencies and Native American Tribes and in the spirit of collaboration, I have made the decision to grant the additional 30-day extension of the public scoping period for this proposed project," said Doug Furtado, Battle Mountain District Manager.

The proposed Rhyolite Ridge project by Ioneer Rhyolite Ridge LLC would be located within the Silver Peak Range approximately 40 miles southwest of Tonopah, Nevada, and 13 miles northeast of Dyer in Esmeralda County, Nevada. The proposed project includes construction, operation, reclamation, and closure of a surface quarry using conventional surface mining techniques and associated facilities to mine lithium and boron. The project would employ up to 500 workers during construction and up to 350 workers during operations.

Formal comments may be submitted in the following ways:

- On-line via the ePlanning website, https://eplanning.blm.gov/eplanning-ui/project/2012309/510 via the Participate Now tab.
- By regular mail to Scott Distel, BLM Project Manager,50 Bastian Road, Battle Mountain, NV 89820.
- Email to BLM_NV_BMDO_TFO_NONRENEWABLE@blm.gov.
- Fax via (775) 635-4034.

For more information, contact Scott Distel, ProjectManager, at 775-635-4093. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 7-1-1 (TTY, TDD, or TeleBraille) to access telecommunications relay services.

The BLM manages more than 245 million acres of public land located primarily in 12 western states, including Alaska, on behalf of the American people. The BLM also administers 700 million acres of sub-surface mineral estate throughout the nation. Our mission is to sustain the health, diversity, and productivity of America's public lands for the use and enjoyment of present and future generations.

MORE PRESS RELEASES

RELEASE DATE

Monday, February 6, 2023

ORGANIZATION

Bureau of Land Management

CONTACTS

Name: Prudence Crampton
Email: pcrampton@blm.gov
Phone: 775-635-4011

APPENDIX B

Public Scoping Meeting Presentation

Bureau of Land Management
Battle Mountain District Office
Tonopah Field Office

Welcome to the Rhyolite Ridge Lithium-Boron Project Public Scoping Meeting

The Public Scoping Meeting Will Start Soon….

Bureau of Land Management
Battle Mountain District Office
Tonopah Field Office

Rhyolite Ridge Lithium-Boron Project

Environmental Impact Statement Scoping Meeting

Public Meetings

January 4, 2023 – 2:00 to 3:00 pm

January 5, 2023 – 5:00 to 6:00 pm

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

Zoom Basics

- All participants will be muted during the presentation.
- After the presentation there will be a question and answer period. You will be able to verbally ask questions or use the question and answer box.
- Information on how to ask questions will be provided at the start of the question and answer session.
- We will not be accepting official scoping comments through this platform. The ways to provide scoping comments will be provided throughout the meeting.

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

Meeting Ground Rules

1. Focus questions on the project to further your understanding of the proposed action.
2. Be respectful of panelist and other attendees; let others ask their questions.
3. Do not use inappropriate language.
4. Create a safe environment for all attending; breaking any rules will result in removal from the virtual meeting.

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

Meeting Agenda

I. Welcome and Logistics
II. BLM Presentation
    I. Meeting Purpose and Goals
    II. NEPA/EIS Process Overview
    III. EIS Team Introductions
III. Proponent Presentation of Proposed Rhyolite Ridge Lithium-Boron Project
IV. Baseline Studies
V. Review How to submit Scoping Comments
VI. Question and Answer Session

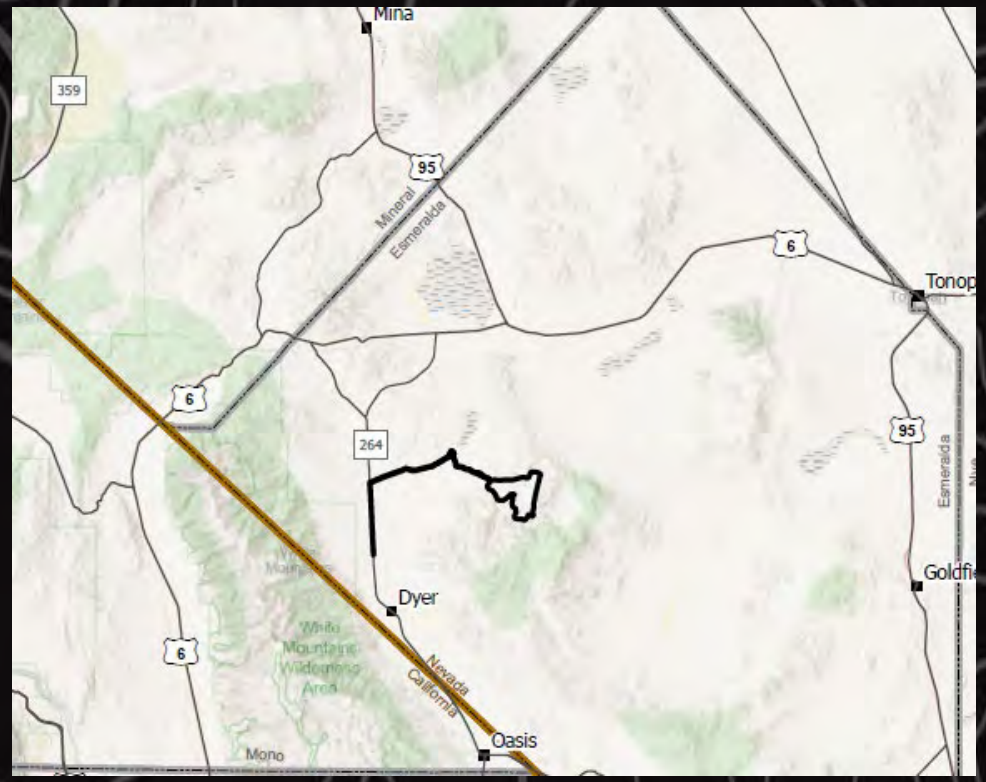
U.S. Department of the Interior
Bureau of Land Management

EIS and Project Team

Name	Role
Bureau of Land Management	
Scott Distel	Project Lead
Perry Wickham	Tonopah Field Manager
Third Party Consultant	
Diana Eck	Project Manager
Charli Sperry	Assistant Project Manager
Ioneer	
Bernard Rowe	Ioneer
Matt Weaver	Ioneer
Rebecca Sawyer	Ioneer
Richard Delong	WestLand
David Cerasale	WestLand

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

Project Location and Background



- Proposed project located in southwestern Nevada in Esmeralda County, Nevada approximately 13 air miles northeast of Dyer, NV
- Revised Plan of Operations Deemed Complete in August 2022 Triggering NEPA Analysis
- Level of NEPA Analysis Determined by BLM to be EIS

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

NEPA Process

Proponent Submits the Rhyolite Ridge Lithium-Boron Project Revised Plan of Operations to BLM and it's Deemed Complete in August 2022

Federal Register Notice of Intent to Prepare EIS (12/20/2022)

WE ARE HERE

Public Scoping Period & Scoping Meetings 12/20/2022-2/3/2023 & 1/4/2023 and 1/5/2023

Prepare Project Description and Identify Project Alternatives

Describe Affected Environment, Analyze Impacts, and Identify Mitigation

Prepare Draft EIS

Federal Register Notice of Availability of Draft EIS

45-Day Public Review and Comment Period with Public Meetings

Respond to Public Comments and Prepare Final EIS

Federal Register Notice of Availability of Final EIS

30-Day Review Period

Issue Record of Decision

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

Participating Agencies

Lead Agency

- Bureau of Land Management
  - Battle Mountain District Office, Tonopah Field Office

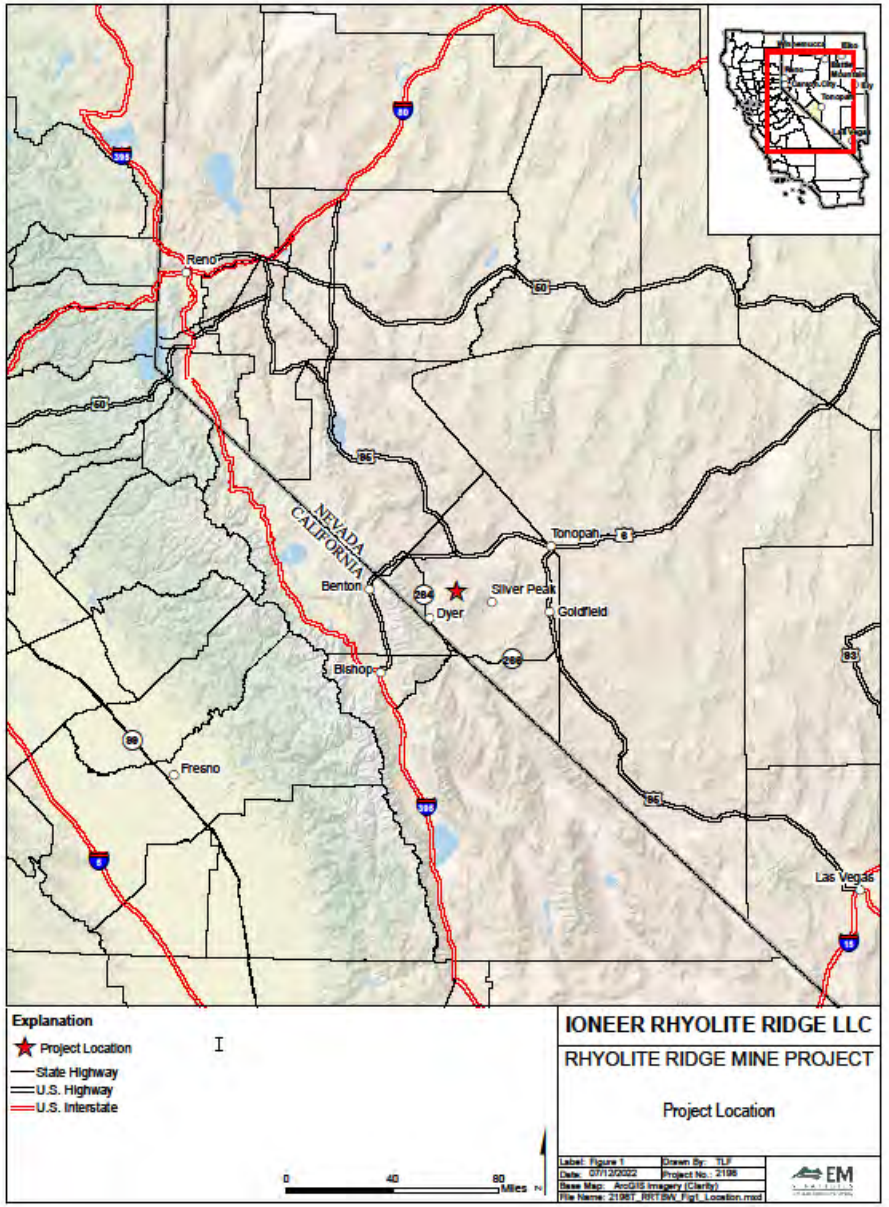
Agencies Invited to Cooperate:

- United States Department of Energy
- United States Environmental Protection Agency
- United States Fish and Wildlife Service Ecological Branch
- United States Fish and Wildlife Service Migratory Bird Program
- Nevada Department of Wildlife
- Nevada Division of Forestry
- Esmeralda County
- Nye County

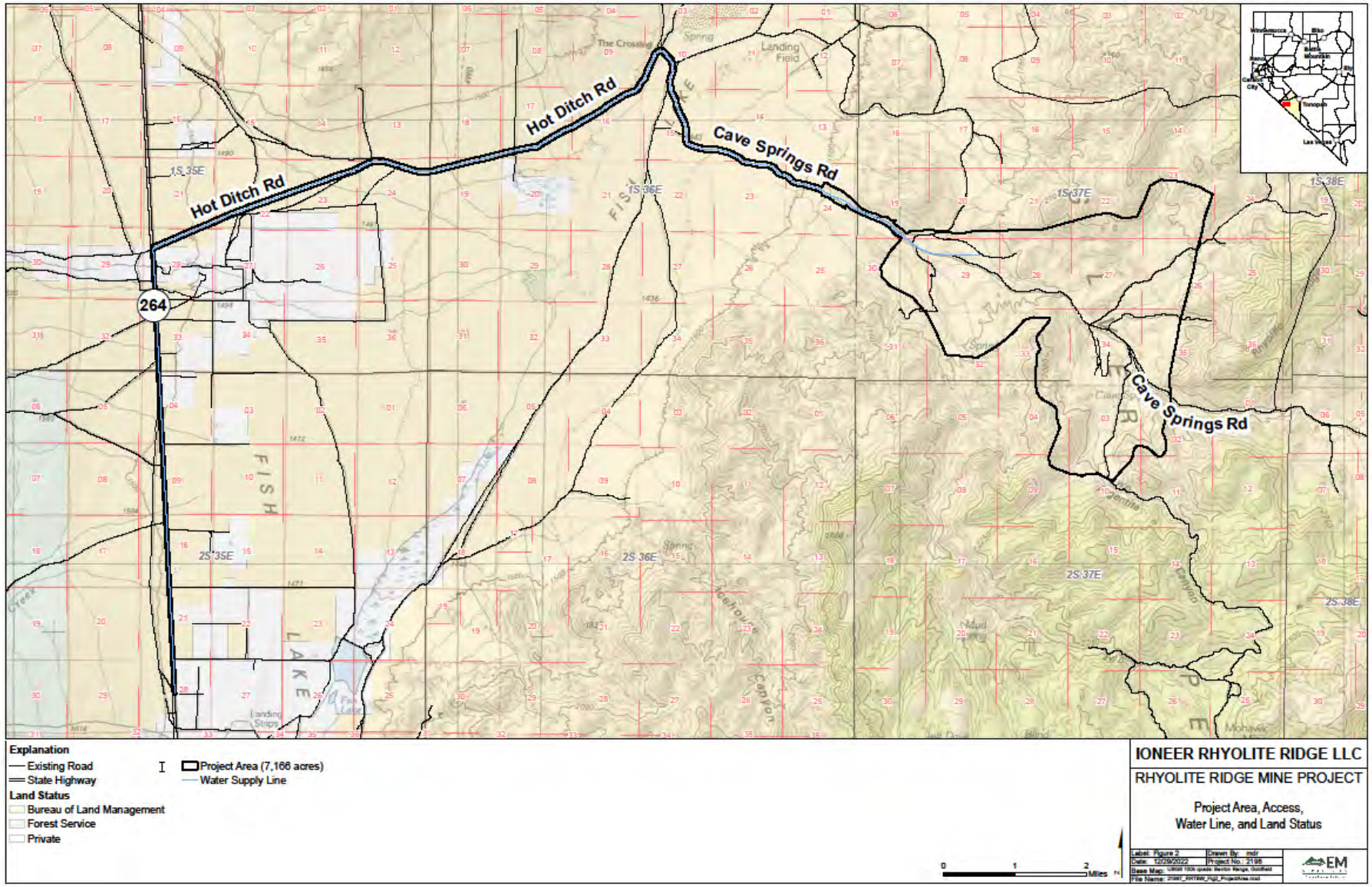
RHYOLITE RIDGE LITHIUM-BORON MINE

Esmeralda County, Nevada

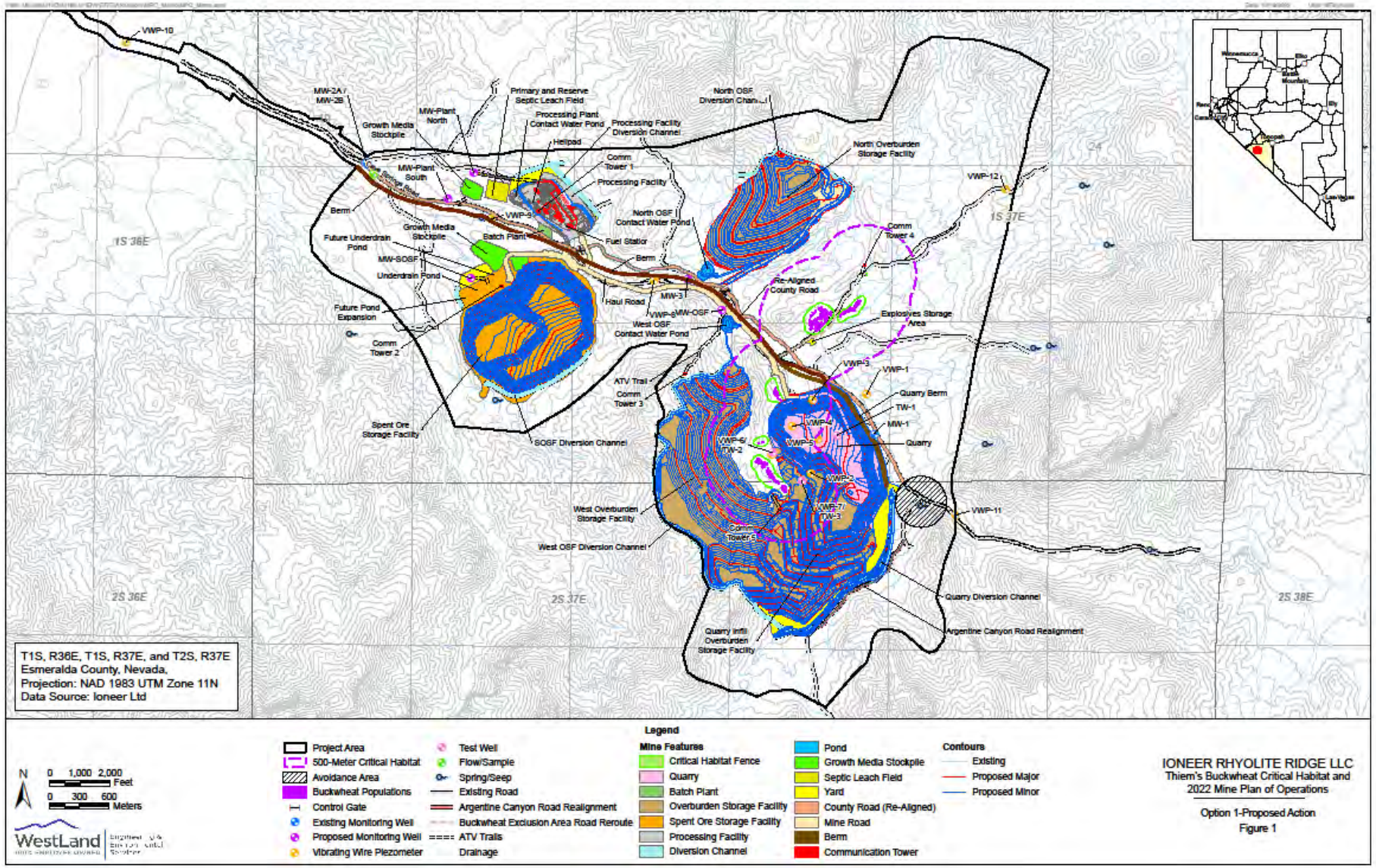
Fish Lake Valley



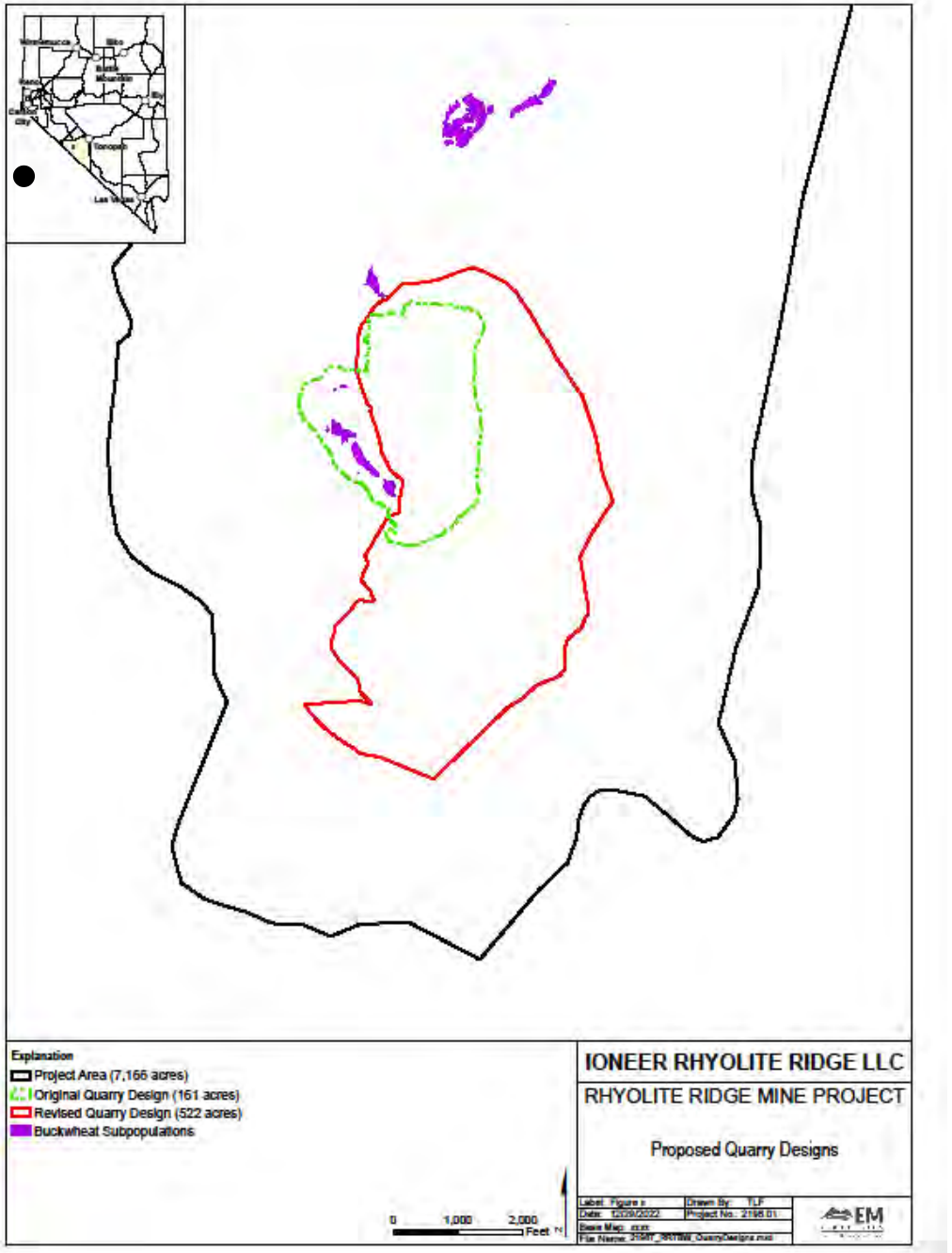
Project Area



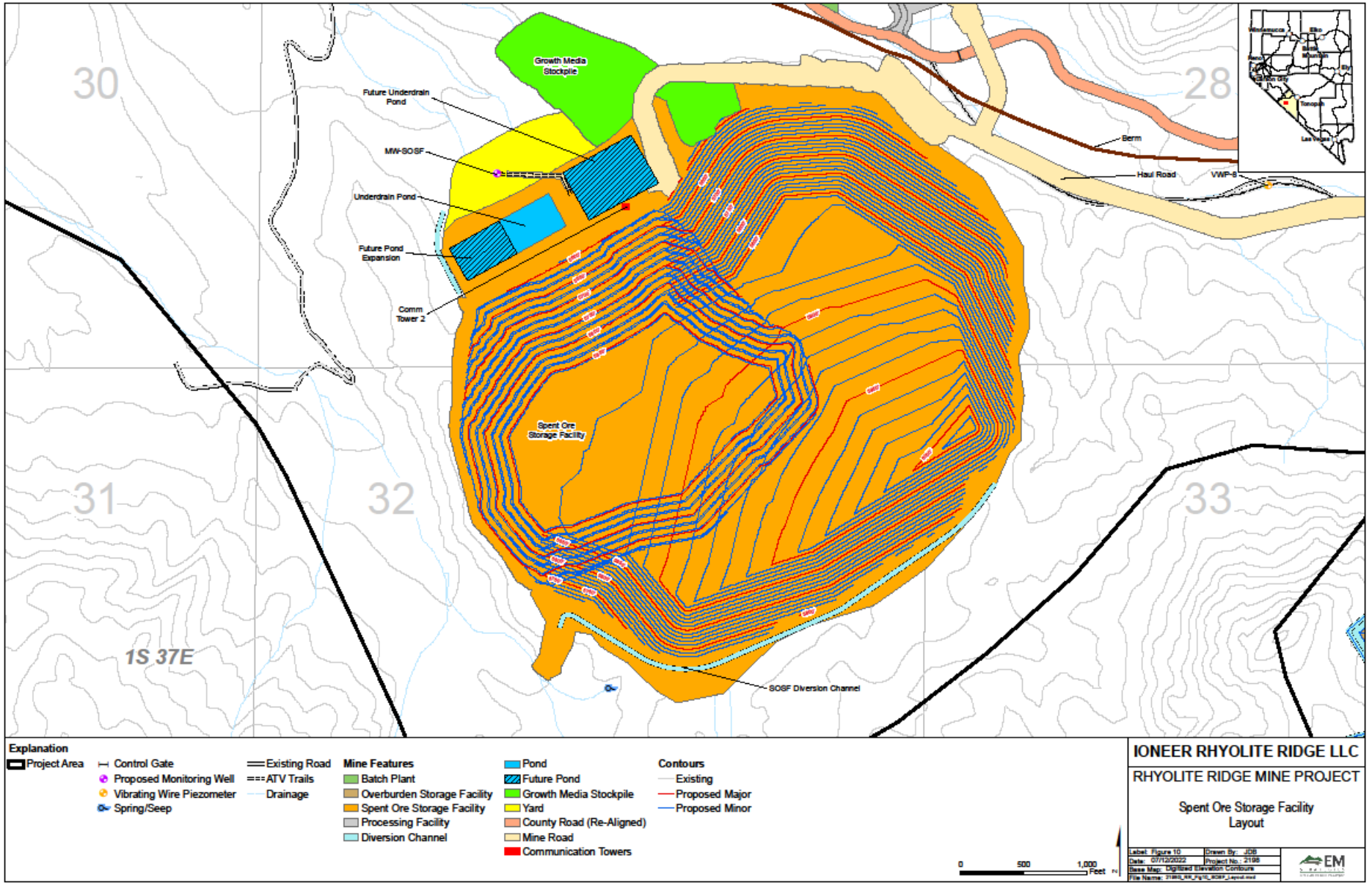
Operational Area



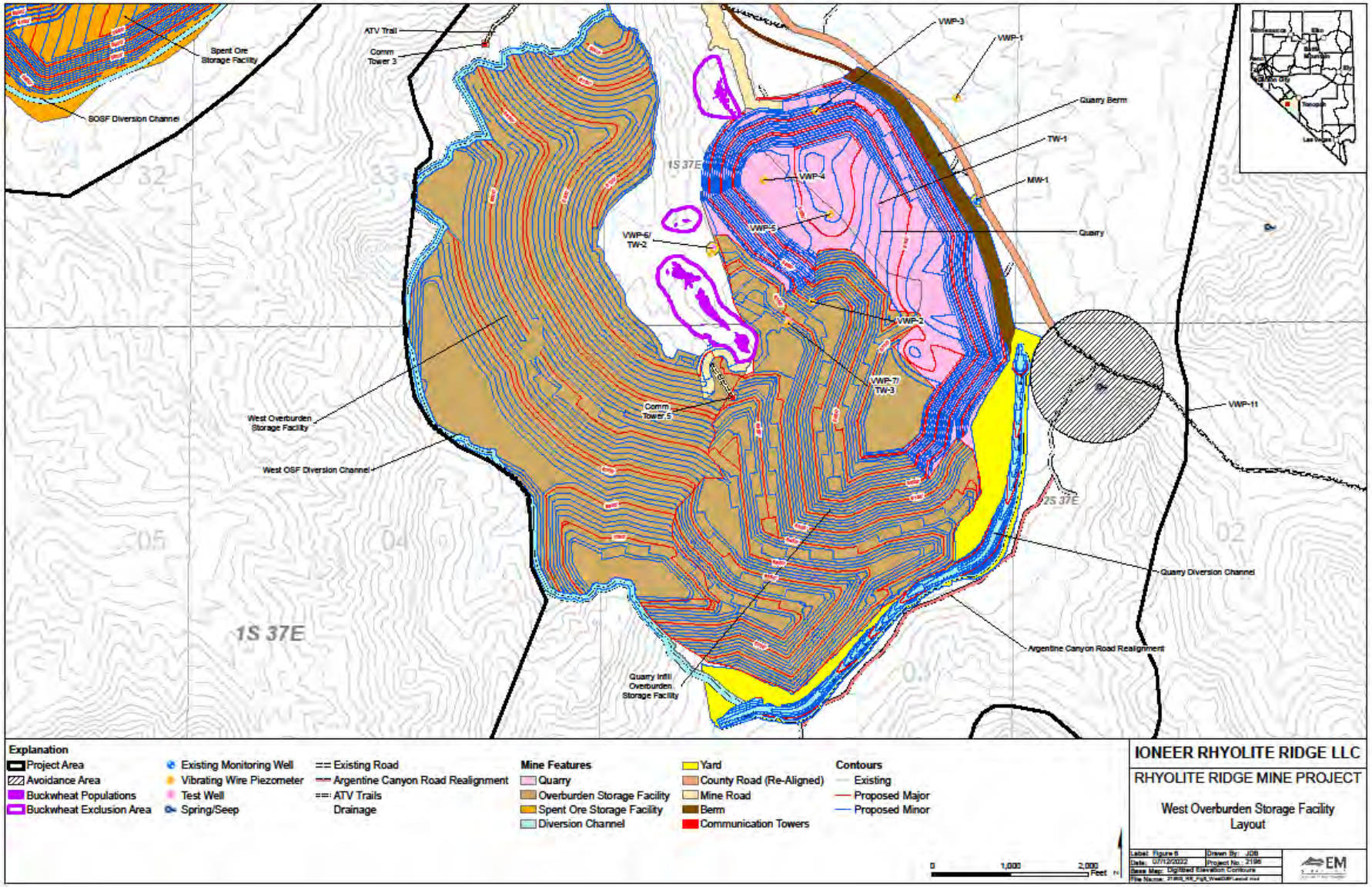
Original Quarry Outline Versus Current Quarry Outline, with buckwheat populations in purple



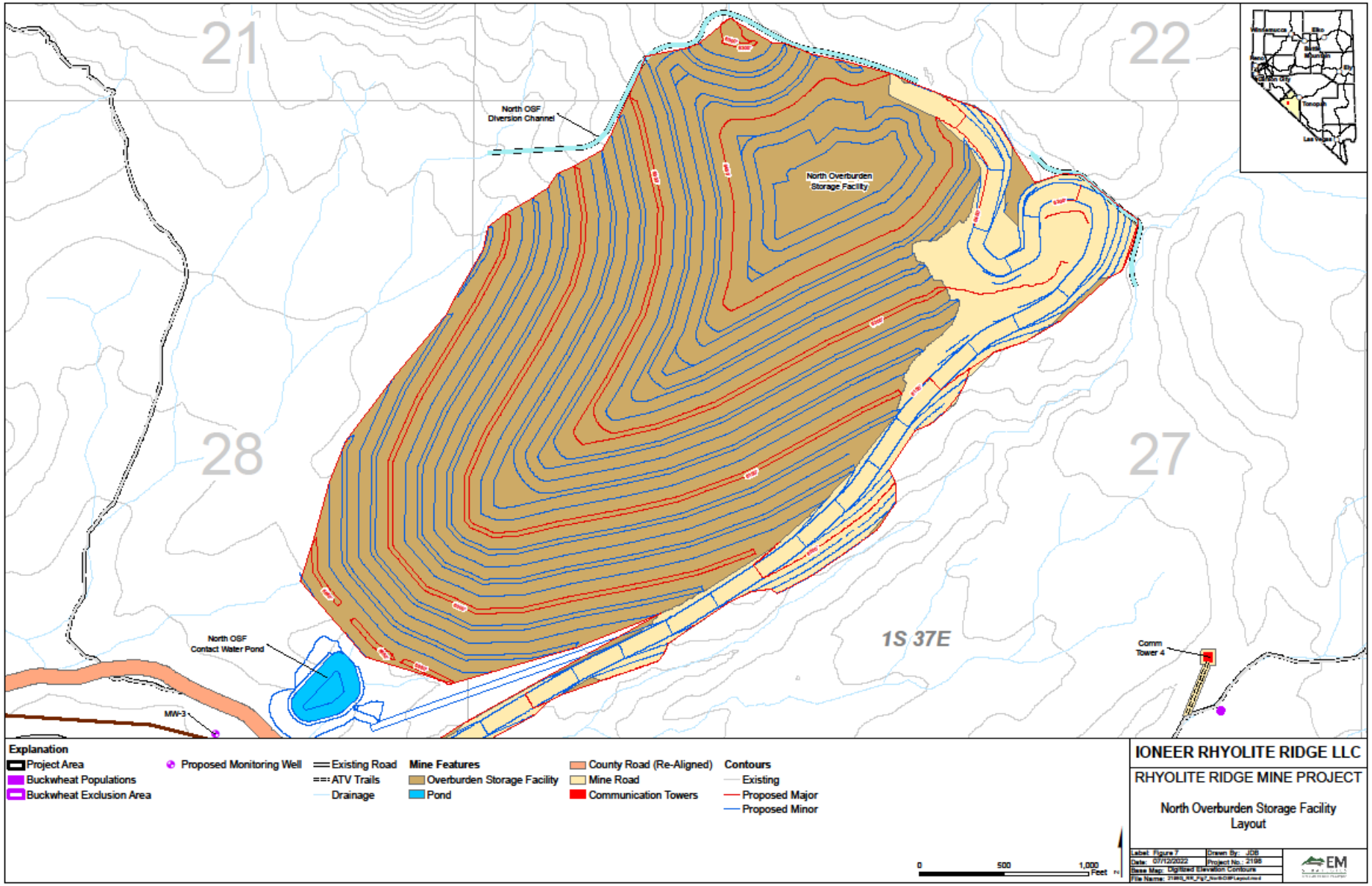
SOSF at full build out



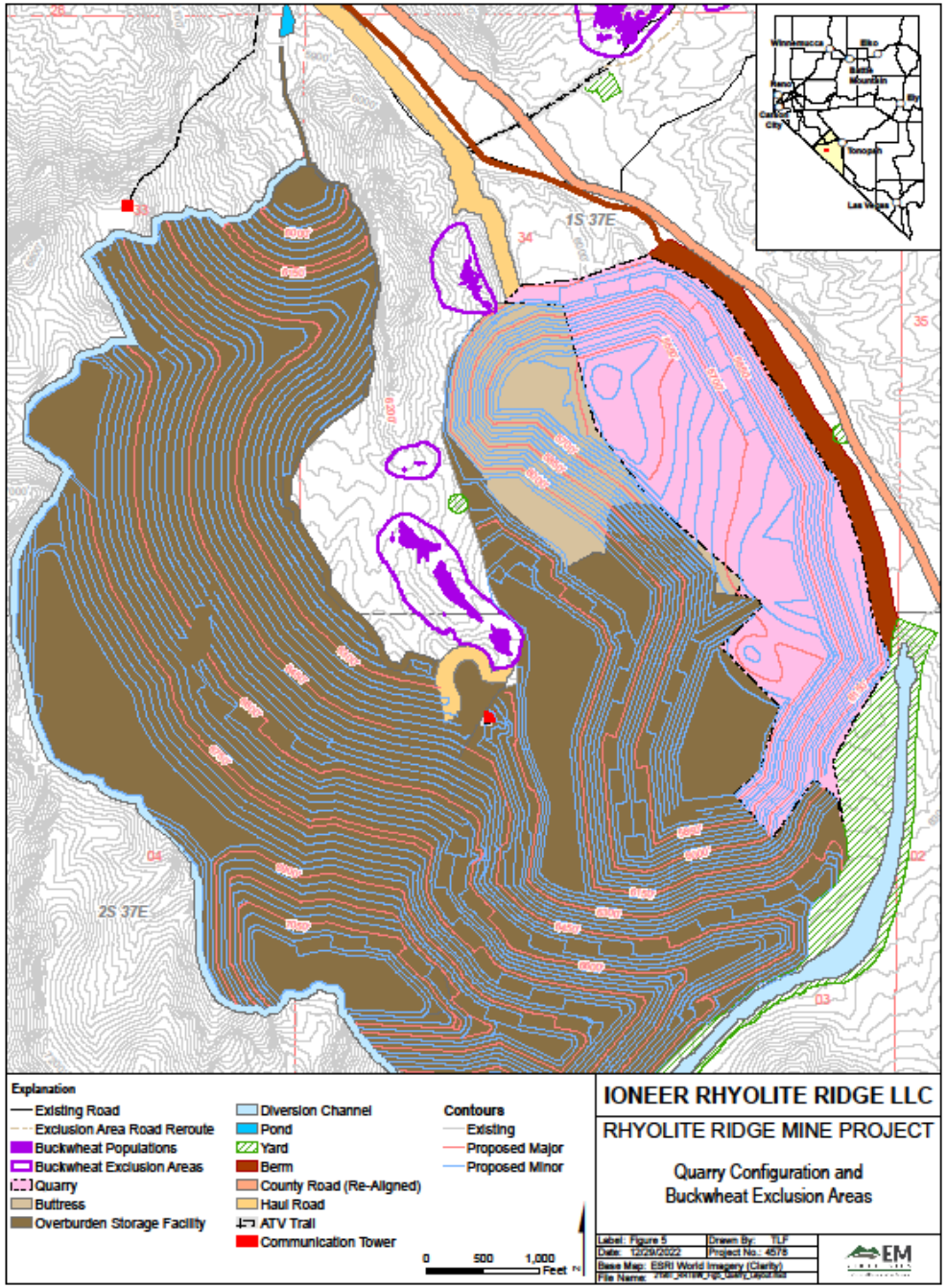
Quarry and West OSF at the end of mining



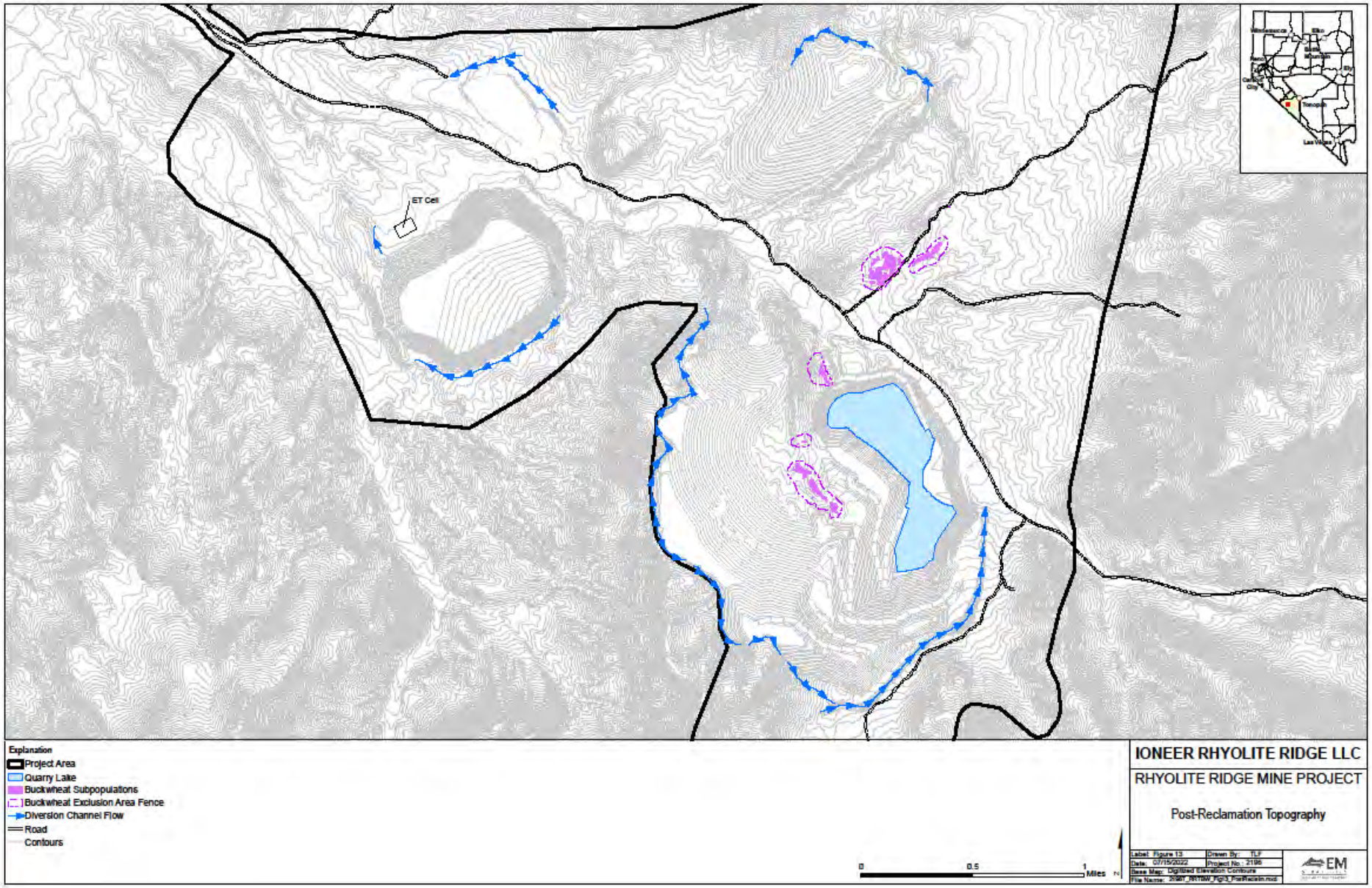
North OSF


21
22
28
27
1S 37E
North OSF
Diversion Channel
North Overburden
Storage Facility
North OSF
Contact Water Pond
MW-3
Comm
Tower 4
Explanation
Project Area
Buckwheat Populations
Buckwheat Exclusion Area
Proposed Monitoring Well
Existing Road
ATV Trails
Drainage
Mine Features
Overburden Storage Facility
Pond
County Road (Re-Aligned)
Mine Road
Communication Towers
Contours
Existing
Proposed Major
Proposed Minor
0
500
1,000
Feet
IONEER RHYOLITE RIDGE LLC
RHYOLITE RIDGE MINE PROJECT
North Overburden Storage Facility
Layout

West OSF and Buttress Placement During Reclamation



Post-Reclamation Topography



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Baseline Studies

- Surface Water Resources Baseline Technical Report
- Geochemical Characterization Report
- Hydrogeology Report
- Ecological Risk Assessment for the Quarry Lake
- Aquatic Resources Delineation
- Wildlife and Vegetation Studies – Baseline Biological Survey Reports
- Air Quality Impact Analysis
- Climate and Meteorological Evaluation
- Regional Geologic Description Tech Memo
- Geology and Minerals Resource Baseline Technical Report
- Soils and Rangeland Baseline Technical Report
- Recreation and Wilderness Baseline Technical Report
- Visual Resources Technical Report
- Land Use, Transportation, and Access Baseline Technical Report
- Socioeconomic Baseline Technical Report
- Paleontological Resource Survey and Report

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What Comments Will Be Addressed

Substantive Comments

- Question the:
  - Adequacy of the environmental analysis
  - Methodology for the environmental analysis
  - Assumptions used for the environmental analysis
- Provide new information relevant to the analysis
- Causes changes or revisions in one or more of the Alternatives

Examples

- The analysis should include ___ resources and potential impacts
- New data from *(site the information)* should be included in the analysis
- Alternatives to avoid potential impacts to ____ should be included

**If your comment doesn't identify a specific concern it likely isn't substantive*

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What Comments Will NOT Be Addressed

Non-Substantive Comments

- In Favor or Against the proposal w/out reasoning
- A vote
- Don’t like the analysis
- Agree or disagree with policy
- Don’t pertain to the project or project area
- Vague open-ended questions

Examples

- I like/dislike the proposal
- This isn’t fair
- What are you going to do about ____?

If your comment doesn’t identify specific concerns it likely isn’t substantive

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

Where to Submit Comments

Formal comments may be submitted for the Project by the following methods:

1. On-line through the BLM ePlanning website at:
   https://eplanning.blm.gov/eplanning-ui/project/2012309/510

2. By email at **BLM_NV_BMDO_TFO_NONRENEWABLE@blm.gov** with “Rhyolite Ridge Lithium-Boron Project EIS” in the subject line

3. By regular mail to the following address:

   Bureau of Land Management
   Attn: Rhyolite Ridge Lithium-Boron Project
   50 Bastian Road
   Battle Mountain, Nevada 89820

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

Q&A Session

How to Ask Questions

Zoom - Type your question into the question and answer box or raise your hand to be called on. When recognized by the moderator unmute and ask your question.

Phone - Press *9 to raise your hand, when recognized by the moderator hit *6 to unmute and ask your question.

How to Submit Scoping Comments

ePlanning Website: https://eplanning.blm.gov/eplanning-ui/project/2012309/510

Email: BLM_NV_BMDO_TFO_NONRENEWABLE@blm.gov

Mailing Address: Bureau of Land Management
Attn: Rhyolite Ridge Lithium-Boron Project
50 Bastian Road
Battle Mountain, Nevada 89820

Project Overview for Public Scoping

BLM

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

Ioneer Rhyolite Ridge LLC

Rhyolite Ridge Lithium-Boron Project Overview
For
Public Scoping

DOI-BLM-NV-B010-2021-0006-EIS

Preparing Office
Battle Mountain District
Tonopah Field Office
1553 South Main Street
Tonopah, Nevada 89049

December 2022

Table of Contents

TABLES

FIGURES

ACRONYMS AND ABBREVIATIONS

ACEPM	Applicant Committed Environmental Protection Measure
ATV	All-Terrain Vehicle
BAPC	Bureau of Air Pollution Control

BLM	Bureau of Land Management
BMP	Best Management Practice
CA	Conservation Agreement
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
ESA	Endangered Species Act of 1973, as Amended
Ioneer	Ioneer Rhyolite Ridge LLC
MSHA	Mine Safety and Health Administration
NAC	Nevada Administrative Code
NAGPRA	Native American Graves Protection and Repatriation Act of 1990
NDEP	Nevada Division of Environmental Protection
NEPA	National Environmental Policy Act of 1969
NRS	Nevada Revised Statute
OPA	Operational Project Area
OSF	Overburden Storage Facility
Plan	Plan of Operations
Project	Rhyolite Ridge Lithium-Boron Project
SOSF	Spent Ore Storage Facility
SR	State Route
US	United States
USFWS	United States Fish and Wildlife Service

INTRODUCTION

Ioneer Rhyolite Ridge LLC (Ioneer) proposes to develop a new lithium and boron mine, the Rhyolite Ridge Lithium-Boron Project (Project), in Esmeralda County, Nevada. Lithium is one of the key components for systems used to store energy, foremost of which is for batteries in electric vehicles, utilities, computers, and cellular phones. Boron has a variety of uses, particularly as a critical additive to glass and ceramics to strengthen and prevent cracking, as well as for fiberglass insulation, permanent magnetics used in electric motors, and as a fertilizer to increase crop yields.

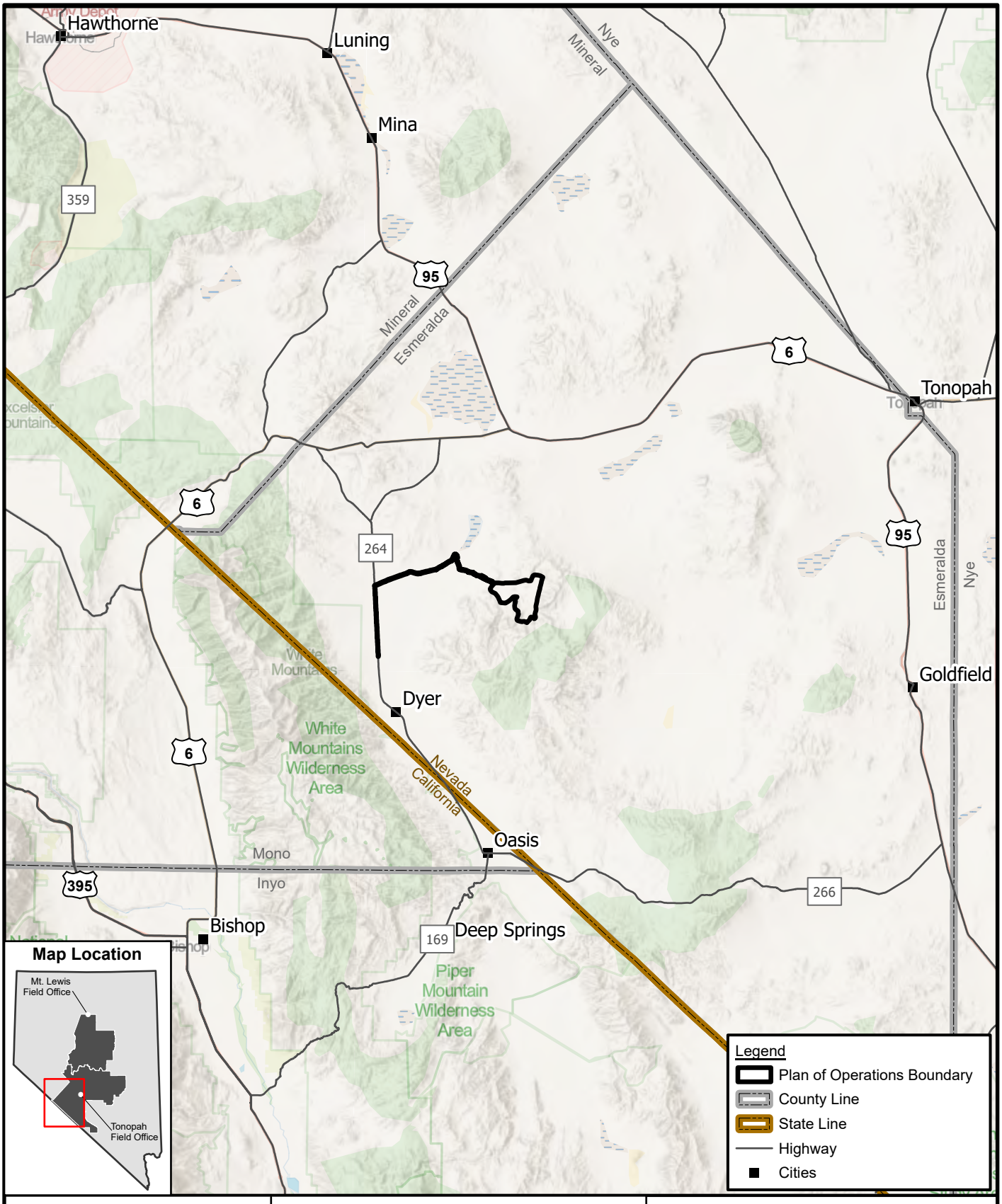
In May 2020, Ioneer submitted a Plan of Operations (Plan) (NVN-098058) and Nevada Reclamation Permit Application for the proposed Project to the Tonopah Field Office of the Battle Mountain District Bureau of Land Management (BLM). Following review by the BLM, revised Plans were submitted in July 2020, August 2020, November 2021, January 2022, and July 2022 (Ioneer 2022). The Plan was submitted to comply with Title 43 Code of Federal Regulations (CFR), subpart 3809 (43 CFR 3809.401 *et seq.*, as amended), State of Nevada regulations governing the reclamation of mined lands (Nevada Administrative Code [NAC] 519A.010-635), and BLM Instruction Memorandum No. NV-2011-004 – Guidance for Permitting 3809 Plans of Operation. The 43 CFR 3809 regulations require that the BLM fulfill its obligation under the National Environmental Policy Act of 1969 (NEPA) by analyzing and disclosing the potential environmental impacts of the Project. The revised Plan was accepted by the BLM in August 2022.

The Project is located approximately 40 air miles southwest of Tonopah and 13 air miles northeast of Dyer (**Figure 1**). The Operational Project Area (OPA) is situated on the west side of the central part of the Silver Peak Range, in a small basin in rolling foothills off the northeast side of Fish Lake Valley.

The proposed Plan boundary is 7,166 acres, which consists of the OPA and access road and infrastructure corridor (**Figure 2**). There are approximately 7,137 acres of land administered by the BLM and approximately 29 acres of private land within the Plan boundary. The access road consists of the existing Hot Ditch Road and Cave Springs Road between State Route (SR) 264 in Fish Lake Valley and the OPA. The infrastructure corridor is adjacent to SR 264 in the Fish Lake Valley. The OPA is located within the Mount Diablo Baseline and Meridian in Esmerelda County, Nevada, as described in **Table 1**.

Table 1 Legal Description of the Plan Boundary

Township and Range	Sections or Portions of Sections
T1S R35E	13, 21 through 24, 28, and 33
T1S R36E	9, 10, 14 through 19, 23, and 24
T1S R37E	19 through 23, and 26 through 35
T2S R35E	4, 9, 16, 21, and 28
T2S 37E	2 through 4, and 9 through 11



Battle Mountain
BLM District
Tonopah Field Office

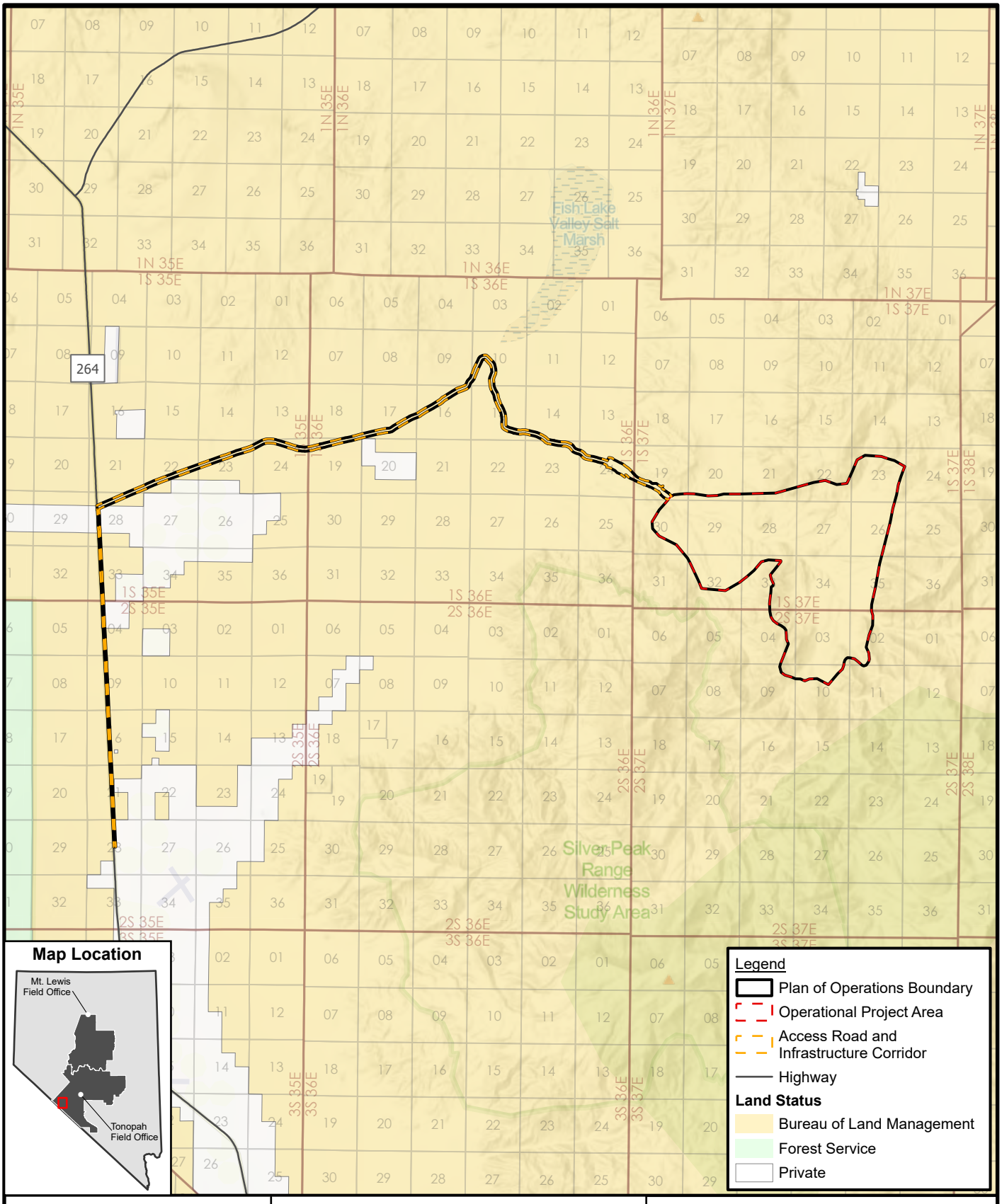
IONEER RHYOLITE RIDGE LLC
RHYOLITE RIDGE PROJECT

0 12 24 Miles
1 in = 12 miles
N

PROJECT LOCATION

FIGURE 1

2022-10-17



Battle Mountain BLM District
Tonopah Field Office

IONEER USA CORPORATION
RHYOLITE RIDGE LITHIUM-BORON PROJECT

0 2.5 5 Miles
1 in = 2.5 miles

N

PLAN OF OPERATIONS BOUNDARY

FIGURE 2

2022-12-15

HISTORY OF THE AREA

The main access routes to the OPA existed prior to January 1, 1981 and are maintained by Esmeralda County.

Several previous mineral exploration projects have been conducted in or near the OPA over previous decades. Exploration activities in the OPA include:

- Two historic adits are known to exist within the OPA; the history of these adits is unknown, but both are believed to date from approximately the 1890s.
- Stauffer Chemicals was reportedly the first company to drill boreholes in the Project vicinity, in 1962, at which time they also possibly dug and sampled several exploration trenches.
- US Borax drilled a total of 16 holes on the property between 1987 and 1992 and excavated and sampled numerous trenches. US Borax continued to hold the claim until sometime after 2000, at which time it was acquired by Gold Summit Corporation.
- In 2010-2011, after acquiring claims from Gold Summit Corporation, the JOGMEC-American Lithium joint venture re-sampled the existing trenches and drilled a total of 21 diamond core HQ-sized core holes (approximately 16,850 feet) and 15 reverse circulation mud rotary holes (approximately 12,000 feet) in the South Basin area, for a total of nearly 29,000 feet of drilling.
- In 2015, Boundary Peak Minerals acquired mineral rights to the OPA prior to its transfer to Paradigm Minerals Company in 2016.
- Global Geoscience/Paradigm Minerals Company (now Ioneer) drilled 28 RC holes (17,330 feet) and three diamond HQ-sized core holes (about 2,800 feet) in 2016 and 2017, for over 20,000 feet of drilling.

Areas disturbed by the current operator include:

- During 2018-2019, Ioneer commissioned additional infill and hydrogeological drilling to further define the mineral resource and characterize the groundwater systems, collecting and testing approximately 29,000 feet of additional core and installing three test wells, three monitoring wells, and 11 vibrating wire piezometers.
- Disturbance resulting from Ioneer's current exploration activity includes exploration access and drill pads associated with core drilling, well installation, and aquifer testing. These activities were acknowledged under Notices NVN-97202 and NVN-97262 which have since been relinquished. However, Ioneer remains responsible for this disturbance and there is bonding associated with this disturbance.

PURPOSE AND NEED FOR ACTION

The BLM's purpose is to respond to Ioneer's proposal as described in the Plan and to analyze the environmental effects associated with the proponent's Proposed Action and alternatives to the Proposed Action. The NEPA mandates that the BLM evaluate the effects of the Proposed Action and develop alternatives and mitigation, when necessary, to lessen any effects to environmental resources.

The BLM's need for the action is established by the BLM's responsibilities under Section 302 of the Federal Land Policy Management Act and the BLM Surface Management Regulations at 43 CFR 3809, to respond to a request for a Plan for the applicant to exercise their rights under the General Mining Law of 1872 and to prevent unnecessary or undue degradation of public lands as a result of the actions taken to prospect, explore, assess, develop, and process locatable minerals resources on public lands.

DECISION TO BE MADE

The BLM's decision relative to the Environmental Impact Statement (EIS) will consider the following: 1) approval of the Plan to authorize the proposed activities without modifications or additional mitigation measures; 2) approval of the Plan with additional mitigation measures that the BLM deems necessary to prevent unnecessary or undue degradation of public lands; 3) approval of the Plan with one of the alternatives analyzed in the EIS; or 4) denial of the Plan and associated activities if the BLM determines that the proposal does not comply with 43 CFR 3809 and 43 CFR 3715 regulations.

APPLICANT'S OBJECTIVE

Ioneer's purpose is to profitably extract lithium and boron from public lands where Ioneer holds mining claims. Ioneer's need is to meet the prevailing market demand for lithium and boron. The prevailing market demand is regularly adjusted by commodity exchanges throughout the world. This adjustment results from buyers and sellers agreeing on a specific transaction price, which reflects the current supply and demand for the commodity and other factors. A core mission of Ioneer is to develop a United States (US)-based source of lithium and boron that can be efficiently produced and delivered to customers globally. Lithium has been listed by the US Department of Interior as a critical mineral under the definition included in Executive Order 13817 (Federal Register, 83 FR 7065) and is needed to support technologies that would serve to combat climate change and reduce carbon emissions, particularly those associated with transportation and communication.

Lithium is one of the key components for systems used to store energy, most of which is for batteries in electric vehicles, utilities, computers, and cellular phones. Boron has a variety of uses, particularly as a critical additive to glass and ceramics to strengthen and prevent cracking, as well as for fiberglass insulation, permanent magnetics used in electric motors, and as a fertilizer to increase crop yields.

APPLICANT-COMMITTED ENVIRONMENTAL PROTECTION MEASURES AND PRACTICES

Ioneer has committed to the following applicant-committed environmental protection measures (ACEPMs) for the Proposed Action (Ioneer 2022) to ensure a safe and environmentally sound Project. These measures are outlined by resource or topic below.

Air Quality

Ioneer's products (lithium and boron) would be produced using an energy-neutral process with minimal carbon dioxide emissions from electricity that leverages innovative technologies, resulting in a plant with low emissions of greenhouse gases and minimal hazardous air pollutants. Air Quality operating permits would be obtained from NDEP BAPC prior to Project construction. Air quality protection would include control of stationary source emissions and fugitive dust control per BAPC regulations.

Appropriate emission control equipment would be installed at point (stationary) sources and operated in accordance with the construction and operating air permits. Where required, pollution control devices installed by equipment manufacturers would control combustion emissions. Pollution control equipment would be installed, operated, and maintained in good working order to minimize emissions.

Fugitive dust would be controlled on roadways and other areas of disturbance with water or NDEP/BLM-approved dust suppressants, where appropriate. Fugitive emissions at the crusher and material drop points would be minimized through application of water sprays or other dust control measures as per accepted industry practice and permit stipulation. Disturbed areas would be seeded with an interim seed mix developed in conjunction with the BLM to minimize fugitive dust emissions from exposed, unvegetated surfaces.

Ioneer would use best management practices (BMPs) to operate the ultra-low emission sulfuric acid plan (including low emissions for sulfur dioxide, nitrogen oxides, and sulfuric acid). These measures would include the use of Tier 4 equipment, controlling emissions of hazardous air pollutants, minimizing impacts to the ambient air quality, and ensuring compliance with applicable standards.

Cultural Resources

A Class III cultural resource survey was performed within and near the OPA. The types and locations of cultural resources within this area have been documented and would be avoided, where possible, during all phases of Project implementation. In the event impacts to potentially eligible cultural resources within the Project area are unavoidable, Ioneer would undertake actions in accordance with the applicable Programmatic Agreement or Memorandum of Agreement between the BLM, Nevada State Historic Preservation Office, and the Advisory Council on Historic Preservation. For those potentially eligible cultural resources that cannot be avoided by Project operations, Ioneer would work with the BLM to develop a treatment plan for data recovery, archaeological and architectural documentation, and report preparation that would be based on the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (NPS 1983).

If an unevaluated site cannot be avoided, additional information would be gathered and the site would be evaluated, as applicable. If the site does not meet eligibility criteria as defined by the *National Register Criteria for Evaluation* (NPS 1990), no further cultural work would be performed. If the site meets the eligibility criteria, it would be included in the above-mentioned treatment plan.

If previously unknown cultural resources (including, but not limited to human remains, funerary objects, or items of cultural patrimony) are encountered on BLM-administered land during Project construction or implementation, activities within 100 meters (330 feet) of a discovery would cease and the BLM Authorized Officer would be notified, in accordance with Section VI.B.1. of the *State Protocol Agreement between the Bureau of Land Management, Nevada and the Nevada State Historic Preservation Officer for Implementing the National Historic Preservation Act* (BLM and SHPO 2014).

The location of the find would not be publicly disclosed, and the remains would be secured and preserved in place. Ioneer or its contractors would also immediately notify the Esmeralda County Sheriff of the discovery. Any discovered Native American human remains, funerary objects, or items of cultural patrimony found on federal land would be handled in accordance with the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA). Non-Native American human remains would be handled in accordance with Nevada state law. An evaluation of the resource would determine any subsequent actions to be taken. Project activities would not recommence in the isolated area until a Notice to Proceed is issued by the BLM.

Ioneer would inform all field personnel of their responsibilities to protect cultural resources and report inadvertent discoveries. This includes training employees and contractors not to engage in the illegal collection of historic and prehistoric materials, avoidance procedures and avoidance buffer zones to cultural resources, and off-road travel procedures. Ioneer would also inform all field personnel of various regulations and penalties in place to protect these resources, including the Archaeological Resources Protection Act of 1979 and NAGPRA (Public Law 101-601).

Ioneer would not knowingly disturb, alter, injure, or destroy any scientifically important paleontological deposits. In the event that previously undiscovered paleontological resources are encountered, work in the areas would cease and they would be left intact and brought to the attention of the BLM. If significant paleontological resources are encountered, avoidance, recordation, and/or data recovery may be required, as determined by the BLM.

Predicted indirect effects on cultural resources from blasting and equipment use were quantified as part of the Class III Cultural Resources evaluation to identify any potential resources that may be indirectly affected as a result of vibration caused by Project activities. In addition to avoiding areas that would be predicted to impact known cultural resources, Ioneer would perform vibration monitoring at cultural sites throughout Project activities (during construction and operations) in order to collect empirical data, verify predicted

effects, and ensure that valued cultural resources are preserved. Adaptive management strategies would be applied as needed to protect cultural resources.

Erosion and Sediment Control

Erosion and sediment control would be accomplished through the application of BMPs to limit erosion and reduce sediment from precipitation or snowmelt runoff. Surface water would be managed using surface stabilization measures, runoff and run-on control and conveyance systems, and sediment traps and barriers. These practices are detailed in the Project's Stormwater Management Plan (Ioneer 2022) (**Appendix C**).

Following construction, areas such as cut-and-fill embankments and growth media stockpiles would be seeded with an interim seed mix developed in conjunction with the BLM to stabilize material, reduce erosion and minimize the establishment of undesirable weeds, and sediment controls would be applied to limit wind and water erosion. Concurrent reclamation would be implemented, to the extent possible, to accelerate stabilization of disturbed areas. All sediment and erosion control measures would be inspected regularly, with any needed repairs performed or additional BMPs implemented.

Water Resources

The Project is located in the Fish Lake Valley Hydrographic Basin (10-117), which is considered endorheic and does not contribute to traditionally navigable waters. No permanent (perennial) streams are present in the OPA.

The Project's water needs would be derived first from groundwater wells located on site and then from existing wells in the Fish Lake Valley. In general, there are few domestic water users in the Fish Lake Valley, with agricultural operations currently holding the majority of groundwater rights within the basin. All necessary water rights have been secured or leased by Ioneer and would be transferred to the appropriate points of diversion and places of use. If impacts to surface water are observed and found to be related to Project activities, such impacts would be addressed.

Process components would be designed, constructed, and operated in accordance with NAC 445A. Water would be recycled to the maximum extent practicable to conserve water resources. Stormwater management would ensure that clean water and contact water are not intermingled. Stormwater monitoring would be completed according to the Stormwater Management Plan (Ioneer 2022) (**Appendix C**) to ensure that all surface water controls are stable and well maintained.

Geology and Minerals

A Quarry Lake Evaluation Report (Ioneer 2022) (**Appendix D**), Geochemical Characterization Report (Ioneer 2022) (**Appendix E**), and Overburden Management Plan (Ioneer 2022) (**Appendix F**) have been prepared in accordance with BLM and NDEP guidance, in addition to a Geology and Minerals Baseline Technical Report for the OPA and vicinity (NewFields 2019). The Geochemical Characterization Report describes the potential for acid rock drainage, metals and metalloids leaching, and salinity generation from overburden, ore, and process residual materials as well as the potential for mobilization of deleterious constituents.

The Quarry Lake Evaluation Report describes the anticipated geochemical and hydrogeological characteristics of a predicted post-closure quarry lake. The Overburden Management Plan includes recommendations, from an environmental geochemistry standpoint, for overburden handling, overburden placement, and Overburden Storage Facility (OSF) design. Objectives of the Overburden Management Plan include: minimizing leaching of metals and metalloids; minimizing sulfide oxidation and development of localized acidic conditions; limiting seepage through overburden materials; and facilitating closure of the OSFs.

Materials and Waste Management

The Project may result in the use and generation of hazardous and non-hazardous waste materials. The management of regulated solid and hazardous wastes that are not considered mine waste or associated with process components would be managed according to BMPs and requirements of regulatory permits. Efforts to find markets for other leached materials would continue during operations as a means to reduce waste quantities. Spill contingency and emergency response measures are included in the Emergency Response and Spill Contingency Plan (Appendix G of Ioneer 2022).

Hazardous Materials and Solid Waste

Hazardous materials would be transported, stored, and used in accordance with federal, state, and local regulations, including regulations identified in Standards Applicable to Generators of Hazardous Waste (40 CFR 262). Management of hazardous materials associated with the Project would comply with all inventory and reporting requirements. Management of hazardous materials associated with the Project would comply with all inventory and reporting requirements. Hazardous materials would be transported by certified carriers. Employees would be trained in the proper transportation, use, and disposal of hazardous materials.

Blasting components would be stored in silos at the explosives storage area away from other Project facilities and a minimum of 700 feet from Cave Springs Road in compliance with the Mine Safety and Health Administration (MSHA), state, and federal requirements. Boosters and detonators would be stored at a separate location nearby.

All liquid petroleum products and reagents used in the process would be stored within the Processing Facility in aboveground tanks within a secondary containment area capable of holding 110 percent of the volume of the largest vessel in a given containment area, as per NAC 445A.436.

Sanitary and Solid Waste Disposal

Employee training plans would address appropriate disposal practices, to include education on which wastes may be placed in a landfill, as well as management of regulated substances. Nonhazardous solid wastes would be disposed of off site in a licensed facility. Used solvent, liquids drained from aerosol cans, accumulations of mercury fluorescent lights, and used antifreeze may be regulated under Resource Conservation and Recovery Act and would be managed accordingly. Ioneer anticipates that the facility would fall in the “conditionally exempt small quantity generator” category. Domestic wastewater would be routed, treated, and disposed of appropriately.

Petroleum-Contaminated Soils

Petroleum-contaminated soils resulting from spills or leaks of hydrocarbons would be addressed immediately and removed from the spill site and stored in appropriate secondary containment areas in accordance with NDEP guidelines. Ioneer would excavate and transport any petroleum-contaminated soils to a licensed off-site disposal facility.

Growth Media Soil Salvage

Suitable growth media/cover material would be salvaged and stockpiled during Project development. Growth media stockpiles would be located such that they would not be disturbed by Project development. The surfaces of the stockpiles would be contoured with slopes at 3 Horizontal (H): 1 Vertical (V) to reduce erosion. To minimize wind and water erosion, growth media stockpiles would be seeded with an interim seed mix developed in conjunction with the BLM to stabilize material, reduce erosion and minimize the establishment of undesirable weeds. Surface water would be diverted around stockpiles as needed to prevent erosion from stormwater runoff. BMPs such as silt fences or staked weed-free straw bales would be applied as necessary to limit wind and water erosion.

Monitoring Plan

Baseline monitoring and characterization were completed at the onset of this Project. These findings would be utilized as a basis for assessing potential impacts to air, water, and biological resources that may result

from the Project. The Monitoring Plan (Ioneer 2022) (**Appendix H**) and other commitments (leak detection, fluid management, etc.) to be included in the Water Pollution Control Permit would serve as a basis for monitoring activities. These plans may be updated as the Project progresses to accommodate changes in conditions and ensure ongoing protection of the environmental integrity of resources on site.

Tiehm's Buckwheat

The US Fish and Wildlife Service, Reno Fish and Wildlife Office (USFWS) received a petition to list Tiehm's buckwheat (*Eriogonum tiehmii*) under the Endangered Species Act of 1973, as amended (ESA) as an endangered or threatened species and to concurrently designate critical habitat on October 7, 2019. On June 4, 2021, the USFWS announced its 12-month finding on a petition to list Tiehm's buckwheat as an endangered or threatened species under the ESA. The USFWS determined, after a review of data that they stated was the best available scientific and commercial information then available to them, that the petitioned action to list Tiehm's buckwheat, a plant species native to Nevada in the US, was warranted. On October 7, 2021, the USFWS issued a proposed rule (RIN 1018-BF94) to list Tiehm's buckwheat as endangered under the ESA. In addition, on February 3, 2022 the USFWS issued a proposed rule for Tiehm's buckwheat critical habitat, which encompasses a 500-meter area around the subpopulations.

The Nevada Division of Forestry received a petition to add Tiehm's buckwheat to the State list of fully protected species of native flora in NAC 527.010, also on October 7, 2019. The Nevada Division of Forestry is currently in the process of reviewing the species for listing under their state regulations. Eight subpopulations of Tiehm's buckwheat were mapped and extensively studied within the OPA. None of Ioneer's exploration activities have disturbed any of these subpopulations. Extensive surveys have been performed both within and outside of the OPA. The total number of plants was estimated to be approximately 44,000 in 2019. Many plants were killed or damaged by herbivores in 2020. The most recent population estimate by EMS in May 2021 was 24,174 plants . Collectively, the subpopulations occupy approximately 10 acres (Ioneer 2022).

Ioneer has been engaged with the BLM and the USFWS regarding the protection of Tiehm's buckwheat and measures to ensure the long-term viability of the species. As a result of these discussions a draft Conservation Agreement (CA) was developed and a number of the measures in the CA have been used in the development of the Tiehm's Buckwheat Protection Plan (Ioneer 2022) (**Appendix I**). Information regarding the plant and the means Ioneer would protect the plant, include: establishing disturbance buffers around the subpopulations; installing fencing around known populations as soon as a continuous Project related presence is on site; implementing a propagation and transplant program for plants at new locations; and constructing growth media area on the reclaimed OSF that reflects the geochemical and physical characteristics of the occupied Tiehm's buckwheat habitat. Specifics of these measures are provided in the Tiehm's Buckwheat Protection Plan, which has been developed by Ioneer to conserve and expand the species (Ioneer 2022) (**Appendix I**). The size and shape of the buffer areas were developed based on the specific topographic characteristics at each subpopulation and designed to avoid direct effects to the subpopulations from the Project. It should be noted that these ACEPMs for Tiehm's buckwheat are designed to only address potential threats to the species for Project related activities. Protection measures to address potential threats to the species that are not related to Project activities are being addressed in the ongoing discussions regarding the CA. In addition, all activities, including mining, have been designed to avoid any surface disturbance within the Buckwheat Exclusion Area, and thus the subpopulations. The Buckwheat Exclusion Area would be fenced and the distance of the fence from the subpopulation would vary from 13 to 127 feet.

Noxious Weeds and Invasive Non-native Species

Ioneer has developed a Noxious and Invasive Weed Management Plan (Ioneer 2022, Appendix J) for the Project. Prevention, detection, containment, and removal would be priority strategies for weed control. Weeds on site would be physically removed or treated with approved herbicides by certified applicators. Weed treatment activities within the Tiehm's buckwheat avoidance area and the subpopulations would be limited. Monitoring would include creation of an occurrence and treatment database including geographic locations of sites. The results from annual monitoring and treatment would be reported to the BLM and shall serve as the basis for updating the plan and developing ongoing annual treatment programs.

Wildlife and Avian Protection

Ioneer is committed to protecting wildlife and avian species and their supporting habitat as much as possible. The following conservation measures would be implemented by Ioneer to reduce or preclude risks to raptors, birds, bats, grazing animals, and other species that may interact with Project activities or facilities.

Land-clearing or other surface disturbance associated with the Project would be conducted outside of the avian breeding season, whenever feasible, to avoid potential destruction of active nests or young birds in the area. When surface disturbance must occur during the avian breeding season (March 1 through July 31), a BLM-qualified biologist would survey the area prior to land clearing activities in accordance with current BLM protocols. Survey results would be submitted to BLM before surface disturbance occurs.

Avian, bat, and eagle protection measures would be developed as required.

The open adit adjacent to the Project haul road would be fenced to exclude public access and may be closed in coordination with NDOW and BLM.

The Processing Plant Area, the Quarry, Explosive Storage Area, and contact water ponds would be fenced to specifications outlined in the BLM Handbook 1741-1, as applicable. All fences would include double swing gates to allow for human access. Ioneer would also coordinate with NDOW on fencing specifications. Avian and wildlife protection measures would be in compliance with Industrial Artificial Pond Permit measures.

Primary pond liners would consist of 80-mil high density polyethylene single-sided textured geomembrane with the textured side up to facilitate wildlife egress.

Operators would be trained to monitor the OPA for the presence of larger wildlife such as deer, antelope, and sheep. Mortality information would be collected and reported, as necessary.

Ioneer would establish wildlife protection policies that prohibit feeding or harassment of wildlife within the OPA boundary.

Following Project construction, areas of disturbed land no longer required for operations would be reclaimed as required by the BLM to promote the reestablishment of native plant and wildlife habitat.

Public Safety and Accessibility

Public safety would be maintained throughout the life of the Project by excluding unauthorized access to sensitive Project facilities through installation of fencing and security features (including cameras and personnel) as well as installation of traffic-control measures. The latter would include establishment of speed limits (to be strictly enforced) for Project-related traffic on public and haul roads, installation of a rail-road type crossing guard (plus stop signs) at the intersection of the haul road and Cave Springs Road near the Processing Plant, and installation of stop signs at the intersection of Cave Springs Road and the service road to the Explosives Storage Area from the Quarry area (Ioneer 2022) (**Appendix K**). These measures would also provide for continued accessibility of the public to and through the OPA. All equipment and facilities associated with the Project would be maintained in a safe and orderly manner as another measure to provide for the safety of the public. In addition, all activities would be conducted in conformance with applicable federal and state health and safety requirements; site visitors would be properly instructed in site safety procedures prior to admittance.

Transportation and Access

Ioneer's Transportation and Access Plan (Ioneer 2022) (**Appendix K**) outlines safe procedures and mandatory practices for Project-related personnel travel and material transport to and from the Project. The plan includes a description of how safe public access would continue to be accommodated through the Plan boundary, in coordination with Esmeralda County and other existing road users. In addition, Ioneer realizes that certain road engineering upgrades and maintenance activities must be implemented in order to safely accommodate the increased traffic that would result from proposed Project activities. Accordingly,

an Access Road Improvement and Maintenance Plan (Ioneer 2022) (**Appendix L**) has been produced. Together, the Transportation and Access Plan (Ioneer 2022) (**Appendix K**) and the Access Road Improvement and Maintenance Plan (Ioneer 2022) (**Appendix L**) outline the various commitments Ioneer has made related to road improvement, management, and maintenance.

Visual Resources and Night Skies

A Visual Resources Technical Report was prepared to characterize existing conditions associated with visual aspects in and around the Project area (NewFields 2022). Ioneer would seek to minimize the visual impact of activities and structures to viewers along publicly accessible roadways, public use areas, and within the Wilderness Study Area in consideration of guidance included in Appendix 3 of BLM's Visual Resource Contrast Rating Manual 8431 (BLM 1986). Dark sky lighting best practices would also minimize the effects of lighting on wildlife that may be present in the area, including bats. Several examples of measures Ioneer intends to implement include:

- Careful placement and blending of stored materials to minimize contrast;
- Selection of building sites and new roads such that they would be hidden from view behind topographical features, where possible; and
- Consultation with BLM on choice of colors of machinery, fencing, and powerlines; lighting design and color; and design, color, and surface texture treatments for the Processing Plant structures.

To minimize the effects from lighting, Ioneer would utilize hooded stationary lights and lighting plants. Lighting would be directed onto the pertinent site only and away from adjacent areas not in use, with safety and proper lighting of the active work areas being a priority.

Fire Protection and Emergency Response

The Emergency Response and Spill Contingency Plan (Ioneer 2022) (**Appendix G**) details procedures for responding to emergency incidents including fire, accidents, and spills. Fire protection equipment would be secured and a fire protection plan would be established for the Project in accordance with National Fire Codes for Fire Protection and State Fire Marshal. The Project would operate in conformance with all applicable MSHA and Occupational Safety and Health Administration safety regulations (30 CFR 1-199).

Smoking would only be permitted in designated areas that are free of flammable materials and only if allowed by state law or federal regulations. Ioneer would immediately contact the appropriate dispatch or coordination center in the event of a fire and report all wildland fires to BLM and other relevant agencies.

Project vehicles would be equipped with radios and/or cellular telephones for fire preparedness and prevention, suppression operations, and emergency response purposes. Crew vehicles and equipment would also be supplied with an emergency communication list that would include emergency contact information for administering agencies.

RECLAMATION

Reclamation of disturbed areas resulting from activities outlined in the Plan would be completed in accordance with the BLM and NDEP regulations. The purpose of Title 43 CFR Part 3800 Subpart 3809 – Surface Management is to prevent unnecessary or undue degradation of public lands by activities authorized under the mining laws. This subpart establishes procedures and standards to ensure that operators and mining claimants meet this responsibility and provide for the maximum possible coordination with appropriate state agencies to avoid duplication and to ensure that operators prevent unnecessary or undue degradation. In addition, the State of Nevada requires that a reclamation plan be developed and approved for new mining projects and for expansions of existing operations (Nevada Revised Statute [NRS] and NAC 519A). The sections below provide a description of closure and reclamation activities for the Project.

The Project schedule includes approximately four years of construction, a concurrent 17 years of operation, a period of closure to be determined based on site conditions, and a minimum of six years (total) of phased reclamation (including three years prior to revegetation release of the main facilities, followed by three years of regrading and revegetation of the sediment ponds and diversion channels) after Project facilities are closed, or until the reclamation of the site or component has been accepted by both the BLM and NDEP. Additional environmental monitoring (including the quarry lake) is expected to extend beyond the date of revegetation release, as guided by final closure plans.

During the life of the Project, concurrent and interim reclamation would be completed whenever possible and would occur as soon as possible after disturbance activities are complete. Concurrent reclamation of some facilities, such as the OSFs, would be ongoing until the final configuration is achieved. Reclamation of the OSFs would be started in Year 1 of operations when final build-out is expected to be completed on a portion of the facility. Closure of the spent ore storage facility (SOSF) would commence in the 17th year of operations. Closure and reclamation of the processing facility and ancillary facilities would begin around the same time, after the completion of processing and leaching.

Suitable growth media would be required to reclaim the Operational Area in support of concurrent reclamation activities and at closure. Salvageable growth media from construction and stripping activities would be stockpiled at central locations for this purpose, such that the native material is readily accessible and would not be disturbed by ongoing operations. Additional growth media would be stripped from within the quarry footprint during operations, as needed to meet reclamation requirements. All reclaimed surfaces would be revegetated with a BLM approved seed mix.

All reclaimed surfaces would be revegetated to control runoff, reduce erosion, provide forage for wildlife and livestock, and reduce visual impacts. On slopes that are less than 33 percent, the seedbed would be prepared along the contour, utilizing a chisel-plow, disc, harrow, or other appropriate equipment to break up the surface. On slopes that are steeper than 33 percent (and not benched), too narrow to operate equipment, or where organic debris has been re-spread, the surface would be left in a roughened condition to help retain seed. Seedbed preparation and seeding would take place when possible in the fall after regrading reclaimed areas. Broadcast seeding would be completed using conventional methods utilizing broadcast drop seeders or comparable equipment, manually operated cyclone-type bucket spreaders, or a mechanical seed blower. Seed would be mixed frequently in the seed boxes to discourage settling. Where possible and practical, broadcast-seeded areas would be chained or harrowed to cover the seed. Where slope conditions allow, broadcast-seeded areas may be dozer-tracked perpendicular to the slope. On small or inaccessible sites, hand raking may be used to cover seed.

Closure activities would be conducted to standards required by the State of Nevada (NAC 445A.433) and NRS 519A. While final reclamation and closure of each of each primary Project component would be based on location, contact with the ore body, and function, general regrading and reshaping activities would include the following:

- A recontouring plan that provides for resistance to erosion, geotechnical stability, and a naturally appearing landform. The quarry, SOSF, and OSFs would become permanent landforms and hence would change the appearance of the area. To accommodate the reconfiguration of the land, closure activities would allow for a configuration that mimics the pre-Project condition to reduce visual impacts, to the extent possible.

- Facilities would be covered with native materials that are capable of generating unimpacted runoff or storing water during the colder times of the year and removing it through evaporation and evapotranspiration during the warmer months.

- Upstream drainages would be diverted away from reclaimed facilities to prevent potential erosion, where practicable.

All buildings, concrete slabs and footers, and other ancillary features would be buried or removed from the Processing Facility. Temporary ore stockpiles would be depleted and the underlying areas disposed of.

Waste would be disposed of properly, and confirmation testing would occur, as necessary. The contact water pond would be drained and regraded. Disturbed areas would be regraded and revegetated.

A safety berm would remain in place around the perimeter of the quarry and warning signs would be constructed prior to decommissioning of the quarry fence at the end of operations. A single quarry access point would remain to allow for periodic quarry lake monitoring, with a gate installed to restrict access and prevent public entry. An overland all-terrain vehicle (ATV) trail from the public road to the quarry would remain for monitoring of water in the quarry by Project personnel as long as is required. The ATV trail to the quarry would be bermed and signed for safety and to prevent public access. A diversion feature would continue to re-direct stormwater run-on from upgradient of the quarry into natural drainages, to the extent practical. Stormwater diversions would be designed to withstand a 500-year, 24-hour storm event. This would promote long-term stability of the quarry by controlling run-on into these areas.

During final mine closure, all buildings, tanks, communication towers, and materials would be decommissioned and removed from the Operational Area, with the exception of Communication Tower 3 which would remain to continue to provide cellular service to the area should a new owner be identified. Concrete footers and slabs would be broken in-place and buried by a minimum of three feet of growth media. Areas will be regraded to blend into the surrounding area and revegetated.

Four of the five communication towers would be decommissioned, disassembled, and removed completely from site. All parts would be recycled or reused to the extent practicable. Communication Tower 3 would remain in place to continue to provide cellular service to the area. Ownership of this tower would be transferred completely to a major cellular service provider after Project closure.

All reagents, chemicals, and fuel would be completely removed and disposed of appropriately, in accordance with their specific handling procedures and disposal requirements. Chemical storage containers would also be cleaned/neutralized properly, per their specific characteristics, during decommissioning.

Prior to closure, sulfuric acid holding tanks would be depleted to the extent possible and would therefore not be filled to maximum capacity at the time of closure. Any remaining acid would be put into appropriate containers, transported by approved carriers, and re-sold in the sulfuric acid market for reuse or recycling. Acid tanks would be neutralized and cleaned during the decommissioning process.

Benign waste materials would be shipped off site by an approved solid waste transport vendor and hazardous wastes would be taken to an appropriate off-site, licensed hazardous waste facility. Buried water/septic lines and/or other piping would be disconnected, capped, and left in place. If implemented, the septic system would be decommissioned and reclaimed in accordance with WTS-20 (NDEP 2017). All traffic control devices would be removed from the site and any disturbed land would be regraded and revegetated, as necessary.

Facilities that would remain following reclamation include the following:

- Access to the quarry, quarry berm, associated quarry lake, SOSF, and OSF;
- Quarry and associated Quarry Lake;
- Communication Tower 3 (if ownership is transferred completely to a major cellular service provider after Project completion) and unmaintained overland ATV trails to access Communication Tower 3;
- Cave Springs Road Wash Berm;
- Cave Springs Road including the Realignment;
- Argentite Canyon Road Realignment; and
- Stormwater controls.

Existing unmaintained and county-maintained roads would also remain, including the realigned portion of the county-maintained public road. As determined appropriate by the BLM and Esmeralda County, any roads on public lands suitable for or providing public access consistent with pre-operational conditions would not be reclaimed at Project closure.

PROPOSED ACTION

Ioneer is proposing to construct, operate, and close a new lithium-boron mine in the Silver Peak Range in Esmeralda County, Nevada. The life of the Project is approximately 23 years, and includes the construction phase of approximately four years (Years 1 through 4), the mining phase of approximately 17 years (Years 1 through 17), the processing phase of 13 years (Years 4 through 17), and the reclamation and closure phase of 6 years (Years 18 through 23). Monitoring would continue, as necessary. Project facilities include the following:

- Quarry;
- Processing Facility;
- OSF;
- SOSF;
- Contact Water Ponds;
- Haul Road, Service Roads, and Dewatering Pipeline;
- Stockpiles;
- Explosives Storage Area;
- Sewage System;
- Public Road Realignment;
- Communication Towers and ATV Trails;
- Proposed Monitoring Locations and Access;
- Proposed Water Supply Testing and Facilities; and
- Resource Exploration Drilling and Dewatering Wells.

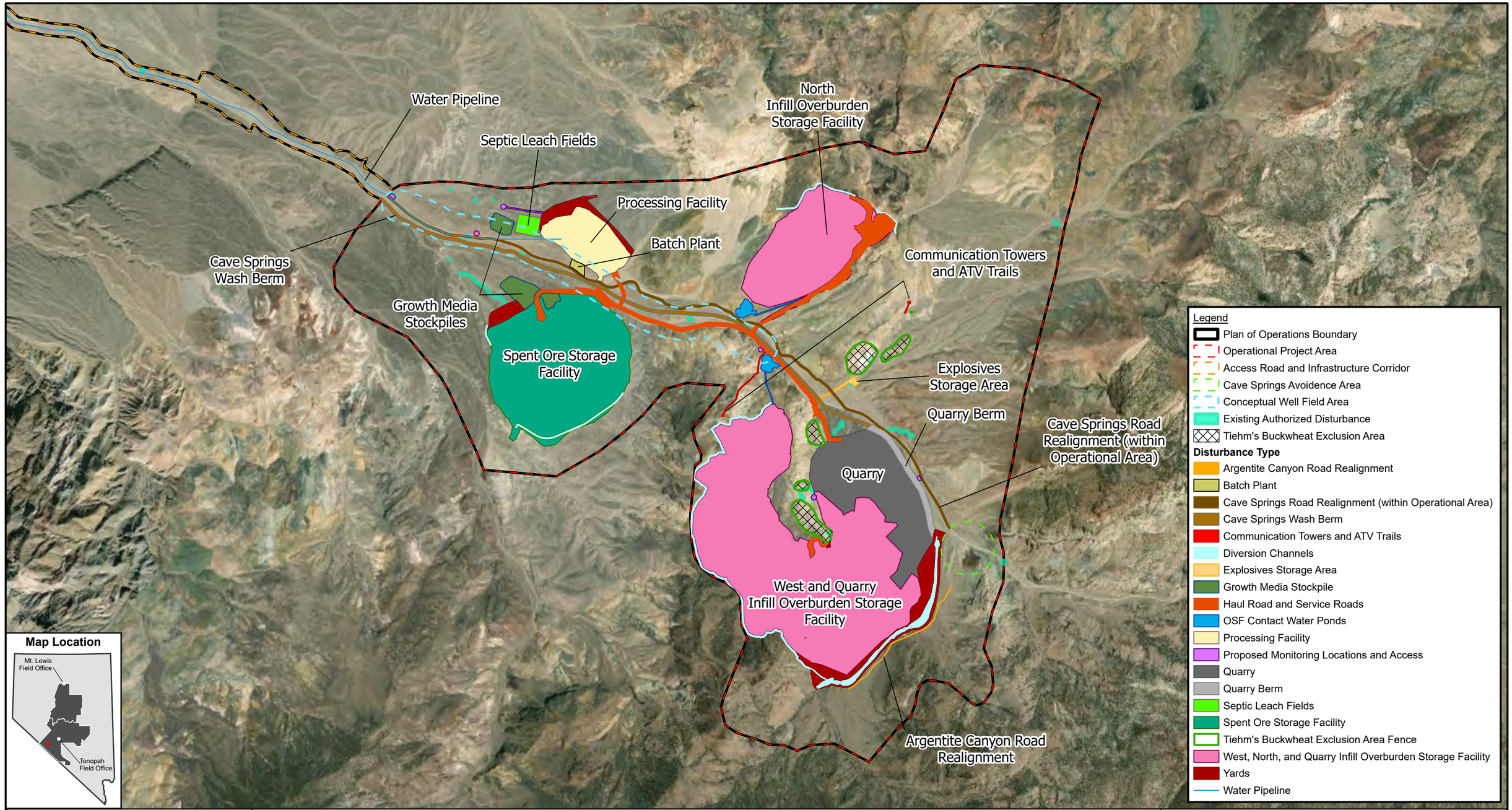
The Proposed Action would create an additional 2,299 acres of surface disturbance on public land administered by the BLM and private land. Approximately 35 acres of exploration would occur anywhere within the OPA, 30 acres of disturbance could occur anywhere within the conceptual wellfield area for dewatering facilities, 20 acres of disturbance could occur anywhere within the Plan boundary. In addition, approximately three acres of existing authorized exploration-related disturbance would be included as part of the Proposed Action. Therefore, the total surface disturbance associated with the Proposed Action would be 2,302 acres.

The location of Project components are illustrated on **Figure 3**, and proposed surface disturbance by facility type is provided in **Table 2**.

Table 2 Proposed Surface Disturbance

Project Component	Area (acres)[1]	Comments
Quarry[2]	201.5	Includes fence and water storage tanks.
Quarry Berm	19.1	200-foot wide berm between the Quarry and the wash.
Processing Facility	82.6	Includes contact water pond, minimum 20-foot disturbance buffer, and diversion channels.
West, North, and Quarry Infill OSFs	947.3	Includes contact water pond, minimum 20-foot disturbance buffer, and diversion channels.
SOSF	373.9	Includes underdrain pond, minimum 20-foot disturbance buffer, and diversion channels.
Ponds	11.9	The North and West OSFs contact water ponds, drainage, and access.
Haul Road and Service Roads	101.7	Includes all haul roads and service roads with 20-foot disturbance buffer.
Stockpiles	30.0	Includes growth media stockpiles with minimum 20-foot disturbance buffer.
Explosives Storage Area	2.6	Explosive storage and area access road including 20-foot disturbance buffer.
Septic Leach Fields	10.0	Includes primary and reserve leach field for septic sewage management (if selected as preferred alternative).
Communication Towers and ATV Trails[3]	3.0	Includes Towers 3 and 4, and 40-foot-wide disturbance buffer for access to monitoring locations.
Proposed Monitoring Locations and Access	3.8	Includes 5 proposed monitoring wells (0.5 acres each) and associated 40-foot-wide access routes.
Project Area Exploration	35	Includes phased exploration activities (access routes, drill sites with sumps)
Water Supply Facilities	20	Includes access routes, wells, power and pipelines.
Dewatering Facilities	30	Includes access routes, drill sites with sumps, wells, power and pipelines.
Cave Springs Road Realignment (within OPA)[4]	46.8	Existing alignment: includes 28-foot width plus 60-foot disturbance buffer for 24,691 feet.
Argentite Canyon road realignment	1.6	Includes a 15-foot wide road for the 4,789 feet.
Buckwheat Exclusion Area and Critical Habitat Fence	4.6	Assumes a 30-foot disturbance width for the 13,569 linear feet of fencing.
Yards	80.8	General surface disturbance that does not require grading.
Fencing	0.0	All fencing is located on other facility footprints, so 0.0 acres of disturbance assumed. Also, assumed 18,427 linear feet of fencing for reclamation bond calculation purposed.
Cave Springs Wash Berm	37.1	Assumes a 100-foot disturbance width for the 17,747 linear feet of berm.
Diversion Ditches	60.0	Assumes a 60-foot disturbance width for the 34,618 linear feet of ditches.
Access Road and Infrastructure (within the Access Road and Infrastructure Corridor Area)	192.7	Maximum of 100 feet wide along the access road for 67,531 feet and 50 feet wide along SR 264 for 32,842 feet.
Batch Plant	3.2	To be constructed and used during the construction phase.
Proposed Action Disturbance	2,299.2	**--**
Existing Disturbance	3	**Existing Disturbance not within the Proposed Action footprint.**
Total Project Disturbance	2,302	**Including Proposed Action and Existing Disturbance**

[1] All areas include a minimum 20-foot buffer around the feature unless otherwise specified.
[2] The Quarry's full area will be 473.7 acres; however, 272.2 acres above the quarry rim will be occupied by the Quarry Infill OSF. Thus, leaving 201.5 acres of the Quarry remaining at the end of the mine life.
[3] Towers 1, 2, and 5 are included within the surface disturbance footprint of other facilities.
[4] Includes existing and realigned segments within Operational Area only. Access Road is included as a separate line item.



Battle Mountain
BLM District
Tonopah Field Office

IONEER USA CORPORATION
RHYOLITE RIDGE LITHIUM-BORON PROJECT

0 3,000 6,000 Feet

1 in = 3,000 feet

N

PROPOSED ACTION PROJECT FACILITIES

FIGURE 3

2022-12-15

The area at the quarry would be dewatered during mining. When mining is complete and operational dewatering ceases, the groundwater system would recover, and a terminal quarry lake is predicted to remain. Three existing test wells would be converted to dewatering wells, and an additional network of dewatering wells is also anticipated to be installed adjacent to or near the quarry. Activities associated with dewatering would include access routes, drill sites with sumps, dewatering wells, pipelines, and powerlines or generators. Water derived from dewatering wells and sumps at the quarry would be stored in one or more tanks around the quarry perimeter. Dewatering water would be pumped from the storage tank(s) into water trucks and used for dust suppression within the quarry or on other Project roads. Water derived from dewatering wells in the periphery of the quarry would be supplemented with water from on-site water supply wells for the first seven years of operations. From years seven to 20, water from existing wells would continue to be used, and a new pump station would be used. The new pump station would be located on private land in the Fish Lake Valley and within the Access Road and Infrastructure Corridor, and water would be pumped to the OPA via a pipeline adjacent to SR 264 and the access road to the processing facility. Ioneer has acquired all necessary water rights, for which the points of use and/or diversion will be transferred to the appropriate locations within the Plan boundary.

The Cave Springs Road (aka Cave Springs Road-Coyote Summit) portion of the access road is a public road currently maintained by Esmeralda County that bisects the OPA. Approximately 4.7 miles of Cave Springs Road would be realigned to provide safe public access through the OPA, as well as create separation of Project components from public use (**Figure 3**). A road improvement, management, and maintenance agreement between Ioneer and Esmeralda County would be implemented prior to the construction of the Project. Additionally, approximately 0.9 miles of the Argentite Canyon Road would be realigned around proposed Project features.

Power during the construction phase of the Project would be supplied by diesel-powered generators, which would meet approved emissions guidelines and permit requirements. Once construction is complete, Ioneer intends to generate its own power for the Project with a steam turbine generator at the sulfuric acid plant. Heat and steam created as a byproduct at the sulfuric acid plant would generate power for operations. The power plant would contain a steam turbine generator, a water-cooled condenser, condenser transfer pumps, condensate booster pumps, steam bypass stations, and a let-down station. A backup diesel generator and diesel boiler would be used to power the steam turbine's mechanical parts in the event of power failure.

Personnel requirements for the approximately two-year construction period would be expected to range between approximately 400 and 500 workers, including both Ioneer staff and contracted personnel. Currently, approximately six 10-hour construction shifts are anticipated per week. Up to approximately 350 workers would be required during the operational phase of the Project, staggered in shifts. Personnel would include a mix of skilled workers plus several management staff. Operation is scheduled to be continuous, 365 days per year, 24 hours per day. In addition, a limited number of contractors would be on site to complete specified activities, such as exploration and water well drilling, and other tasks.

REFERENCES

Bureau of Land Management (BLM). 1986. Manual H-8431 – Visual Resource Contrast Rating Manual.

Bureau of Land Management Nevada (BLM) and Nevada State Historic Preservation Office (SHPO). 2014. State Protocol Agreement between the Bureau of Land Management, Nevada and the Nevada State Historic Preservation Officer for Implementing the National Historic Preservation Act. Revised December 22, 2014. Available online at: https://www.blm.gov/sites/blm.gov/files/NV%20Protocol.pdf

Ioneer Rhyolite Ridge LLC. 2022. Mine Plan of Operations/Nevada Reclamation Permit Application, Rhyolite Ridge Lithium-Boron Project, Esmeralda County, Nevada. RR30-0006-00-EN-REP-00018 REV 6. May 2020, Revised July 2020, August 2020, November 2021, January 2022, and July 2022.

National Park Service (NPS). 1983. Archaeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines. 48 Federal Register 44716. September 29, 1983. Amended.

National Park Service (NPS). 1990. National Register Bulletin. Technical Information on the National Register of Historic Places: Survey, Evaluation, Registration, and Preservation of Cultural Resources; How to Apply the National Register Criteria for Evaluation. Revised 1991, 1995, and 1997.

Nevada Division of Environmental Protection (NDEP). 2017. Facility Abandonment Closure Plans WTS-20. Nevada Division of Environmental Protection Bureau of Water Pollution Control. Revised May 2017.

NewFields Companies LLC. 2019. Geology and Minerals Resource Baseline Technical Report. Rhyolite Ridge Lithium-Boron Project, Esmeralda County, Nevada. Prepared for Ioneer USA Corporation. Document No. RR30-0006-00-EN-REP-00002 Rev 3. December 2019.

NewFields Companies LLC. 2020. Visual Resources Technical Report. Rhyolite Ridge Lithium-Boron Project, Esmeralda County, Nevada. Prepared for Ioneer USA Corporation. Document No. RR30-0006-00-EN-REP-00007. January 2020.

APPENDIX C

Public Scoping Comments

Issue Category	Organization	Comment[1]
Water resources	Individual	I am a long time resident of Dyer and am not in favor of the Rhyolite Ridge lithium operation that Ioneer is proposing. My chief concern is about water. My understanding is that Ioneer secured a lot of water rights but I do not know if the people they secured them from were historically using that much water. ie: I had rights to 500 acre feet but really was only using 200 acre feet. Ioneer bought my rights and will use the full 500 acre feet allotment. Fisk Lake Valley is very much an agricultural economy in a very arid climate. The idea of intentionally putting a massive water user into that space seems negatively impactful to me.
Supportive of project	Individual	I would like to voice my support for the Rhyolite Ridge project. Given the mandates for clean energy technologies to be adopted, projects like this that will mine the immense resources that these technologies require need to be fast-tracked. Although this federal government has used various means to deny various domestic copper projects (Pebble, Resolution, Twin Metals, namely), this pandering double mindedness from lawmakers who also mandate clean energy technologies isn't a luxury that can be afforded any longer. Additionally we're all aware of the significance of finding and development domestic resources in this time of disruptive and damaging war and sanctions. On the Tiehms Buckwheat, I'm not aware of any practical uses of it or what purpose it serves. The fight to preserve it seems to be simply for the sake of preservation itself. Or, more honestly, it's a proxy war from opposition who oppose all mining. People would do well to remember that all species, ourselves included, are ephemeral. Things are often distorted to appear permanent in the context of our short lifespans. If this buckwheat truly only exists in this location, which sounds highly unlikely to me, then it is on the brink of extinction. So we have a useless plant who's grip on survival is tenuous and ultimately short lived regardless of whether this mine is developed; and on the other hand we have a mine who's materials would give this country a big step toward resource autonomy and technologies that could be life changing. To weigh these things and pretend that they may be of equal importance is ridiculous and it's misanthropic. Its also seems like an admission that global warming isn't as dire as the federal government pretends to believe with these rapid adoption no-ICE vehicle mandates. I don't pretend there are no consequences of mining. They typically leave a legacy of a big hole in the ground. But I also know that there are consequences of a society that doesn't educate its citizens about resources, and a population that doesn't understand their value. Prosperity, higher life expectancy, decreased newborn and mother mortality, for instance, are all made possible by resources. So is breathing cleaner air. The value proposition of that trade-off is a no-brainer This is a chance for the federal govt to repair some of its reputation for talking out of both sides of its mouth and adopt a realistic adult attitude about the resources that are the building blocks of prosperous healthy societies. I'm pro-human and adamantly in favor of Rhyolite Ridge
Supportive of project	Individual	i wish to express my support for the Rhyolite Ridge Lithium-Boron Mine Project -20221220. This project with its small footprint, demonstrated effort to protect endangered plant species in the area, and low-water requirements indicates that the proponent cares about being good custodians of the land. Lithium is an important component of the global effort to decarbonize the energy sector and this project will place Nevada at the forefront of this movement.
Supportive of project	Individual	I have been aware of the ioneer Rhyolite Ridge project since 2020. I have reviewed the quarterly reports and evaluations which have documented the proposed project, its initial construction and its final proposed completed industrial complex. Based on the information put forth by ioneer, the project will initially be connected to the electrical grid and upon full implementation of the completed project will eventually not need any electrical power from the grid and will be adding to the electrical grid which would benefit the local power supply to the community. The completed facility will be self-sustaining. Based on the enclosed nature of the various stages of the processing of the lithium and boron, there will not be any negative environmental impact. The production of lithium and boron at this facility will add to the amount of these raw materials available within the United States, lessening any reliance on foreign imports. The added resource of processed lithium and boron will assist the United States production of electric vehicles which will further reduce the country's reliance on fossil fuels. I fully support this project and its intended purpose of producing needed lithium and boron which are materials necessary for electric vehicles and for the national defense.

Issue Category	Organization	Comment[1]
Supportive of project	Individual	I'm very proud of how seriously Ioneer takes the welfare of the buckwheat. I can see they have invested a significant sum of money into researching the plant. I can also see they have been able to successfully reproduce the buckwheat from seeds which is encouraging. Given America wants to secure supply of rare earth metals, the worldwide goals to stop producing ICE vehicles, the shift to solar and Ioneer demonstrating their commitment to the environment with their actions and finances I would like this mine to proceed. I believe the transparent actions of the company and the size and importance of the material for a greener future warrants the granting of the required permits. I would expect the company to be held to their environmental responsibility once permitting has been granted.
Threatened and endangered species	Individual	Mining is important but BLM should not allow it to cause an endangered plant species to become extinct. There should be a generous buffer zone between these plants and the mining operations. There should also be careful ongoing monitoring to ensure that these plants are protected. Thanks for considering my scoping comments.
Supportive of project	Individual	I am a shareholder of Ioneer Pty Ltd. I thought I would put this out there to start just so I can have an open honest post about this subject. One might now conclude that because I have a financial interest in this project that my point of view will be 100% in seeing this project get the go ahead so I see investor return. I was a holder of Ioneer before it was Ioneer trading on the ASX exchange as GSC - Global Geoscience. The company announcements back in 2018 for investor presentation showed first production mid 2021. Yet here we are at the conclusion of 2022 with no project, no production and a mine that is still in Limbo primarily over one reason. The Tiehm's Buckwheat plant. I write today to finally get a say in the matter as there has been a lot of noise around this project and whether or not it should get approval. I would like to firstly ask US FWS and Centre for Biological Diversity a question. As they are the experts in dealing with the current climate crisis and extinction issues. How many species of plants, insects, animals or other are extinct every day due (in part) to the carbon emissions from current transportation systems that a growing population of people are using? This in turn is impacting on air quality, noise pollution, fuel dumped on roads or through offroad tracks from exhausts some ending up in water ways. The world is changing, people are aware, including myself of the current environmental situation we as all humans face in the years to come. I have a daughter, what sort of world do I want her to receive from my hands? Ioneer is a company transitioning towards "greener" energy. Now I know no mining is clean and pollution free. But until we can come up with a groundbreaking idea on how to solve all our energy issues with no impact on the environment, we can only do what we can do. Electric vehicles have scientifically been proven to produce less Co2 emissions over their life of use. They produce less noise pollution, they dont dump fuel on roads or on tracks that can end up in our waterways. I also ask why the US FWS and Centre for Biological Diversity dont work harder with Ioneer. This should not be a my way or the highway scenario here. Ioneer has been extremely accommodation. They believe they can ensure Tiehm's survival and operate the mine at the same time. They have contributed $1M dollars to a full time botanist and onsite green house. Yet any media I see from US FWS and CfBD seem to just be pummeling Ioneer as a villain. We as a species are different to many others, we can show empathy and external thought processes towards other people or animals/plants/life. We need to work together on this issue. If not its our children who will suffer and our children's children. Now end of the day, if this mine doesnt go ahead. I am left out of pocket and disappointed at my only US investment. I may never invest in USA again. I certainly never held any respect towards the previous president who conducted a Critical Minerals Act 2016 and who found a mine from exploration to production in the US takes 10 years on average. An average that is far higher than most other developing nations across the globe. But I certainly agree with him on this point. How long do we sit on our hands with no other option on the table? We can humm and harr until the cows come home but end of the day. Actions speak louder than words and without progress we will see no innovation in the field of lithium or other benefits it might have to both humans and the planet. We need to act now with the technology we have now. We dont have the technology to extract energy from sand with no waste or not energy consumption and at no cost to the environment. If we did we would already be using it. So I conclude with a, look at the big picture here. How many more species will go extinct before we decide to make a move? Lets all work together as we all live here. Share ideas, be accomodating, work with others and not against them. Be kind!
Supportive of project	Individual	I am both an avid environmentalist and an investor in Ioneer. I have been extremely impressed with how ioneer have gone about developing strategies to ensure the ongoing survival, research, propogation and future funding of Thiems Buckwheat.

Issue Category	Organization	Comment[1]
Supportive of project	Individual	the Rhyolite Ridge Lithium and Boron deposit is a unique opportunity for the US to secure critical minerals for the upcoming energy and transportation transformation. To the best of my knowledge the Ioneer team went to great length and committed to preserve and further cultivate the Thiem's Buckwheat population. I truly believe that a fruitful co-existence between the operating mine and the Thiem's Buckwheat population is achievable and that Ioneer efforts will save the Thiem's Buckwheat population from extinction due to climate warming. I respectfully ask that you approve the plans of operations for the Rhyolite Ridge project.
Supportive of project	Individual	I support development of this project. I feel Ioneer has put forward a lot of resources to give the Buckwheat the best chance for survival while providing materials for the needed green energy transition.
Supportive of project	Individual	The world is burning and there is a pressing need for Lithium to be used in Batteries. My understanding is that the biggest risk to Thiems Buckwheat is rodents and that the Australian Company Ioneer has invested a lot of money and resources in trying to protect the buckwheat. Any delays to this project have a massive knock on effect in terms of local employment, reducing emissions, securing domestic supply of critical minerals for the United States and improving the competitiveness on the global stage of American manufacturing. I have been heartened with how Ioneer have gone about developing strategies to ensure the ongoing survival, research, propogation and future of Thiems Buckwheat and can see no pressing reasons not to approve this mine and all the benefits that go with it.
Plan of Operations, Threatened and endangered species	Individual	With the Buckwheat being labeled an endangered species and a 500 meter exclusion zone being enacted around it how does Ioneer plan to deal with the plant in the middle of its pit? How will they mitigate dust from trucks that might hinder the plant? Normally I would say that the environmental concerns are bogus such as Sage Brush claims against Thacker Pass but in this case the claims are valid. 10 acres for a plant that wants poor soil and a very narrow elevation does not give me confidence it will survive is the local environment changes. Additionally, per Wildlife and Fisherys decision we see that 38% of the plant could be destroyed if the mine is allowed to continue even in its modified form. ""We have considered and incorporated the 2022 revised PoO, which includes indirect impacts to individual plants and proposed loss of 38 percent of critical habitat, into our analysis, and we find that the threat of mining continues to be of such magnitude that taken in combination with other threats described in this rule, Tiehm's buckwheat is in danger of extinction throughout all of its range. This final rule reflects the best available information that existed at the time we made this final determination." This project should be denied at best and at worst given severe restriction to project the Buckwheat. A 1 mile exclusion zone might be proper to protect the plant. While unfortunate for the company plenty of lithium exists elsewhere in the USA.
Supportive of project	Individual	I am an investor in Ioneer and strong supporter of ESG policies. I have been extremely impressed with how ioneer have done about developing strategies to ensure the ongoing survival, research, propagation and future funding of Thiems-Buckwheat.
Supportive of project	Individual	I am an avid environmentalist and as a result believe in the need for supply of critical minerals such as lithium in order to fuel the electricifiation of the US economy. I have been extremely impressed with how ioneer have gone about developing strategies to ensure the ongoing survival, research, propogation and future funding of Thiems Buckwheat.
Supportive of project	Individual	We support this project based on the submission and information provided. With Ioneer's focus (via funding and strategic commitments) on both the environment and what is best for the American people, this is a project that needs to be delivered sooner rather than later. The project once delivered is great for local and domestic job market, excellent for the move towards a more sustainable source of energy and reduces our reliance on China. This is complimented with the significant focus put on air, water and other environmental factors in the region. I see nothing but upside with this project keeping in mind the Thiems buckwheat has been fully catered for.
Supportive of project	Individual	I simply want to voice my support for the Rhyolite Ridge Lithium Project. If there is a National need for lithium, then this project should be allowed to develop. Our society needs minerals and the only way to obtain them is to mine them. Thank you for the opportunity to comment.
Plan of Operations, Threatened and endangered species	Individual	How will Ioneer deal with the 500 meter exclusion zone given by the endangered species act given its impact on the quarry and overburden storage site? What pollinates Tiehm's Buckwheat and what is the impact upon these species? Will a 1 mile buffer be considered?

Issue Category	Organization	Comment[1]
Supportive of project	Individual	My name is Jonathan Price. I am the Nevada State Geologist Emeritus. I served as Director of the Nevada Bureau of Mines and Geology, a research and public service unit of the University of Nevada, Reno from 1988 to 2012. I am a Past President of the Society of Economic Geologists and of the Geological Society of America. I have published articles on trends in global mineral resources and on lithium resources. I hold a Ph.D. in geology and am a Certified Professional Geologist with the American Institute of Professional Geologists. Demand for most mineral resources is at or near all-time highs, partly due to the global rise in population and partly due to improving standards of living for many people worldwide. This is true for both lithium and boron. In the last two decades, China has become the leading producer of many more mineral commodities than any other country and has become the primary supplier of many products made from mineral resources, including such items as solar panels and high-strength, rare-earth-element magnets used in wind turbines and electronics. China is also the world leader in the production of lithium-ion batteries, lithium chemicals, and electric vehicles. The U.S. needs more mining of lithium and production of lithium chemicals needed for batteries to secure our own supply chain. Although China is the leading producer of many mineral commodities and the primary supplier of many products made from mineral resources, it imports both lithium and boron. Demand for lithium, particularly in electric and hybrid vehicles, and boron, which, among other uses, is needed for the high-strength magnets, is likely to be strong for the foreseeable future. Domestic production of mineral resources helps to provide security for the economy and for national defense. Production in Nevada helps the State's economy with jobs and taxes. The Rhyolite Ridge Project will add significantly to domestic resources of both boron and lithium. Ioneer has done excellent work to develop and implement a plan for the conservation of the Tiehm's buckwheat during the company's exploration program. The company's conservation plan and ongoing research on preserving the plant (including seed collection and successful growth of seedlings) during proposed mining will do more to protect Tiehm's buckwheat than the alternative of leaving the lithium-boron deposit unmined and unprotected from such hazards as rodent predation, wildfires, and climate change. The company's commitment to conserving this plant is highly commendable. Thank you.
Supportive of project	Individual	Climate change is real, it is time we save the entire world by stopping these delays in critical Lithium projects. The rare Tiehm's buckwheat was decimated by a rodent attack, not by miners. ioneer has publically committed to protect this rare species, and in fact it has a better chance of survival being monitored alongside the mine than if the property was just fenced off and left to chance. The future of electric vehicles is too important to be stopped by small but vocal groups of activist. Please stand up for the quite majority that supports a green future with electric vehicles.

Issue Category	Organization	Comment[1]
Supportive of project	Individual	Rhyolite Ridge Mine is vital for the Planets reduction in carbon emission. Lithium and boron mines need to start their activity to be able to supply the demand for this resource. The manufactoring and industrial sector are waiting inline to be supplied the product they need to achieve the goals set by the UN Climate Change Conference (COP21). Currently there is not enough supply to be able to keep up or meet with about 5% of the demand. The supply is being held up by the same Governments who are imposing goals. The manufactoring and industrial sector is choking with a looming recession overhead. Lithium and boron will allow their future plan to operate and save and provide millions of onshore jobs. This will reduce or if not prevent a recession. The subject of Eriogonum tiehmii "Tiehm's buckwheat" is simple. Without the mine, the buckwheat will fail to survive. Ioneer can and currently are providing the species last hope of survival. If Ioneer are refused permit, who will mantain the adequate funding required to continue its rejuvination process. By the time government approve what would be miniscule of current funding supplied by Ioneer. The plant most likely would perish. The mine will run off grid and a planning process is underway to pump large amounts of unused steam generated energy back into the grid which is also reducing the (COP21) target goals. Rhyolite Ridge Mine is vital to Earth's and Eriogonum tiehmii "Tiehm's buckwheat" future existance. Also will play a vital role to The United States of America's economy
Supportive of project; Threatened and endangered species	Individual	I would like to voice my strong support for the proposed lithium - boron mine at Rhyolite Ridge in Esmeralda County. America is in dire need of locally sourced critical minerals the development of which has been historically stymied by poor planning and authority permitting process. America can not rely on foreign imports of critical minerals much of which is sourced from China. These minerals and the process of converting a national fleet of combustion engines to EV's are vital in the process to halt climate change. I am familiar with the habitat of Thieme's Buckwheat that is situated in the vicinity of the mine site and have read the proposed mine operators plans to mitigate impact to this population. I believe that the plan is suitable to preserve the ongoing survival of this species and have been shocked by some of the misinformation spread by groups which purport to act the interest of the plant which is unlikely to survive continuing drought and rodent attacks without significant investment which to date has not been proposed or provided by anyone other than Ioneer. Ironically If the mining permit is not approved the species will likely become extinct and as such the mine and it's associated preservation efforts are likely to be the plants best hope of survival. The mine will bring much need, good paying, inter-generational employment opportunities to the County. I ask that the Bureau approve the proposed mining permit without delay for the betterment of America's supply chain, national security, the Buckwheat and the local community.
Supportive of project	Individual	As a 45 year nv. resident I would like have you turn your attention to the following article by JONI EASTLY dated Dec.26, 2022 https://elkodaily.com/opinion/columnists/commentary-tell-blm-about-the-importance-of ioneer-project Her commentary on this project is completely in line with my thinking on this project. She presented many very good reasons why this project should get a green light to start development. I, too, am a devout environmental protection person who strongly believes that we need to produce clean energy in the future before it is to late. Along with the fact that we, as a nation, should be doing all that we can to help our future generation to live a happy, healthy life. Of course, the added benefit of this project is to have a supply chain for critical components within the USA. Nevada, in the past, has had a turbulent relationship with the mining industry both good and bad. I truly believe that IONEER will be a good steward for the land and protection of the buckwheat plant population.

Issue Category	Organization	Comment[1]
Supportive of project	Individual	Please refer to the attachment, an op-ed I wrote that received wide distributions in newspapers around Nevada. I appreciate the opportunity to comment, and am a staunch supporter of this project. Like many frontier Nevada communities, Tonopah is often either overlooked or dismissed as the midway point between Reno and Las Vegas. As a former Nye County Commissioner and current member of the boards of directors of both Nevada Rural Housing Authority and Rural Nevada Development Corporation, I am continually reminded of the tendency to overlook frontier communities and have dedicated my career to amplifying frontier voices and taking stands on issues that directly impact us. This brings me to Dyer, Nevada, located within Fish Lake Valley (FLV). Dyer is about 40 miles southwest of Tonopah along the White Mountains in Esmeralda County. This lovely little community is steeped in rich, natural resources and populated with resilient locals who love their town. Recently, FLV has been the epicenter of a national conversation regarding lithium mining. An emerging lithium-boron producer, Ioneer Ltd., is working to develop a lithium and boron quarry and production facility at nearby Rhyolite Ridge, which holds the largest-known lithium-boron deposit in North America and is one of only two known deposits in the world. Although Dyer, like Tonopah, is often overlooked, her residents are now centerstage in the nation's quest for lithium. Besides bringing major economic benefits to Dyer, Esmeralda County, and the region at large, the Rhyolite Ridge Lithium-Boron Project can produce enough lithium to power 400,000 electric vehicles per year, thereby paving the road to a sustainable future. Since China currently produces the vast majority of refined lithium materials, this project will also reduce our dependency on foreign imports.
Socioeconomics and environmental justice	Individual	Central Nevada faces an overwhelming number of challenges from quality education to healthcare and housing – increased economic development is the path towards improving these conditions. The Rhyolite Ridge Project will revitalize FLV and the surrounding communities by creating hundreds of quality, family-sustaining jobs, promoting local spending by Ioneer employees and fostering a rich environment for business start-ups. FLV residents have been largely supportive of the Project, but the voices of those most directly affected are being drowned out by a small, incredibly vocal minority. If you have lived in a frontier community, you've seen it happen again and again.
Threatened and endangered species	Individual	So, with all these benefits, what exactly is the hold-up? Well, it's a little flower called Tiehm's buckwheat. This recently discovered species is found only in the Silver Peak Range, and environmental groups like the Center for Biological Diversity (CBD) have been fighting tooth and nail to halt progress on the Rhyolite Ridge Project because of it. This unnecessary fight has drained financial resources and impeded development that would greatly benefit the Central Nevada region. In response to concerns regarding Tiehm's buckwheat, Ioneer has invested considerable resources into the stewardship of the species and is working in coordination with the Fish and Wildlife Service (FWS) and the Bureau of Land Management (BLM), along with academics and scientists, to develop the best understanding of the species and prove it can be successfully managed alongside Ioneer's planned operations. To this end, Ioneer redesigned its mine to avoid all direct impacts to the buckwheat, hired a full-time botanist, and built a dedicated greenhouse to grow it. If the Project never comes to fruition, who else would invest the funds needed to protect a plant that is already threatened due to drought and natural predators? Would the state or federal government do it? Would CBD or any other non-governmental organization do so? Think back to how many times our area has been overlooked and dismissed, and you have your answer.
Supportive of project	Individual	Despite the best efforts of opponents over the past three years, I remain committed, alongside Ioneer, to amplify local voices and advocate for development that will improve our chances for prosperity and create new avenues to succeed. I have personally known Ioneer to be a meaningful community partner that supports our causes, works with our local officials, and displays complete transparency. I encourage all citizens of Tonopah, Fish Lake Valley, Goldfield and the broader region to submit a letter of support to the BLM as it's now open for public comment. Local voices need to be heard – not those of a small minority who would encourage others to once again overlook and dismiss our communities when our needs are so great.

Issue Category	Organization	Comment[1]
Supportive of project	Tonopah Development Corporation	I am the Chair of Tonopah Development Corporation dba Tonopah Main Street. Tonopah Development Corporation is dedicated to improving the quality of life and revitalizing the business climate while preserving our unique, historical past. Tonopah is a frontier town with strong community involvement ready to meet the challenges of the future. Our biggest challenge is supporting and maintaining an environment in which all businesses have meaningful opportunities to improve the quality of life for our residents and the region at large. We have looked at the proposed Rhyolite Ridge Project and are enthusiastic supporters. Many of our members and sponsors have personal experience in the mining industry and are very familiar with the lengths to which the company has gone to protect the Tiehm's Buckwheat. We believe, as do the majority of people in Tonopah, that the advancement of their project provides the best way possible for this plant to propagate and flourish. Additionally, the opening of this mine will not only increase revenues for our local businesses, it will create opportunities for new businesses that do not exist now. We have had the opportunity to work with Ioneer Mining on several different community initiatives and have found them to be open, transparent, and excellent partners who share our vision for the region. We do not expect this to change if the Rhyolite Ridge Project is approved and the mine opens.
Supportive of project	Rotary Club of Tonopah	I am president of Rotary Club of Tonopah, which is part of Rotary International. Rotary, through its many thousands of clubs, provides service to others, promotes integrity, and advances world understanding, goodwill, and peace through our fellowship of business, professional, and community leaders. During one of our recent luncheon meetings, we discussed the proposed Rhyolite Ridge Project and whether or not we should submit written comments in support of such a project. The answer was a unanimous “Yes.” Many of us either work in the mining industry now, have worked in the mining industry, or have family members or friends who currently work in the mining industry. We know first-hand how generously mining supports the frontier communities in the regions where they are located. We are quite aware of the concerns regarding the Tiehm’s Buckwheat, but in studying information they have made available, we are convinced that lithium mining and buckwheat can co-exist to the benefit of the buckwheat, and are fully supportive of this project.
Socioeconomics and environmental justice; Supportive of project	Individual	Esmeralda County consists of three main communities – Fish Lake Valley, Goldfield and Silver Peak. To the uninitiated, the differences between these three locales may appear insignificant, but that couldn’t be farther from the truth. Each community has formed their own distinct culture and values. Each community has a unique set of strengths that set us apart as well as a unique set of challenges that we must confront. However, there is one thing every Esmeralda County resident can see eye to eye on – we want progress for our communities without sacrificing our peaceful way of life. As a longtime resident of Fish Lake Valley and a former Esmeralda County Commissioner, I can attest that progress is on the horizon thanks to Ioneer’s proposed Rhyolite Ridge Lithium-Boron Project. The devastating repercussions of the COVID-19 pandemic left our community in desperate need of revenue to revitalize our public services and boost small businesses. Ioneer’s proposed operations will infuse Esmeralda County and the greater Central Nevada region with a much needed economic boost. When Ioneer first began exploring in the area over a decade ago, we had our reservations, even with the enticing prospect of economic development. Was this another instance of some faceless corporation trying to exploit our resources and disrupt our lives? Ioneer needed to prove they were committed to fostering prosperity not only for their shareholders but also for the Fish Lake Valley community at large. I’m here to say that Ioneer has done just that. The company has hosted countless open-forum meetings, encouraging feedback from locals and sharing updates with complete transparency. We have developed a strong relationship based on trust and mutual respect, and we have embraced Ioneer as a community partner rather than some corporate adversary. They are as committed to progress as we are.

Issue Category	Organization	Comment[1]
Threatened and endangered species	Individual	Despite receiving the seal of approval from locals, Ioneer still faces a series of obstacles preventing the completion of the Rhyolite Ridge Lithium-Boron Project. According to the Center for Biological Diversity (CBD), an anti-development NGO, Ioneer's proposed operations endanger a plant called Tiehm's buckwheat. Prior to CBD's declaration that the buckwheat is in critical danger, you'd be hard pressed to find a single Fish Lake Valley resident who had even heard of the plant. Comprehensive studies have shown time and again that there are many natural threats to the plants and that Ioneer's proposed operations pose no direct impact. We know the company has been investing money in research and working diligently to offer the species its best chance of not just survival, but expansion. We can appreciate the importance of preserving our delicate ecosystems, but we will always put the needs of our community before the interests of an NGO that has never even bothered to engage with local residents, unlike Ioneer. If Esmeralda County wants to see progress for our communities, join me in voicing your support for the Rhyolite Ridge Lithium-Boron Project.
Water resources, Wildlife and special status species, Threatened and endangered species, Visual resources	Individual	I am a long term resident of Dyer. I do not support the Ioneer Project at this time. There are too many unanswered questions for me to be conformable with their project. For a small economic benefit to Esmeralda County, the sacrifices of water resources, biologic diversity, scenic diversity, seem too high. Nevada Division of Water Resources has already identified this water basin as one in severe decline. The year round water demands from Ioneer would impact the basin negatively. There is also concerns about aquatic life that are yet unanswered. The Cave Springs area is home to bighorn sheep, wild horses, deer, antelope and chuckar. Threatened plants have also been identified. I'm certain there are questions about bi state sage grouse as well. The area is a beautiful place for people to enjoy seeing the mountains and cliffs as well as wildlife. Natural landscapes are becoming rare as it is. I am also a business owner. It is hard in our area to recruit employees. Adding Ioneer will make it even harder to retain a good employee. Again, there are too many unanswered questions to endorse the Ioneer project.
Supportive of project; Socioeconomics and environmental justice	Individual	I just completed a four year term as Esmeralda County Commissioner for District 1, Goldfield. Esmeralda County is the least populated, poorest county in the State of Nevada. The population of the county continues to dwindle and without an injection of people and industry, the county will soon reach a point where its citizens can no longer financially support the cost of running a county. We do not have a lot of natural resources to attract business/industry to our remote location. This is why I was so excited to hear about the lithium deposit. Esmeralda County finally has discovered a natural resource that will not only allow it to survive, but to thrive! Unfortunately, the environmentalist from out of state, most who have never stepped foot in our county, have claimed this development will harm a plant that appears to only grow in areas where mining has previously occurred. These environmental groups have not prooven that these plants have been created by the mining activities. They have also, made no effort to engage and work with the county or its people. During the past four years, not one person against this project has appeared before the local county government or held a town hall meeting for local citizens. Why do these out-of-state environmentalist, who have not even physically toured the site, appear to have more power than the people who live here. This is a clear infringement on our right to life, liberty, and the pursuit of happiness. When will our state/federal government listen to the people who live here and not the out-of-state environmentalists, most who have never been to Esmeralda County? This county needs to this development to survive. This state needs to this development to diversity its economy. This country needs this project to become less dependent on foreign lithium suppliers/governments. This earth needs this development to reduce its reliance on fossil fuels and to reduce its carbon footprint from combustion engines. These environmental groups offer NO support in the way of resources to protect this plant. The ONLY group who has stepped up and offered resources has been Ioneer. Without developing the Rhyolite Ridge Lithium-Boron Project, and allowing Ioneer to help, this county and this plant will die!

Issue Category	Organization	Comment[1]
Supportive of project	Individual	I fully support the project. This country need lithium for batteries so that we can go green. This will have a huge positive impact on climate change.
Supportive of project; Climate change	Individual	I support this project. Lithium is critical to addressing climate change. The company is doing a good job addressing the threatened buckwheat and reducing water use. The llithium deposit is large. Using it benefits the human race and it's a financial boon for the county and state as they will both benefit financiall
Alternatives; Water resources; Transportation and access; Visual resources	Individual	We can't have a pipeline running from Dyer out to the mine site. This will very likely dry up domestic wells in the valley . We already have this problem with the farms except the farms don't pump in the winter so the aquifers recharge.Also SR 264 will not handle over a 100 trucks a day. This highway is not even up to standards width wise in places. 24 ft is required but the roadway is only 21 ft. I places and only 2 inches thick or less. The Gap springs road out to SR 773would keep traffic off of SR 264 and on Federal highways.. The light pollution will be a secondary problem also. Ioneer hasn't been upfront to the residents of Fish Lake Valley especially on the pipeline they just now told us about. More research needs done to protect our community.
Supportive of project; Climate change	Individual	The Rhyolite Ridge Project should be approved. The world needs the lithium to help us deal with the climate crisis.
Out of scope; Transportation and access	Individual	As a concerned citizen,& current land owner for over twenty five years. Plus from a family that's been in the valley since, my family drilled the first water wells for White Mtn.Ranch. I would like to know about any environmental impact studies? Example number one 5 miles away(silver peak)! Example two, the billions of dollars LACOUNTY, is paying for their mistake in Owens valley. And third, they have no where near the water rights to even accomplish their goal, so something will give somewhere,& that's where the community will suffer. We have no infrastructure to support nor regulate their such of project. They can even get their equipment through the state hwy, or off of it. Cart way before the horse. Should save millions and move to Gerlach Nv.
Opposed to project	Individual	I've been living in Fish Lake Valley for over 60 years. This is a closed water basin. I do not want it altered. I want to be able to drive to see Esmeralda County 's mountains, wildlife, and ranches. I feel that this mining project will not allow me to visit the the places I love. I believe that our water belongs to Dyer. I don't support the project at this time.
Opposed to project	Individual	I am opposed to this project. As a farmer, hunter, and resident I believe that the Rhyolite project will disrupt our Valley and our lifestyle. We have lowering water table, rough roads and pressured wildlife. More traffic means less peace and quiet .
Threatened and endangered species	Individual	Please save the endangered plants. Extinction is forever. We need responsible lithium mining. But it should be done to prevent extinction. Adequate buffers should be required that prevent dust on the plants and protect their pollinators. Cattle should also be completely removed from this area as they threaten the plants. I hope that BLM can successfully design this project so that responsible mining and endangered plant population can be achieved together. Thanks for considering my input.
Supportive of project	Individual	We are business owners and have been residents of Nevada for more than 36 years. The ability to produce critical minerals, including lithium, within the United States is essential to our national security. The United States is increasingly dependent on foreign sources for the processed versions of many of these minerals. Unfortunately, some of these foreign sources, e.g., China, cannot always be depended on to supply the critical minerals, like lithium, that we will need to achieve our goals for a healthier environment. This includes, of course, lithium for the batteries to power electric vehicles which produce virtually no pollutants. The refined lithium chemicals which will be produced at Rhyolite Ridge will be immediately available for use by battery makers. Furthermore, the production facility will also produce very large quantities of borates, which is significant because, like lithium, boron is a vital material for clean technologies and environmental sustainability. the Rhyolite Ridge Project is significant in both scope and scale. The project will be designed to produce 22,000 tons of lithium chemicals annually which will quadruple domestic lithium production and be sufficient to power approximately 400,000 electric vehicle cars per year for decades to come.

Issue Category	Organization	Comment[1]
Socioeconomics	Individual	As long-time Nevada business owners, we appreciate the importance of economic development, especially in rural communities. We also understand that it is not just about jobs directly created, but also indirect economic activity to service the needs those employees and the project. In short, investment spurs further investment. Successful development of large, generational projects like Rhyolite Ridge will encourage business owners like us to make further investments in Nevada. Rhyolite Ridge will provide important economic benefits for the local region, the State of Nevada, and the United States more broadly. Ioneer is focusing on local, regional, Tribal, and state businesses to execute its large-scale industrial project. Regional and state contractors have already been involved in the procurement process. Local and Tribal businesses will also naturally benefit from construction activity and other downstream economic development opportunities. Potential opportunities include hotels, B&Bs, lodging, restaurants, hardware stores, staging yards, waste disposals, and transportation needs. The Rhyolite Ridge Project will create family-supporting jobs in rural Nevada, employing 250-300 people while the mine operates, and 400-500 people during the construction phase with median total annual compensation levels of approximately $141,000. Once in operation, Rhyolite Ridge is expected to generate between $13 million and $31 million in annual fiscal tax revenue for state and local governments. Ioneer has conducted outreach with neighboring Tribal Nations to discuss community benefit opportunities. The Project will thus provide important and sustained economic development opportunities for the community in addition to substantial tax revenue to this economically challenged region of Nevada. For all the reasons stated above, we want to express our strong support for the Rhyolite Ridge Lithium-Boron Project and believe the BLM should move forward with an expedient preparation of the Environmental Impact Statement for this project. Thank you for your careful consideration.

Issue Category	Organization	Comment[1]
Supportive of project	Individual	I am writing this letter in support of the Ioneer Rhyolite Ridge project ("RRP"). I am a local resident and not an employee of or nor compensated by Ioneer in any way and have worked as a geothermal exploration geologist throughout the western U.S. and Hawaii for nearly 50 years. In 1981 I began working on geothermal projects in northern Fish Lake, Clayton and Big Smokey Valleys and have resided in Fish Lake Valley for over 20 years. The Ioneer Rhyolite Ridge project ("RRP") is a truly amazing and possibly a one-of-a-kind resource that has been hiding in plain sight for many years. Over the past 100+ years various borax exploration efforts including drilling, road construction, digging exploration trenches, prospect pits, access roads and a small open pit mine are located in immediate area. Man made disturbance occurs throughout the area, including the proposed mine site. During the 1980's, U.S. Borax undertook extensive drilling (over 50,000 vertical feet) across the area and near the proposed Ioneer project. According to U.S. Borax, drilling defined the second largest borax deposit in the U.S. and elevated lithium values. However, there was no economical method to extract the borax and USB gave up on the project. The USB drilling also defined a commercial geothermal resource a few miles north of RRP. While working on various geothermal projects in the area I followed the Ioneer exploration and over the years got to know the project and personnel quite well. This unique project will produce large quantities of lithium carbonate and boric acid, critical to providing pollution free energy and other vital commercial applications. Currently, the vast majority of lithium used in the U.S. is mined in foreign countries and processed in China. While China actually mines very little lithium, they have most of the lithium processing facilities and have also purchased numerous foreign lithium mining operations. Unfortunately for America, China presently controls the world-wide lithium market. Given the major benefits the RRP can provide to the American goal of pollution free green energy, I believe it is vital that the RRP be approved and put into production as soon as possible. The RRP has an amazingly small disturbance footprint for the amount of lithium carbonate and boric acid to be produced over the next 40 years. By comparison, the Albemarle lithium operation located to the east of the RRP produces approximately 5,000 tons of lithium carbonate per year by pumping millions of gallons of ground water per day into over 10 square miles of saline evaporation ponds which kills significant numbers of migratory birds each year. While I was working on geothermal projects in the Clayton Valley area from 2000 – 2010 Albemarle was pumping approximately 20,000 acre feet of water per year with plans to double the pumping rate in the future. The 40 square mile valley, which was a shallow lake and wetlands, prior to lithium production in the 1960's, is now a dry, barren alkali basin resembling a moonscape with frequent dust storms. The water table has been lowered over 100 feet in many areas and continues to drop, creating large and dangerous subsidence features. Other lithium producing projects in Argentina and Chile use similar brine pumping processes in saline basins with similar destructive results. By contrast, the proposed RRP hard rock mine will have a total disturbance footprint of about 11 square miles including access roads and infrastructure corridor and produce about 22,000 tons of lithium carbonate per year in addition to large amounts of strategic boric acid. Total water usage will not exceed 4,000 acre feet per year. Ground water in the Fish Lake Valley hydrologic basin is vitally important to myself and other local residents. Ioneer has acquired existing water rights in the Fish Lake Valley basin so there will be no additional ground water pumping in the basin. Finally, an environmental group is continuing to use a small patch of Tiehm's buckwheat as an issue to prevent the RRP from moving ahead. The Tiehm's buckwheat is a slight variant of the common buckwheat which can be found through the desert west and consists of many dozens of other minor variants. I believe Ioneer has made an exceptional good faith effort to mitigate damage to the buckwheat while allowing the mining operation to proceed. I see no reason the buckwheat and the RRP cannot co-exist. For the benefit of the residents of Esmeralda County, the state of Nevada and the national goal of green, pollution free energy I urge you approve the Ioneer Rhyolite Ridge Project without further delay!

Issue Category	Organization	Comment[1]
Opposed to project	Individual	The applicant has reportedly already violated the requirement to avoid disturbing the area with endangered plants. BLM has reportedly already allowed domestic livestock into this area and thereby jeopardized the endangered plants. Have those responsible been held accountable? What mitigation has been required and occurred to compensate for these adverse impacts? The NEPA analysis won't be credible if the applicant and BLM can do whatever they want without any meaningful accountability. It is sad when you can't trust a federal agency to do what is right to protect endangered plants on public lands. Yes, we need lithium. But that should not excuse the applicant or BLM from playing by the rules.

Issue Category	Organization	Comment[1]
Supportive of Project	Nevada Mineral Exploration Coalition	Introduction The Nevada Mineral Exploration Coalition (NMEC) is submitting this letter in response to the BLM's solicitation for scoping comments on the Rhyolite Ridge lithium-boron project. These comments highlight three positive impacts to be afforded by the project: contributing to the establishment of a robust, domestic lithium supply chain; stimulating the economy of the Fish Lake Valley region through job creation and public revenue impacts; and facilitating the conservation of the endangered Tiehm's Buckwheat plant. The NMEC is a grassroots coalition of individuals and small businesses who make up the exploration, research, and development segments of the mining industry. Our goal is to promote and preserve the natural resource exploration industry of Nevada and the Western US. NMEC members use state-of-the-art science and technology to search for and develop the natural resources in the areas where we work and we generate jobs, economic activity and considerable tax revenues. We bring in new capital, commonly from out of the country, all of which is spent domestically. We find the mines of the future, ensuring the long-term economic well-being of Nevada and the Western US. Rhyolite Ridge will Bolster the United States' Critical Mineral Supply Chains Although the demand for lithium, a critical mineral used in the manufacturing of lithium-ion batteries, is set to increase 500% by 2050 , the only production of this commodity in North America is from Albemarle's Silver Peak brine operation in Esmeralda County, Nevada . While domestic projects in the production pipeline have been beset by legal challenges and permitting delays, the United States remains a net importer of lithium[2], posing a serious hurdle to the Biden administration's goals of curtailing carbon pollution and emerging as a global leader in clean vehicle manufacturing[1]. As the second lithium-producing operation in the United States and the first Boron producing operation in Nevada, the Rhyolite Ridge project will contribute greatly to strengthening domestic supply chains and facilitating the renewable energy transition. According to the U.S. Geological Survey's 2022 Mineral Commodity Summaries[2], the United States relied on imports for >25% of lithium consumption between 2017 and 2021, a dependency on foreign products that can only be expected to increase as the demand for lithium quintuples by 2050. Eight percent of lithium imports over this period came directly from China or Russia, and 91% came from Chile or Argentina, where the importance of Chinese trade and magnitude of Chinese investment have increased exponentially in recent decades[3]. Thus, virtually all lithium imports into the United States came from competing global superpowers or regions decidedly within their sphere of influence, constituting a serious supply chain concern that can only be resolved by advancing domestic lithium deposits, such as Rhyolite Ridge, into production. As one of the two major lithium-boron deposits that exist on Earth , Rhyolite Ridge is a unique geological occurrence that affords a remarkable value proposition to the American people. Lithium-boron mineralization is hosted within ancient lake beds that were deposited in an enclosed basin within a tectonically active region, a set of conditions that is only preserved at specific times and locations within the geologic record, and very rarely results in the formation of economically valuable ore deposits. Once in operation, Ioneer estimates that Rhyolite Ridge will produce > 20,000 metric tons of lithium carbonate equivalent per year—significantly more than the annual United States consumption between 2017 and 2021—for the entire 26 year mine life[4]. When viewed through a geological lens, such a deposit is a veritable needle in a haystack, and through a societal lens, a prolific natural resource capable of delivering the United States into an era of reduced carbon emissions. To mineral exploration geologists who truly appreciate the value and scarcity of deposits like Rhyolite Ridge, there is no question that Ioneer should move the project toward production. [1] https://www.whitehouse.gov/wp-content/uploads/2022/02/Capstone-Report-Biden.pdf [2] https://pubs.usgs.gov/periodicals/mcs2022/mcs2022.pdf [3] https://rb.gy/ewv9pw [4] https://www.sec.gov/Archives/edgar/data/1896084/000114036121040692/filename5.htm

Issue Category	Organization	Comment[1]
Socioeconomics and environmental justice	Nevada Mineral Exploration Coalition	Mining will Provide Local Jobs and Stimulate Economic Growth Beyond strengthening American critical mineral supply chains, mining at Rhyolite Ridge will positively impact the Fish Lake Valley region by promoting economic development and creating long-term, high-quality jobs. According to Ioneer's website, benefits will include state and local public revenue impacts of 15-25 million USD during the mine's construction period and 13-31.5 million USD per annum during production. Moreover, Ioneer expects to employ 400-500 people during the construction period and 250-300 people during production with median compensation levels of well over $100,000 per year. As Esmeralda County is currently inhabited by fewer than a thousand people, this clearly constitutes an excellent opportunity for local residents to obtain well-paying and stable employment. Joni Eastly, a resident of Tonopah, NV, who sits on the board of commissioners of the Nevada Rural Housing Authority and is a former Nye County Commissioner, sums up the economic benefits afforded by the Rhyolite Ridge project in a commentary published in the Elko Daily[5]: "Central Nevada faces an overwhelming number of challenges from quality education to healthcare and housing – increased economic development is the path towards improving these conditions. The Rhyolite Ridge Project will revitalize [Fish Lake Valley] and the surrounding communities by creating hundreds of quality, family-sustaining jobs, promoting local spending by Ioneer employees and fostering a rich environment for business start-ups. [Fish Lake Valley] residents have been largely supportive of the Project, but the voices of those most directly affected are being drowned out by a small, incredibly vocal minority." [5] https://rb.gy/lzq5sh
Threatened and endangered species	Nevada Mineral Exploration Coalition	Mining at Rhyolite Ridge will Facilitate the Conservation of the Endangered Tiehm's Buckwheat Plant Over the course of mineral exploration and development activities at the Rhyolite Ridge project, Ioneer has demonstrated great commitment to the responsible management of the Tiehm's buckwheat population, as well as flexibility in the wake of evolving government mandates surrounding it. In Ioneer's own words[6]: "We are focused on balancing the need to develop a nationally important and critical mineral resource essential to a sustainable planet while maintaining and uplifting the Tiehm's buckwheat population at Rhyolite Ridge." The company has proven the gravity of their commitment by spending over 1.25 million USD on Tiehm's buckwheat research, developing protection measures, and engaging botanical specialists. Ioneer was graciously supportive of the USFWS's recent decision to list Tiehm's Buckwheat under the Endangered Species Act and assign a 910-acre critical habitat[7], despite the fact that this placed a substantial encumbrance on the Rhyolite Ridge project, when many believe that the Tiehm's buckwheat population could have been managed responsibly with less constrictive measures. Ioneer went as far as updating their buckwheat protection plan before this decision to remove all direct impacts to Tiehm's buckwheat from mining operations[8]. Given Ioneer's track record of cooperating with the government and stakeholders to ensure the health of the Tiehm's buckwheat population, and the comprehensive steps already taken by the USFWS, it is clear that mining will not pose an existential threat to the endangered species and, if anything, constitute a positive force by increasing public visibility, generating research interest, and attracting enhanced attention from conservation groups. [6] https://www.ioneer.com/sustainability/environment-tiehms-buckwheat-conservation/ [7] https://rb.gy/kkkyos [8] https://www.biologicaldiversity.org/species/plants/pdfs/Ioneer-Tiehms-Buckwheat-Protection-Plan-July-2022-Appendix-I.pdf

Issue Category	Organization	Comment[1]
Supportive of project	Nevada Mineral Exploration Coalition	Conclusions In closing, Rhyolite Ridge will provide significant benefits to the local population and the country, including: the strengthening of critical mineral supply chains by vastly increasing the domestic production of lithium, invigorating the local economy by creating jobs, and facilitating the conservation of Tiehm's buckwheat. In the opinion of the NMEC, any stressors to the Tiehm's buckwheat population are more than manageable, especially given the protections recently enacted by the USFWS. Many of the vocal opponents to mine development, who are undoubtedly well-intentioned, view the situation in a purely environmental light without sufficiently considering the benefits Rhyolite Ridge will provide to citizens of the Fish Lake Valley region and the United States. It is clear to the members of the NMEC that the Rhyolite Ridge project will have a decidedly positive impact and that, for the benefit of the general public, its development is an important concern worthy of prioritization. Thank you for this opportunity to submit these comments on the Rhyolite Ridge project. Please do not hesitate to contact me if you have any questions. Sincerely yours, David R. Shaddrick NMEC President
Supportive of project	Individual	I am writing today in support of the Ioneer Lithium project on Rhyolite Ridge in Esmeralda County, Nevada. I would like to specifically address the Thiem Buckwheat issue and the dynamic between corporate and conservation culture. I believe two opposing forces can not only coexist but complement each other. We are discussing a multi-generational project. We have an opportunity to influence not only our own growth, but how our community embraces development, how we contribute to the global economy, how we telegraph our future…and how we maintain balance between mining and conservation. Every movement that matters requires two partners, like a tango. If we pay close attention to each other, we can dance.

Issue Category	Organization	Comment[1]
Supportive of project	Individual	Over the last 7 years, ioneer has demonstrated the ability to successfully explore, evaluate, develop, and efficiently operate Rhyolite Ridge Lithium-Boron Project within all applicable laws and regulations. It has clearly communicated its activities, results, and expectations to its shareholders, all necessary governmental entities, interested public organizations and community members. It continues to anticipate, consider, and timely respond to questions raised about the potential financial viability or environmental challenges that may ensue. In response to concerns, for example, ioneer proactively, through a 3-year, one million dollar research effort, developed strategies which will protect the environmentally endangered stands of Tiehm's buckwheat and possibly expand its range. They have championed production approaches which will limit water use, utilize green-cogeneration for electrical power, protect transportation and visual resources, minimize waste, effectively reclaim lands after use, and minimize impact to flora & fauna. Those employed by ioneer have discovered deposits of minerals, have developed a process to extract and refine the ore's valuable elements, and have taken steps to help achieve profitable sales of both the lithium and boron products. As foreseen by authors of the General Mining Law of 1872, the public lands within ionner's claims have the potential to supply significant tonnages of mineral products, specifically lithium, for a US future valuing the more efficient and growing use of electrical power. In doing so, Rhyolite Ridge will create new wealth; the value of the extracted lithium and boron will repay those who have invested in its discovery and evaluation, and it will also pay good wages for hundreds of employees and provide a billion dollars in tax income to the governments involved. It is clear that ioneer has been a consciously compliant explorer/developer, when solving the mysteries of discovery and processing scheme, tackling the intricacies required by governmental law and regulations, or engaging in good faith efforts to address all stakeholders concerns. As a geologist and mineral explorer, I have followed with interest the effort being made to procure both boron and lithium to meet the demands of today's modern world and its future. I recognize and cringe from the hype often seen in the press by a promoting company; there has been none of that from ioneer, only periodic announcements which document their aspirations, plans, activities, studies, and results. I believe ioneer will continue to be an excellent operator, meeting its commitments in the submitted EIS and Plan of Operation, providing a new supply of lithium and boron, and becoming valued part of Nevada mineral industry and in the communities it serves. I feel that is in the best interest of Nation's critical mineral supply, the financial wellbeing of the citizens and their communities of Nevada, and the efficient and highest use of the ores at Rhyolite Ridge that the U. S. Bureau of Land Management, relative to the ioneer's Environmental Impact Statement (EIS), approve ioneer's Plan of Operation and authorize the proposed activities without modifications or additional mitigation measures.
Alternatives; Visual resources; Noise; Water resources; Transportation and access;	Individual	Five things to share: 1. The 13 miles of dirt road that will connect the mine to 264 is going to create massive dirt in the atmosphere which is going to settle on the housesin the Pennybaker estates etc. filtering into our homes way worse than it already does. This signals a health hazard which Ioneer could be sued over. 2. Noise and light pollution could be avoided by using a different route....the dirt road that exits on the end of the 773. 3. Seven pivots of water is going to leave a lot of land with no water rights that will become desert sand. That water should come back to us as electricity from Ioneer's project. That is an investment in us. It should not go to California on all those lines they are building. Our lines are only 40 miles long, and updating them to carry the electricity would be cheaper. 4. Highway 264, the proposed road they will hit coming off the hot Ditch dirt road, has no proper base. Esmeralda County has to keep redoing it every year. The proposed road usage would put an added burden to keeping that road surface and the paved 264 tolerable for local traffic. 5. The alternate route that goes behind the red lava mine and comes out on the end of the 773 almost at the 6 is a better deal to keep the skies clear, the atmosphere clean, the roads passable and the people on the North end of the valley happy. Please change to that route.

Issue Category	Organization	Comment[1]
Supportive of project	Individual	I have been a Tonopah resident for more than 40 years and own an H&R Block Tax franchise for 33 years. I served on the Tonopah Town board for twelve years (termed out) and continue to be active in the town and Nye County. I have attended Ioneer's meetings and presentations. I am happy to see another mining operation in the area. I am tired of the United States being dependent on foreign countries for all our products and want to see other countries purchasing from us. The buckwheat issue amazes me that not until Ioneer began it's work in central Nevada had Anyone even known such plant existed in the area. If this plant was in danger then why hadn't the environmentalists been active in protection. After all the work that Ioneer has put into saving/helping this plant and yet this doesn't satisfy the environmentalists. I am in favor of this project and the benefits to central Nevada. Thank you.
Supportive of project	Individual	I would like to formally declare my support for the Rhyolite Ridge Lithium - Boron Project. The USA needs this project and many more similar projects to come on line quickly. It is a matter of strategic importance. If projects such as this are not approved - we will not have energy independence. If we do not have energy independence - we will become vassals to states like China who are not afraid to develop their mineral resources. Even our President is smart enough to know that China is our economic enemy. We must become strong domestically if we are to prevail against them in this new Cold War. A major way to do that is to develop our domestic energy resources. APPROVE RHYOLITE RIDGE!!
Supportive of project	Individual	I fully support the advancement of the Rhyolite Ridge Project as Ioneer has proposed. The plan is well thought out and complete. They have thoroughly considered all the various impacts and produced a solid plan to avoid, engineer, or mitigate any issues. America's need for Boron and Lithium to create a lower carbon future revolves around good plans and operators to produce these minerals locally.
Alternatives	Individual	Thank you for the opportunity to submit scoping comments regarding to the Rhyolite Ridge Lithium-Boron Mine Project (hereafter referred to as “the Proposed Project”). I am a professional botanist currently living in Inyo County and am writing to express concerns regarding the Proposed Plan of Operations (POO) as it pertains to the management of Tiehm’s buckwheat (Eriogonum tiehmii). The Proposed Plan of Operations (POO) developed by Ioneer Rhyolite Ridge LLC (hereafter “Ioneer”) and presented by BLM for scoping describes surface disturbance occurring within the area that is currently designated critical habitat for Tiehm’s buckwheat. The described surface disturbance has high potential to adversely modify critical habitat by removing soil, altering hydrology, impacting pollinators, and increasing the risk of subsidence. Therefore, I respectfully request that BLM prepare an Environmental Impact Statement (EIS) that seriously analyzes an alternative that excludes the entirety of critical habitat for Tiehm’s buckwheat from surface disturbance, as well as an alternative that excludes a one-mile buffer as described in the Area of Critical Concern Proposal by Dr. Naomi Fraga and the Center for Biological Diversity. The EIS should fully analyze and disclose all direct and indirect impacts to Tiehm’s buckwheat and associated federally designated critical habitat resulting from the Proposed Project and all alternatives.
Threatened and endangered species; Geotechnical stability	Individual	The “Tiehm’s Buckwheat (Eriogonum tiehmii) Protection Plan” implies that the threat of herbivory is not a potential threat of the Proposed Project. However, given the scale of surface disturbance and associated vegetation removal, it is possible that the lack of alternative forage will draw herbivores to Tiehm’s buckwheat. Therefore, the EIS should analyze the threat of herbivory associated with the Proposed Project and provide feasible and demonstrably effective mitigation measures. Page 24 of the POO states that more drilling may be needed to complete geotechnical modeling and that the “final configuration of Quarry wall slopes will be governed by ongoing engineering studies, conditions encountered during operations, and MSHA regulations and guidelines.” Given the uncertainty surrounding the stability of the quarry, the EIS should fully analyze and disclose the possible impacts to Tiehm’s buckwheat and critical habitat resulting from slope failure, including a sensitivity analysis of the Proposed Project’s geologic model. Furthermore, the EIS should describe feasible and quantifiable methods that will be used to prevent slope failure with relevant examples where these methods were successfully implemented.

Issue Category	Organization	Comment[1]
Threatened and endangered species; NEPA Analysis	Individual	The EIS should analyze cumulative impacts to Tiehm's buckwheat and its critical habitat. These known and potential impacts include the effects of pollinator disruption, dust deposition, proliferation of competing plant species, altered patterns of herbivory, changes in hydrology, and soil water holding capacity. Since the exact effects of both direct and indirect effects may be uncertain, adaptive management of Tiehm's buckwheat and the species should be informed by the best available science, including annual demographic monitoring leading to a population viability analysis conducted following the collection of at least 10 years of data.[1] Lastly, given the repeated failures of reintroduction of Tiehm's buckwheat outlined in the US Fish and Wildlife Service Species Status Assessment Report,[2] translocation should not be considered a valid option for mitigation. Thank you for the opportunity to submit my comments and I look forward to staying engaged with this project in the future. [1] Vitt, P., Tienes, M., Skogen, K., & Havens, K. (n.d.). Optimal Monitoring of Rare Plant Populations II: Data Collection and Analysis. 95. [2] USFWS. 2022. Species Status Assessment Report for Eriogonum tiehmii (Tiehm's buckwheat). May 2022 (Version 2.0).
Supportive of project	Individual	The Rhyolite Ridge Li-B project is a very important project in terms of achieving the national and global goals of minimizing fossil fuel use into the future and transitioning to an "electric economy". Mining at this location is the highest and best use of the land.
Supportive of project	Individual	The Rhyolite Ridge Li-B project is a critical component to the success of the national and global economic transition to a fossil fuel minimization and adaptation to an electricity based economy. Its location is the highest and best use of the public and private lands in the area.
Supportive of project	Individual	This Project Makes Sense! I know people don't like Mines , but their relatively small impact are part of a much bigger difference. The same people who are worried about a few flowers need to look at the bigger picture. It is the Planet we need to plan for not a few plants. Looking at this mining project is a small and necessary part of the bigger Puzzle. The USA / World want to move toward more EV vehicles meaning these mines are needed not wanted. So our options are to source locally or are 100% dependent on imports. Additionally , If anyone is doing the math on the possible greenhouse gases or emissions of the actual mining process.. #1 they are happening on the planet somewhere either way, and #2 Do the math on the shipping of those products that are not sourced locally. The Rhyolite Ridge project is a needed part of a better Future.
Supportive of project	Individual	After reading the public scoping summary of the Rhyolite Ridge project prepared by the BLM, dated December, 2022, it seems clear that all significant factors of environmental concern will be addressed by Ioneer. Considering the proposed project will produce lithium, a critical component of the batteries needed to transition to a low carbon energy future, and will be part of the foundation of a domestic battery industry; approval of the mine should not be controversial. The project will also provide a large number of high paying jobs for a twenty year period. Is this not exactly what the Federal Administration has been touting as the bonus of a green energy future? I guess we will see how serious the Federal Government really is about making things happen.
Supportive of project	Individual	Any project that helps the world move towards a more sustainable future must be welcomed. The fact that this project secures lithium for use in the US supply chain is extremely valuable and this, coupled with the zero carbon output of the site makes it an extremely attractive proposition. I wish ioneer and the residents of Esmeralda County a bright and prosperous future
Supportive of project	Individual	I strongly support the Rhyolite Ridge lithium-boron project. I live and work in the region. They are doing an excellent job of meeting all environmental and legal requirements. The wheat ear identification as "endangered" approaches fraudulence.
Supportive of project	Individual	The proposed mine would supply elements essential for the transition to, and continuance of, a low-carbon use economy and environment. The mining impacts can be mitigated. I strongly support the proposed operation.
Supportive of project	Individual	I fully support the exploration and development of the Rhyolite Rydge project. I believe that it is important to support the development of projects such as Rhyolite Rydge to ensure that the US can transition from fossil fuels into renewable energy sources.

Issue Category	Organization	Comment[1]
Supportive of project; Socioeconomics and environmental justice	Individual	As a member of the local community of central Nevada I fully support the Plan of Operation provided by Ioneer to responsibility break ground on the Rhyolite Ridge project. With the oversight from the Bureau of Land Management, the Rhyolite Ridge project will make a positive environmental and economic impact locally. This potential mine will provide a local source of lithium and boron materials which will be necessary for a sustainable future. This mineral deposit provides an opportunity that will help lead the way to a clean energy future. This project will address climate change, while promoting healthy and productive public lands that will create jobs in the local community. With the guidance and successful resource stewardship of the BLM, I believe this partnership with Ioneer supports the BLM's multi-use mission.
Supportive of project	Individual	I support the development of the Rhyolite Ridge Project and would like the BLM to approve its development as fast as possible for transition minerals required for carbon neutral economy. I have reviewed the Rhyolite Ridge Project Public Scoping Report and have found it very informative. I do not see any major environmental or cultural issues that should prevent this development going forward in a timely manner. I did note that the area contains the endangered buckwheat and the Company does not intend to disturb it. However if it is required to disturb it I know that the endangered Crosby buckwheat has been successfully transplanted at the Hog Ranch Gold Mine in Washoe Co Nevada in the early 1990s and has since been flourishing. I have visited the Hog Ranch Gold Mine owned by Rex Minerals Ltd and have seen the area of buckwheat transplantation and rehabilitation. If the Ioneer Company follow a similar methodology that then transplanting the buckwheat should not result in any flora loss, infact it might improve it. Please approve this project for with as the country needs more critical minerals necessary for the transition to the net zero carbon economy.
Supportive of project	Individual	Ioneer's Rhyolite Ridge project should be permitted and fast tracked to production. It is located along the Walker Lane, a relatively uninhabited area with a long history of mining. It has met all permitting requirements, and there is a shortage of lithium and boron to meet our needs as we transition to EVs, etc. Strategically, for the safety and strength of our country, we need to develop our own lithium and boron resources. This is a perfect opportunity to begin to meet those needs.
Recreation; Proposed EPM	Nevada Offroad Association	The Nevada Offroad Association (NVORA) has participated in the virtual public scoping meeting and reviewed the publicly available information for the Rhyolite Ridge Lithium-Boron Mine Project scoping. (DOI-BLM-NV-B020-2021-0020-EIS) The Rhyolite Ridge Lithium-Boron Mine impact on our community will displace some of the recreational off-road user routes and traditional trails in this area of moderate recreational use. NVORA seeks to have a communicative relationship with stakeholders to assist in keeping our users safe while not interfering with the operations at this site. The addition of minor educational and directional signage can reduce the incidences of inadvertent intrusion to sensitive areas, and direct conflict with industrial traffic to and from the facility. Educational and directional signage is a triflingly small investment that pays huge dividends in safety and resource protection. NVORA takes no position on the scope of any mining operation beyond its direct impact to off-road recreation and strives to partner with all organizations conducting business on Nevada’s Public Lands to ensure a cooperative relationship that reduces conflicts between stakeholders.

Issue Category	Organization	Comment[1]
Supportive of project	Individual	I am a resident of the state of Nevada and would like to voice my whole hearted support for Ioneer's Rhyolite Ridge Li, B mine project. This project goes beyond being just another mine located in the important mineral rich state of Nevada. It represents a first of its kind for the state and the Country, if not the World. It would demonstrate the viability of mining Lithium, a mineral necessary for the propagation of clean energy, from lacustrine sedimentary style deposits of which Nevada has many. Currently, Nevada is home to quite a large number of lacustrine sedimentary style lithium deposits in varying stages of exploration and development. Bringing Ioneer's Rhyolite Ridge Project online as a mine would would give tremendous impetuous to the lithium mining industry as currently there are no proven economic extraction processes for lacustrine sedimentary style lithium in action within the State and Country. Demonstrating the economic viability of mining sedimentary lithium deposits would likely create a very positive impact on the economy of Nevada and bring in major new outside investment into the state. At the present, there is worldwide skepticism on lacustrine sedimentary lithium deposits as no viable lithium extraction process has yet been proven. A mine at Rhyolite Ridge would be first of its kind and usher in a new style of Lithium production of which Nevada would likely become famous for.
Supportive of project	Individual	I support the Rhyolite Ridge project. Ioneer has been extraordinarily careful about minimizing environmental impacts since the inception of the project. The company's leaders are in the business of developing this lithium deposit because they saw the environmental benefits of electrifying the world's personal transportation fleet and the concomitant need for raw materials like lithium and boron to support that effort. They understood early on that if the project did not take extraordinary steps to minimize its environmental footprint, it would be justifiably criticized for talking the environmental talk but not walking the walk. For this reason, the Rhyolite Ridge projects stands out for its efforts to minimize water consumption, air pollution, and plant waste. Mine tailings contain no heavy metals so reclamation is much simpler and cleaner. Above all, when the company learned about the Tiehm's Buckwheat plant growing in the vicinity of the project, it devoted substantial resources first helping the BLM and NGO's gather more facts and then, when the facts were known, supporting the classification of Tiehm's Buckwheat as endangered and altering its plan of development to protect the plant. I'm sure many others have written to support the project in terms of the economic benefits to Esmeralda County and the State of Nevada so I won't repeat a list of those benefits. Instead I will conclude by pointing out that the adverse effects of global warming pose an enormous danger and cost to everyone, including risks to the survival of the plants and animals that opponents of the project want to protect. By providing an essential raw material for the production of electrical storage batteries, Rhyolite Ridge is a huge step toward the reduction of carbon emissions from internal combustion engines. The known, quantifiable and positive environmental impact of such carbon reduction should be taken into account by the BLM as it considers the environmental risk to Tiehm's Buckwheat, especially when that risk has been mitigated by a carefully thought out plan of development prepared by a company that has demonstrated its intent to walk the environ

Issue Category	Organization	Comment[1]
Opposed to project	Individual	I find it interesting that many of the residents I talk to in the community of Tonopah Nevada are unaware of the size of this project and few know of the planned processing plant. The project will have a huge impact in the community (Tonopah) and many are unaware of what that entails. Already miners are arriving here. It is like an invasion. Maybe I have missed something but Ioneer still has not committed to an exact location for the enormous processing facility. That is very suspect to me, the location should be a concern to everyone because of it's size. Perhaps I am ill informed, but it is my understanding that China is the leader in Lithium production. If that Is the case I can't help but think that alternatives to the EV battery will quickly be developed to thwart China's control of the "white gold". Perhaps this mad rush to produce the lithium that is located near this endangered wild flower should be paused for three years, while the current exploration of alternative compounds for an EV battery have fully been examined. I say let's pause the development of this mine for three years and reexamine it's feasibility in 2026. To me the central Nevada desert is a beautiful and special place. Let's not desecrate it for the sake of something that may not be in demand 10 years from now.
Supportive of project	Individual	I am pleased to provide my support of this application of Ioneer's proposed Rhyolite Ridge Project. I feel Ioneer has done a good job with this project and its EIS for the proposed lithium-boron mine is comprehensive. I would like to see it progress to development and production. The team at Ioneer keeps a good focus on its environmental obligations and the team has a genuine commitment to this. Its research to Tiehm's Buckwheat conservation is an excellent example of that commitment and a real achievement to minimise any impact to this species.
Supportive of project	Business	Please see the attached Petition in Support of Ioneer Mining's Rhyolite Ridge Project from business owners and managers in Tonopah, Nevada. We appreciate the opportunity to offer this support.
Opposed to project	Individual	I urge you to reverse course and deny the permit for Rhyolite Ridge mine, which would doom the federally protected Tiehm's buckwheat to extinction. "It is horrifying that we have to fight our own government to save the environment." -- Ansel Adams The proposed mine would create an open pit deep enough to hold the Eiffel Tower, surrounded by the equivalent of 1,000 football fields of mining waste. Its footprint comes within just 13 feet of these critically endangered wildflowers. “Our government is like a rich and foolish spendthrift who has inherited a magnificent estate in perfect order, and then has left his fields and meadows, forests and parks to be sold and plundered and wasted.” -- John Muir That simply doesn't provide the protection Tiehm's buckwheat needs. Like so many plants, the buckwheat exists within a larger ecosystem that must include intact pollinator habitat to ensure reproductive viability. Mining operations sited at the plant’s doorstep could significantly alter the ecosystem functions that sustain it. In recognition of this, the U.S. Fish and Wildlife Service protected a 1,640-foot buffer around the plants as critical habitat, but the proposed mine pit and waste storage would be within this protected habitat, in violation of the Endangered Species Act. "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise." -- Aldo Leopold You can’t allow Tiehm's buckwheat to go extinct. I’m counting on you to say "no" to this plan. "The ultimate test of a moral society is the kind of world that it leaves to its children." -- Dietrich Bonhoeffer

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Supportive of project	Individual	I support the Rhyolite Ridge project. Ioneer has been extraordinarily careful about minimizing environmental impacts since the inception of the project. The company's leaders are in the business of developing this lithium deposit because they saw the environmental benefits of electrifying the world's personal transportation fleet and the concomitant need for raw materials like lithium and boron to support that effort. They understood early on that if the project did not take extraordinary steps to minimize its environmental footprint, it would be justifiably criticized for talking the environmental talk but not walking the walk. For this reason, the Rhyolite Ridge projects stands out for its efforts to minimize water consumption, air pollution, and plant waste. Mine tailings contain no heavy metals so reclamation is much simpler and cleaner. Above all, when the company learned about the Tiehm's Buckwheat plant growing in the vicinity of the project, it devoted substantial resources first helping the BLM and NGO's gather more facts and then, when the facts were known, supporting the classification of Tiehm's Buckwheat as endangered and altering its plan of development to protect the plant. By providing an essential raw material for the production of electrical storage batteries, Rhyolite Ridge is a huge step toward the reduction of carbon emissions from internal combustion engines. The known, quantifiable and positive environmental impact of such carbon reduction should be taken into account by the BLM as it considers the environmental risk to Tiehm's Buckwheat, especially when that risk has been mitigated by a carefully thought out plan of development prepared by a company that has demonstrated its intent to be good stewards of the land while providing much needed access to the necessary raw materials in support of renewable energy.
Supportive of project	Individual	I am in favor of the Rhyolite Ridge Lithium Project. I view the project as in the vital interest of the United States as this country needs to reduce its reliance on foreign mineral commodities. We need to use our own resources using American labor. The project is in the U. S. national security interests and will provide well paying jobs in an area of Nevada that sorely needs them.
Supportive of project	Individual	I would like to add my name in support of this project. As a retired construction worker, I have seen more and more restrictions in the mining industry and upon review of this project I believe the planning for production here has be outstanding. The small environmental footprint coupled with American job creation is exemplary. The care and consideration given to the project and opportunities for local workers and budding trade persons while supplying needed resources for the future of the electronics and automobile industries is exactly what this country needs and is about. Please consider the approval of this responsible project. Thank you.

Issue Category	Organization	Comment[1]
Supportive of project	Nevada Mining Association	The Nevada Mining Association respectfully submits the following scoping comments regarding the Ioneer Rhyolite Ridge LLC's Proposed Rhyolite Ridge Lithium-Boron Mine Project in Esmeralda County, NV. The Rhyolite Ridge project is an exciting opportunity to develop local sources of lithium and boron – two materials essential for the increased deployment of clean technologies and sustainability. 1. The Nevada Mining Association and Mining in Nevada The Nevada Mining Association was first organized in 1913 and consists of more than 500 companies that comprise Nevada mining and rely, in whole or in part, on this state's foundational industry. These member companies are engaged across the broad spectrum of the industry in Nevada, from exploration and discovery, to development and construction, to operation and production, to closure and reclamation. The Nevada Mining Association provides a voice for Nevada's mining industry in federal, state, and local policy matters, community engagement, public education, and workforce development. Mining in Nevada and in the U.S. is in global competition. Access to mineral resources and the costs of doing business weigh heavily on a decision to mine in the U.S. verses South America, Africa or other mineralized areas of the world. Furthermore, the products mined in Nevada, especially lithium, have significant strategic importance to the U.S. in terms of climate change, technological innovation, energy independence, economic stability, and the national interest. In the absence of domestic metallic and industrial mineral mining, the U.S. must import from foreign sources, making Nevada mining a national security interest. It is well-known that mining offers great benefits to the communities in which it operates as well as the state as a whole. Mining is in every county in Nevada, be it active operations or the presence of vendors or support services. The mining industry makes significant contributions to the economic wellbeing of the state and counties, paying all taxes and fees that all general businesses are required to pay in addition to an industry specific tax which is split between the state and local counties. Further, mining is known for being a great partner of education in the communities in which it operates by teaming with local efforts to sponsor everything from programs aimed to help at-risk students to aiding in the building of facilities. Nowhere is the presence of mining more important than in rural Nevada where it is a major economic driver in communities like Tonopah, Elko, Winnemucca, Battle Mountain and Eureka. With direct and induced employment numbering near 37,000, average wages near $100,000, paid sick leave, and employer paid health insurance, there is no question that mining reduces the strain on the State and local social safety net.
Socioeconomics and environmental justice	Nevada Mining Association	2. Benefits of the Rhyolite Ridge Lithium-Boron Mine Project The Rhyolite Ridge Lithium-Boron project is expected to employ 400 to 500 workers during the construction phase, and 320 to 350 during operation with median total compensation levels of $141,000 per year. In addition, the operation is estimated to contribute $15-25 million in taxes during construction and $13-35 million annually once in operation. When considering the life of the mine (30 to 50 years) and the direct, indirect and induced jobs created, the Rhyolite Ridge Lithium-Boron project will be transformative for the people, children, and businesses of Esmeralda County and its communities. The impacts to small business are obvious, it will create opportunities for new ones and allow existing one to thrive and expand. This project will be only the second lithium operation in North America (the other also being located in Nevada). The need for lithium worldwide has skyrocketed with the development of renewable energy technologies and Nevada, as a result of its bountiful mineral resources, is uniquely positioned to fulfill that demand. In the 1970's, lithium production was almost non-existent. Production was 150,000 tons per year in the year 2000, 400,000 tons per year in 2010, and is estimated to be 600,000 tons per year in 2020. As the lithium demand grows, so must the supply through new sources and new mining operations. The Rhyolite Ridge Lithium-Boron project is expected to produce 22,000 tons of lithium carbonate per year, significantly supplementing the worldwide supply.

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Threatened and endangered species	Nevada Mining Association	3. Conservation Efforts by Ioneer Upon learning of the Tiehm's Buckwheat, the Rhyolite Ridge Lithium-Boron project took immediate actions to conserve and preserve the species, including the immediate fencing and protection of current populations from non-mining threats. Further, the Rhyolite Ridge Lithium-Boron project has worked dutifully with federal land managers, state regulators, and researchers to learn more about the Tiehm's Buckwheat. This work has led to the development of a habitat suitability model and the funding of baseline studies and genetic research to identify undiscovered Tiehm's Buckwheat populations and to better understand the plant's lifecycle along with the soil and climatic factors on which the buckwheat depends. Additionally, in cooperation with the Bureau of Land Management, the Tiehm's Buckwheat seeds have been sustainably collected for study, banked, and propagated with an eye toward natural germination and seedling planting. Finally, probably most importantly, the Rhyolite Ridge Lithium-Boron project modified its operational plans with the specific aim to avoid, minimize and mitigate impacts on the Tiehm's Buckwheat to ensure populations are preserved and protected while allowing mining to occur. 4. Tiehm's Buckwheat Ioneer has been respectful of the listing process under the Endangered Species Act regarding a rare species of buckwheat that occurs near the Project area. Ioneer has always supported the U.S. Fish and Wildlife Endangered Species Act listing and demonstrated a clear commitment to protecting and uplifting Tiehm's buckwheat as evidenced by revising the mine quarry to avoid all direct impacts. Further, Ioneer has expended considerable resources for buckwheat research and conservation measures, including the hiring of a full-time botanist and construction of a dedicated greenhouse. It is clear that Ioneer is serious about its responsibilities and obligations under the Endangered Species Act and other permitting responsibilities, such as under the National Environmental Protection Act. Given Ioneer's commitment to environmental stewardship, the BLM should authorize the development of this vital Project.
Supportive of project	Nevada Mining Association	5. Conclusion The Nevada Mining Association appreciates the opportunity to provide comment on the Rhyolite Ridge Lithium-Boron Mine Project. This project is expected to become a globally significant, long-life, low-cost source of lithium and boron. The project will provide the materials necessary for a sustainable and thriving planet, while strengthening the U.S. critical minerals supply chain. Thank you for your consideration of these comments. Thank you for this opportunity to present our comments. Please contact me if you have any questions. Sincerely yours, Tyre Gray, Esq. President and CEO
Transportation and access; Socioeconomics and environmental justice; Visual resources	Individual	We have owned property in Dyer, NV since 2000 and lived here full time since 2007. We welcome progress to our area. We live along Chiatovich Creek and just opposite the Hot Box and Cave Springs road. We have four big concerns: #1 We are concerned about infrastructure. We believe the Ioneer project needs to allocate money for the graded and State highways which will be affected by the extensive use during construction and production. It is not acceptable to continue using our roadways without paying for maintenance and upgrades. #2 Housing, educational and shopping needs for families will need to be supported. Housing needs to match the current style in our community. Man camps, camping in the desert areas, etc are not acceptable. #3 Sheriff and medical services will need financial support from the project.. #4 Curfews need to be imposed on lighting and traffic. Noise and light pollution should be restricted in evening and nighttime hours. If Ioneer cannot assure us that these needs will be addressed and supported, then we cannot support the project.
Supportive of project	Individual	I am writing to express my support for the Rhyolite Ridge Project and respectfully request that the BLM move forward with the process in a timely fashion to enable the benefits of the project to become reality. I have been a part of the mining industry for 7+ years and have worked in many states at many different sites. Mining in the US is crucial to the sustainability of the country and should be supported on local soil. The mining industry always has the safety of the employees and protection of the environment at a forefront and Nevada should follow suit in supporting this project. This project will create many stable jobs to build up the local communities and supply a resource that is greatly needed in the US. It is so important to not be reliant on other countries for these metals.

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Supportive of project	Individual	I would like to voice my strong support for the Rhyolite Ridge Mine development and your approval of the Plan to authorize the proposed activities without modifications or additional mitigation measures. I'm an avid desert rock climber, hiker, backpacker, and camper in Nevada and I strongly believe desert / arid developments should be carefully planned and impacts limited. In this case the benefit of domestically available green minerals supporting an our green energy transition far, far outweighs any incremental risk to the buckwheat. I believe the proposed Ioneer plan is sufficiently robust to protect to buckwheat affected by their proposed activities and support approval. Indeed, Rhyolite Ridge, and similar projects may be the only hope for this buckwheat and thousands of other species threatened by climate change.
Supportive of project	National Mining Association	The National Mining Association (NMA) appreciates the opportunity to provide comments during the Bureau of Land Management's (BLM) public scoping period for the Rhyolite Ridge Lithium-Boron Mine Project. Ioneer, the Rhyolite Ridge Project proponent, is one of NMA's members. The NMA supports the Rhyolite Ridge Project and its unique benefits locally and nationally that will further this administration's stated clean energy goals. America's mining industry supplies the essential materials necessary for nearly every sector of our economy – from technology and healthcare to energy, transportation, infrastructure, and national security. NMA has a membership of more than 250 companies and organizations involved in every aspect of mining in the United States. NMA's members work to ensure America has secure and reliable supply chains, abundant and affordable energy, and the American-sourced materials necessary for U.S. manufacturing, national security, and economic security, all delivered under world-leading environmental, safety, and labor standards. The Rhyolite Ridge Project is critically essential to the development of a domestic source of lithium and boron that can be extracted in an environmentally and socially responsible manner, providing materials that are necessary to providing a sustainable future for our planet while strengthening national security. Importance of U.S. Mined Minerals As the Biden Administration has recognized, mining is the foundation of a green economy. With the global competition for more EVs, wind turbines, solar panels, and the needed batteries to store energy, the demand for minerals and metals is only expected to grow exponentially. However, while mineral demand explodes, U.S. mineral production is stuck in first gear — with the U.S. growing ever more reliant on imports and supply chains dominated by geopolitical rivals, including China and Russia. Alarmingly, the U.S. is now import-reliant for 51 minerals, and 100 percent import-reliant for 15 of them. The U.S. has abundant mineral resources, yet the slow domestic transition to clean energy technologies has stymied production. The Rhyolite Ridge Project is poised to make an incredible contribution to ease U.S. dependency on clean energy technologies from foreign adversaries.

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Supportive of project	National Mining Association	Rhyolite Ridge Project The U.S. is poised to develop domestic supplies of lithium and boron, right here at home with the Rhyolite Ridge Project that will deliver lithium from Nevada directly to battery makers. The resources onsite have the potential to immediately make a positive economic and environmental impact locally, nationally, and globally. Specifically, the Project's 22,000 tons of produced lithium chemicals annually will quadruple domestic lithium production and be sufficient to power approximately 400,000 electric vehicle cars per year for decades to come, with production beginning in 2026. Further, an on-site production facility will produce large quantities of borates that are essential for clean technologies and environmental sustainability. The Rhyolite Ridge Project is committed to responsible development of lithium and boron, and has adopted a comprehensive set of environmental, social, and governance (ESG) standards to ensure that key mining risks are managed responsibly. This includes early and meaningful outreach to Tribal Nations prior to the permitting process to foster consistent engagement and collaboration in advancing Tribal interests and resolving any potential issues. Conclusion The NMA appreciates the opportunity to provide support for the Rhyolite Ridge Project. As outlined above, the U.S. is at a critical juncture for our clean energy future – time is of the essence. The Rhyolite Ridge Project is essential for the U.S. to achieve its clean energy goals, and to reduce our reliance on foreign sources of mined materials. The NMA believes the BLM should move forward with preparation of a draft Environmental Impact Statement as efficiently as possible and looks forward to continuing engagement with the BLM as it reviews the Rhyolite Ridge Project. Sincerely, Katie Mills Associate General Counsel

Issue Category	Organization	Comment[1]
Native American concerns and consultation; Socioeconomics and environmental justice	Western Shoshone National Council	Supplemental Comments of Ian Zabarte, Secretary of State of the Western Shoshone National Council of the Western Bands of the Shoshone Nation of Indians, Treaty of Ruby Valley 1863 (Consolidated Treaty Series Volume 127-1863). Scoping Comments The proponent Ioneer Rhyolite Ridge lithium mine acting under the agency of the US Department of the Interior, Bureau of Land Management pending funding from the US Department of Energy are seek to defraud the Western Bands of the Shoshone Nation of Indians of fights, title and interests that should accrue to the benefit of the Western Shoshone people. The United States makes no claim of ownership of Western Shoshone property rights defined by the Treaty of Ruby Valley and instead seeks to occupy and exploit the same treaty defined land for the benefit of other Americans that effects racism. The 1863 Treaty of Ruby Valley is in “full force and effect” in “Findings of Fact and Conclusion of Law” made by Bruce R. Thompson of the Federal District Court in Reno on remand from the US Supreme Court 1990 and no explicit extinguishment of Indian title has occurred. The only court to address the title issue was the Ninth Circuit Court in US v. Dann concluding that Western Shoshone title was not in issue and never actually litigated. The US Supreme Court did not in fact deem or change any facts of Western Shoshone title and instead crafted a term of judicial legislation inferring that Western Shoshone title was “deemed” somehow to be extinguished by the very acts contemplated by the treaty. No explicit act of Congress took place to extinguish Western Shoshone aboriginal title and no court could change the facts unless by fraud or malfeasance as is the case in US v. Dann. Therefore, the scope of the present environmental assessment must include the socioeconomic impact to the Western Bands of the Shoshone Nation of Indians from fraud and trespassing by the proponent through agency of the US Department of the Interior Bureau of Land Management inflicting conditions intended to bring about the destruction of the Western Bands of the Shoshone Nation of Indians in violation of the Treaty of Ruby Valley. Funds including taxes, royalties, grants or payments equal to taxes from Shoshone property at the mine site given to Nevada are violence against the Western Shoshone people, an economic war caused by trespass…taxation without representation. Nevada provides funds to every unit of local government except Indians that is racism. Acts of US coordinate agencies on behalf of the proponent failing to understand and investigate the socioeconomic impact to the Western Shoshone people living on the land is environmental racism. The Western Shoshone bear a disproportionate burden of risk from mine activities because of lifestyle differences not investigated or understood. Diet, mobility and shelter shaped over thousands of years are not know to the proponent and ought to be investigated for land and water use impacts. Failure to investigate and understand the living lifeways of the Western Shoshone people will produce impact to spiritual properties through physical impairment and psychological impact, a stigma or special effect. Additionally, impact to spiritual belief in water—stigma effect; Impact to Western Shoshone conservation lifeways—stigma effect; Impact to shared sense of tribal community—stigma effect; Impact to Western Shoshone freedom of religion—physical use impairment; Impact to medicine plants needing water—physical effect; Impact to medicinal mineral made with water—physical effect; Impact to water used in medicinal treatments—physical impairment; Failure to calculate risk using a culturally appropriate context resulting in a disproportionate burden or risk from impairment to the Western Shoshone people.
Native American concerns and consultation	Big Pine Paiute Tribe of the Owens Valley	The Tribe seeks meaningful protection of the land, air, water, and other resources of the Tribe’s ancestral territory. The Tribe objects to the proposed Rhyolite Ridge Lithium-Boron Mine Project, and this letter lists some of the issues that must be addressed should the NEPA process move forward.

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Native American concerns and consultation	Big Pine Paiute Tribe of the Owens Valley	The proposed project clearly conflicts with the Bureau of Land Management ("BLM") Mission statement. As stated online at https://www.blm.gov/about/our-mission , "The Bureau of Land Management's mission is to sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations." Mining operations conducted at the scale they now are carried out, and as planned in the proposed project, are completely inconsistent with the mission of the BLM. Lands withdrawn and managed by the federal government were taken from Indigenous peoples, and to this day, tribes rely on agencies such as BLM to be defenders and caretakers of these lands.
NEPA Analysis	Big Pine Paiute Tribe of the Owens Valley	NEPA requires an assessment of cumulative effects, and for this, the Tribe expects the land management agency to make a credible assessment of impacts anticipated at least seven generations into the future when considering decisions made today. BLM cannot claim to adhere to its mission or goals for environmental protection if it allows huge pits to be dug in relatively undisturbed lands, excessive amounts of water use, industrial processing using hazardous chemicals, and destruction to native plant and animal species and habitat.
Threatened and endangered species	Big Pine Paiute Tribe of the Owens Valley	Your BLM offices would be in conflict with the BLM mission if the proposed project is allowed to proceed, because there is every indication that the project will adversely affect an endangered plant. The documents say that Rhyolite Ridge is one of the only two known global deposits of lithium-boron1, but it is also the only known location of Tiehm's buckwheat (Eriogonum tiehmii). Which is more important, allowing a company to engage in massive digging and on-site chemical processing for the relatively common minerals, lithium and boron, or protecting a plant associated with the unique site now and for future generations? To the Tribe, and to be consistent with BLM's mission statement, the answer is clear: the plant must be protected. How is it best protected? BLM should first consult the findings of the U. S. Fish and Wildlife Service (USFWS), which in December 2022 determined Tiehm's buckwheat to be endangered. USFWS identified several (obvious) threats, including: • Habitat modification through destruction and physical removal of existing subpopulations of Tiehm's buckwheat; • Dust deposition from increased vehicular traffic; • Spread and establishment of non-native invasive plant species; and • Increased risk of extinction due to the effects of catastrophic events on small populations. The Tribe reviewed Ioneer's Tiehm's Buckwheat Protection Plan, which is included as Appendix I of Ioneer's July 2022 Plan of Operations. The tasks listed in the protection plan fall short of truly protecting the species, because the plan only calls for steps to "minimize" potential impacts as well as steps to increase "the likelihood of the survival of this species."
Opposed to project	Big Pine Paiute Tribe of the Owens Valley	BLM's first step along the way to protecting the plant now and into the foreseeable future is to not carry out the proposed project. A next step would be to provide a higher level of land protection, for example by designating the site as an Area of Critical Environmental Concern (ACEC).
Threatened and endangered species	Big Pine Paiute Tribe of the Owens Valley	BLM betrays the Tribe's trust in BLM's ability to appropriately manage and protect resources on its land by asserting, on p. 9 in the December 2022 "Scoping Overview – Rhyolite Ridge Lithium-Boron Project EIS," that, "Many [Tiehm's buckwheat] plants were killed or damaged by herbivores in 2020." There is no evidence or reason to believe that anything other than human vandalism caused the uprooting and disappearance of thousands of individual plants at the proposed project site. BLM not only should be more professional in its investigation and reporting but also exposes its institutional lapses when it comes to understanding the ecology of the site and BLM's ability to monitor and protect valuable resources.
Threatened and endangered species	Big Pine Paiute Tribe of the Owens Valley	The future of a very rare plant species should not be compromised for a project to mine a substance that can be found elsewhere, which can be recycled and thus recovered from existing materials such as everyday batteries, and which may in the not-too-distant future be replaced by other substances for use in long-term energy storage. The common metal lithium simply has a market-rate dollar value. The value of a plant that has evolved with an apparent affinity for a substrate with a unique mineral composition is not something that one may put a dollar figure on; these resources are truly irreplaceable thus of immeasurable value. This fact must be addressed.

Issue Category	Organization	Comment[1]
Water resources	Big Pine Paiute Tribe of the Owens Valley	The project proponent plans to permanently remove ground water by dewatering its very large man-made pit and to pump and pipe water from wells in Fish Lake Valley to the site for processing the ore. Given the volumes Ioneer provided in its July 2022 Plan of Operations (up to 2500 gallons per minute (gpm) will be pumped from Fish Lake Valley wells for 13 years, and the quarry will be dewatered at 110 gpm for 17 years), the Tribe notes that more than 55,000 acre-feet of water will be consumed during the life of this project. Taking so much water from the high desert environment will have consequences on wildlife and habitat and may affect the nearby springs. Desert springs are extremely important water sources for plants and wildlife. The scoping documents raise concerns that there will be impacts to springs, because pumping and processing could adversely affect water quantity and quality. The mine would also take water away from local people who rely on farming and ranching. The Tribe knows of no instances where the outcome of pumping and chemical pollution resulted in good or improved hydrologic conditions. If the Tribe is mistaken, and BLM can cite factual positive outcomes to water resources from a mining operation, the future NEPA documents should disclose these examples.
Hazardous materials and waste; Reclamation	Big Pine Paiute Tribe of the Owens Valley	Dangerous waste materials, toxins, and permanent damage to ecosystems are components of the legacy left by mining in the western United States. The state of Nevada, BLM, and the US EPA have on their lands or can cite numerous examples of real or pending mining calamities. The Tribe knows of no former mining operation which has truly successfully cleaned up and left an area as good as or better than conditions when mining started. If BLM is aware of success stories, these should certainly be listed and discussed in the NEPA environmental review document. Even so, successful techniques in one situation most likely will not apply directly in another mining operation due to a multitude of reasons (different minerals being mined, slopes and aspects, climate, starting biological conditions, etc.). Nevertheless, project proponents plan for a project lifespan approximately equal to one human generation. This amount of time seems long because it exceeds the tenure of most BLM and other government employees, but the impacts persist much longer, at least several generations. The truth is, western science does not have sufficient knowledge to project so far into the future. However, the scars of mining from three to four generations ago persist.
Hazardous materials and waste	Big Pine Paiute Tribe of the Owens Valley	There are two unremitting, significant problems with public lands mining in general which apply to the proposed Rhyolite Ridge project. The first is the processing of ore on-site. Processing involves hazardous liquid, solid, and gaseous materials which are brought in or generated on site. In addition, there is the infrastructure needed to carry out the processing, including generators, pads, liners, containers, and more. None of the above belong in a remote high desert canyon. They all present a threat to vegetation, wildlife, and even human health. Components always escape, polluting the air or contaminating ground water. Once escaped, it is extremely difficult or impossible to recapture them or reverse the effects of the pollution. BLM is aware that the proposed “project may result in the use and generation of hazardous and non-hazardous waste materials.” In referring to operations and future cleanup, the existing documents use terms like “minimizing” leaching and “limiting” seepage. This is the current and most likely future state of our abilities and technologies, and it is not acceptable. Adequate reclamation is not possible, so the project should be rejected to be consistent with BLM’s mission and the Tribe’s trust in federal resource management and protection agencies.
Reclamation	Big Pine Paiute Tribe of the Owens Valley	The second deficiency with mining is the inability to return the landscape to its pre-project condition after the mining operations cease. Like other plans for reclamation, the project pr ponent calls for setting aside topsoil, recontouring disturbed areas, and scattering seeds, using a rather generic mix of species. Even with the best weather conditions and absence of seed predators, very few seeds make it past the young seedling stage. Reclaimed lands are visually and ecologically scarred for generations to come, never blending into the natural landscape. BLM knows this, and these unacceptable outcomes are again contrary to the BLM mission.
Out of Scope	Big Pine Paiute Tribe of the Owens Valley	The Tribe applauds the nation's priority to tackle the climate crisis at home and abroad, and the Tribe is in favor of reducing to the point of zero the burning of fossil fuels, but the Tribe is alarmed that the federal government has prioritized the destruction of western lands and resources to achieve its goals. We cannot get to a true environmentally-sound future using the same protocols, laws, and processes that have put us where we are today. NEPA is more than 50 years old, and its approach to protecting the environment falls far short of what modern western science now understands about landscapes and ecosystems. NEPA fails to take a holistic, thus more realistic, view of the resources and systems in which they function. While NEPA is better than nothing, the nation is fooling itself that progress will be made in tackling today's big problems using yesterday's "western" tools and mindset. Indigenous approaches to land management need to be brought forward. For the Tribe, these well-tested, organic approaches work with natural systems, not in defiance of them. With regard to the nation's energy future, more focus is needed on the reasonable viable alternatives including energy conservation, recycling, energy storage technology, and decentralization.

Issue Category	Organization	Comment[1]
Supportive of project	Individual	I am writing to show support and say I am in favor of the Rhyolite Ridge lithium-boron project. Thank you and Happy New Year!
Opposed to project	Individual	this project is totally negative and will have totally negativeeffedts. please add me tot he mailing list so i can stay informed.deny this permit. destroying the silverpeaks range isdiasgusting. destroying 7166 acres is disgusting. the mine canbe on 24 private acres that is enough. no national land shoudlbe destroyed. i am against destroying the wild horses too. blmis such a destructive agency. it never does a thing for soundenviroment. this commetn is for the public record. pleasereceipt.
Out of scope	Individual	The humanitarian and geopolitical crisis which has rocked Europe has made it ever so clear that we, as a nation, need to protect energy supply lines and understand that the inevitable disruptions or disputes over energy commodities are a national security matter. Given that background, the BLM has the opportunity here to steward a national strategic reserve (one of the largest on earth)... The need for energy storage and portability both civil and military applications will eventually cause this site to be developed. The question here should be "What can we do today to support thoughtful development which will protect the Nevada desert from the worst impacts of a rushed development in the face of the next geo-political crisis (around lithium-based energy technology)?" Read the history of oil exploration and politics, start with the Mineral Leasing Act of 1920 - which required leasing of federal lands for oil prospecting as foreign competitors attempted to shut U.S. companies out of the Middle East. The damage which resulted from this knee-jerk political reaction to energy competition. This was followed in the 1930's by the nationalization of oil resources by foreign powers near and far (even Mexico) - then the shortages and energy rationing in the WWII years. Over our hundred year history with oil the armed conflicts followed: 1953 US and Britain overthrow Iranian PM - deal follows, 1956 Suez, 1967 The Six Day War, nationalization of resources continues and OPEC gains power, 1973 Yom Kippur invasion starts 2nd embargo - hour long gas lines in the US. Then in our modern times, the Iraq war, the subsequent invasion of Kuwait by Iraq, new powers like Venezuela and Russia using oil to fund facism, and when Libya became entangled in 2011 our president overrode the protocols of the strategic oil reserve to prop up the economy. Rhyolite Ridge is a strategic reserve - BLM team, you have the opportunity to direct responsible development for this area. My fear is that if you are short-sighted about the strategic value which is sitting in the ground underneath the Silver Peak Range - someone from the east coast will come along with a battalion and take it from you. Push Ioneer on the environmental issues, and make sure the local communities are setup for sustainable benefits (rather than building a ghost town to be reclaimed by the desert long after the resources are gone). But make no mistake - every ounce of mineral under those peaks will be mined, and put into action - energy reserves are the stuff of war / conflict / and geo-political intrigue. This technology simply has not yet reached the peak of it's century.
Water resources, Wildlife and special status species	Nevada Department of Wildlife	We remain concerned about the potential loss of valuable water resources for desert bighorn sheep and other wildlife within the project area. Cave Spring is one important source that also sustains Wong's springsnail (Pyrgulopsis wongi). It is located approximately 150 feet from the project access road and 1,500 feet from the proposed quarry. Cave Spring is currently experiencing intermittent to no surface water conditions presumably consequential to persistent drought. Knowing whether project water needs (e.g., new ground water wells, transfer of water from existing wells in Fish Lake Valley) and commonplace dewatering associated with proposed mining project operations has the potential for decline of seeps, springs, or riparian habitat function is germane to EIS analyses.
Water resources, Wildlife and special status species	Nevada Department of Wildlife	We support BLM's decision to update the project's groundwater model to include the entire Fish Lake Valley Hydrographic Basin (10-117). Additional water uses may cumulatively exceed natural recharge of already vulnerable water supplies at Cave Spring. Not only would the result reduce available surface water on the landscape for terrestrial and volant species, accelerated drawdown may exceed an irreversible tipping point of locally isolated populations of aquatic species and ecosystem services.
Editorial	Nevada Department of Wildlife	As an aside, we noticed the document's identification "DOI-BLM-NV-B010-2021-0006-EIS" directed readers on ePlanning to the Goldrush Mine Project within BLM's Mt. Lewis Filed Office

Issue Category	Organization	Comment[1]
Proposed EPMs	Nevada Department of Wildlife	We offer the following ACEPMs for EIS consideration and inclusion. Permits and Approvals Thank you for referencing NDOW's Industrial Artificial Pond Permit (IAPP). Information and applications can be found at our website at https://www.ndow.org/apply-buy/apply-buy-slaps/. Processing Facility We encourage conscientious management of solutions by implementing at least the following measures: • Manage solutions in a closed system thereby promoting conservation of water resources and reduces potential wildlife contact with process solutions. • Leaching vats should be covered to prevent bird and bat access. Water Management Develop a comprehensive water resource monitoring and contingency plan.
Proposed EPMs	Nevada Department of Wildlife	Migratory Birds (Including Raptors and Eagles) All birds protected under the Migratory Bird Treaty Act are also State Protected (NAC 503.050). Recommended impact minimization measures for migratory birds include: • Because of resource sensitivity, we request specific location descriptions and maps of raptor nests be removed from any reports or documents generated and published as part of the EIS process. • Please see the U.S. Fish and Wildlife Service (USFWS) best practices for communication towers at: https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting- construction-operation. • At minimum, we recommend using free standing towers such as monopole un-guyed towers with no lighting system if FAA regulations and lighting standards permit. • Collision with vertical surfaces may be reduced by limiting or avoiding use of highly reflective surfaces such as glass and shiny-smooth metallic materials. It is recommended that highly reflective glass surfaces be coated with UV film and/or window patterns, non-transparent surfaces are painted with a natural color appropriate to the area such as those described in BLM's Tech note 446 (2015) or found on USFWS's online: https://www.fws.gov/media/reducing-bird-collisions- buildings-and-building-glass-best-practices. • Although eagle fidelity to a single nest site in successive years is commonplace, the location of active or occupied nests in any one year can vary. Therefore, we recommend the development of a survey and monitoring plan to evaluate potential risk and the likelihood of eagle take. If take is reasonably anticipated to occur, we recommend development of an Eagle Conservation Plan in consultation with the U.S. Fish and Wildlife Service. • Prepare a Bird and Bat Conservation Strategy. • Ground disturbing activities should avoid the migratory or sensitive bird species breeding and nesting season which roughly occurs from March 1st through July 31st. If this seasonal avoidance is not practicable, then survey of the project area by a qualified biologist prior to any ground disturbing activities for determining if nesting by migrants is underway is recommended. In the event a nest (containing eggs or young) is discovered or frequently attended by adult birds, a buffer area around the nest appropriate for the species involved must be identified and avoided until young birds fledge. This measure would be consistent with preventive actions advocated by the U.S. Fish & Wildlife Service concerning migratory species protected under the Migratory Bird Treaty Act. • Standard, raptor-friendly designs as outlined in Suggested Practice for Raptor Protection on Power Lines (Avian Power Line Interaction Committee [APLIC] 2006, 1996; APLIC and U.S. Fish and Wildlife Service [USFWS] 2005) would be incorporated in the design of new electrical distribution lines to prevent electrocution of raptor species attempting to perch on the power poles and lines.

Issue Category	Organization	Comment[1]
Proposed EPMs	Nevada Department of Wildlife	Game Species • Establish an appropriate speed limit along haul roads and service roads within the project areas to reduce potential for collisions with large animals. • Avoid disturbance to or in close proximity to wildlife water developments. • Chain-link fencing 8-feet high around facility components like the contact ponds, processing plant area, and the quarry is recommended for preventing access by large game species. Small Mammals • We recommend bat exclusion measures be implemented prior to disturbance of existing mine features in the area. NDOW is happy to provide further coordination and guidance. • Pertaining to the access road and infrastructure corridor, we emphasize avoidance of occupied pale kangaroo mouse (Microdipodops pallidus) habitat.
Reclamation	Nevada Department of Wildlife	Reclamation Reclamation of mined areas is important for returning disturbed areas into available wildlife habitat. Success is measured by establishing a suitable vegetative community on affected sites. Seedbed preparation is very important to the success of future reclamation efforts. Stockpiled topsoil greatly reduces logistical and cost hurdles, as well as enhancing achievement of reclamation goals and objectives including making cover and forage resources for wildlife available once again.
Public Involvement	Nevada Department of Wildlife	As a cooperating agency in the development of the EIS, we believe wildlife concerns can be reasonably resolved through a transparent, cooperative NEPA process and are ever available to coordinate with the BLM in providing additional and pertinent wildlife information and experiences. To this end, please contact Tracy Kipke by e-mail at tkipke@ndow.org.
Water resources	Individual	Has a groundwater basin water balance been prepared? And if so, what is the potential impact to water levels in the basin. Currently water levels in the southern portion of the valley have declined by over 70 feet in the last 30 years (M Palmer personal communication with FLV Resident, December 2022). During the mining and processing portion of the project it is my understanding that the project will use 2,500 gpm/day for 13 years. This translates into approximately 4,000 acre-feet per year, or a total 52,000 Acre Feet for the 13 years. This is a substantial amount of water removal from the basin that has limited recharge. As part of the EIR it should examine the impact to the basin, impact on water levels both residential and agriculture and impacts to farmers in the basin.
Water resources	Individual	Also has the impact to the quarry lake on water levels in the basin been fully evaluated? It is my understanding, Page 74 of the Mine POO that “When mining is complete and operational dewatering ceases, the groundwater system will recover and a terminal quarry lake is predicted to remain. As groundwater levels recover, the quarry lake level will slowly rise and approach the pre-mining static water level; however, the quarry lake level will remain below the surrounding groundwater levels due to evaporation from the lake surface and act as a hydrologic sink with groundwater flowing into the quarry lake from all directions.” From Appendix D, the evapotranspiration will result in 345 gpm per day loss. This is equivalent to 550 Acre Feet per year loss. This needs to be fully evaluated as part of the EIR.
Transportation and Access	Individual	The Mine Plan of Operations (Mine POO) on page truck in Section 3.1, page 8 indicates that “traffic associated with providing needed materials and supplies and product transport for the Project will be on the order of 100 round trips per day, 365 days per year”. However, in Section 3.7, page 11, indicates it is 115 round trips per day, 365 days a year. This is a substantial difference in truck track of 15% or an additional 5,475 round trip trucks per year. This needs to be clarified and addressed in the EIR.
Water resources	Individual	The BLM Rhyolite Ridge Lithium-Boron Project Overview For Public Scoping (Scoping) document indicates that on page 7 that there “In general, there are few domestic water users in the Fish Lake Valley, with agricultural operations currently holding the majority of groundwater rights within the basin.” This is factually incorrect. Most residents in the valley are on private supply wells, this needs to be addressed as part of the permitting and EIR process. Significant decrease in water levels in the basin can have an adverse impact (wells going dry) on the residents of the valley.
Socioeconomics and environmental justice	Individual	It does not appear that Ioneer has fully evaluated the housing needs for the construction and mining workers at the proposed project. On page 12 of the Mine POO they discuss the use of local hotels. There is no hotel in Fish Lake Valley, the nearest hotels are in Bishop and Tonopah which are 70 plus miles from the project site. Also, as I understand there is limited rentals available in the valleys (only 5 Airbnb rentals were identified for a mid-February 2023 stay). This needs to be carefully evaluated and addressed in the EIR since it has impact on local resources, water and water quality.

Issue Category	Organization	Comment[1]
Transportation and Access	Individual	It does not appear that Ioneer has fully evaluated the transportation needs for employees and contractors including buses. Most contractors will not use buses since they need their work vehicles for equipment and material. Given the remote location of this project site, extended distances to nearest towns and varying work shifts, it is hard to believe that use of regularly scheduled buses will be a viable alternative. It is believed that the number of vehicle trips per day is underestimated. This needs to be more thoughtfully addressed in an accurate manner and addressed in the EIR.
Transportation and access	Individual	It is not clear how Ioneer will address impacts to public roadways with this increased vehicle transport. The wear and tear on public right of ways will be greatly increased with the increased construction, quarry operations and material transport from the site. This needs to be evaluated as part of the Mine POO and EIR process.
Transportation and access	Individual	Section 3.9.10 of the Mine POO discusses protection for Wildlife and Avian resources. However, this section seems to be solely focused on project activities at the Quarry and not the transportation route. A significant number of collisions in this area is for large wildlife ie mustangs or cows on the road. With this greatly increased vehicle traffic, this should be addressed as part of the EIR process.
Water resources	Individual	On page 46 of the Mine POO, it discusses a NDWR adjustment to account for conversion from current agricultural use to mining and milling use. However, this adjustment is not specified. It is requested that this adjustment be clearly spelled out in future project documents.
Geotechnical stability	Individual	Neither the Scoping Document nor the Mine POE addresses the potential impacts associated with earthquakes. The Fish Lake Valley Fault zone is an active fault and should be addressed as part of the EIR process and Mine POO.
Financial assurance	Individual	Information on the Financial Assurance and Reclamation Cost Estimate is provided in the Mine POO but was not provided in the version posted to the BLM website. The cost estimate and the financial assurance mechanism are critical to the protection of the environment in the event the project is halted. For transparency to the community this information should be provided. Since this information was not provided, even though it was requested numerous times from BLM, it should be reviewed critically as part of the EIR process.
Public involvement	Individual	A robust online project repository should be maintained for this project with all available project documents readily available online. This will help maintain transparency with the community.
Project Description	Individual	The use of air miles to provide distances to nearby towns is misleading at best. The Mine POO document indicates that Bishop for example is 43 air miles away when in fact it is more like 80 road miles away. The use of air miles inadequately describes the travel distance for this remote mine location. Rather actual road miles should be used for all future planning documents.
Socioeconomics	Individual	To what degree will the project address limited emergency services (sheriff and ambulance) in FLV? It is my understanding that the Fish Lake Valley Ambulance service is a basic life support unit with limited staffing. Given the remote location, a typical call response will take several hours (response, transport to Bishop or Tonopah and return). How will this project address impact to the community with the influx of workers? Also, given the larger number of additional vehicle trips in the valley the likelihood of additional motor vehicle accidents will increase. Will Ioneer respond to incidents especially at the north end of the valley? This should be addressed as part of the EIR?
Socioeconomics	Individual	In the Mine POO, Emergency Response Plan it indicates that if there is a fire, that BLM will likely be the first responder to a 911 dispatch. I attempted to determine the closest BLM fire station and was not able to readily find one. I contacted the Tonopah Field Office and my phone call was not returned by BLM personnel. I do not believe that BLM has a fire station in close enough proximity to be able to respond to a fire at this project. Thus, it would fall upon the limited fire response by the FLV community. This needs to be further evaluated as part of the EIR Process.
Socioeconomics	Individual	The socio economic impacts associated with this project need to be addressed as part of this EIR. For example the number of workers working on this project will likely double the resident population of FLV. This area has limed resources (emergency response, housing and services) and this influx can strain the community.
NEPA Analysis	Individual	It appears that there maybe one or more solar projects also being planned in Esmeralda County (Rhyolite Ridge 2 Solar Project). How will the cumulative impacts of these projects be addressed as part of the EIR for this project?
Alternatives	Esmeralda County	Given the high volume of heavy truck traffic to and from the project site and in the interest of public safety and efficiency we believe that a far better access route would be from state highway 773 to Gap Springs, county road to Cave Springs. county road. We wish to propose this route as an alternative for consideration in the EIS. Using this route would avoid nearly all contact with passenger vehicle traffic, possible collisions with hay trucks, and should an incident occur, it would be far away from any occupied area, and reduce the amount of fugitive dust the county recreation area will be subject to. This route is also shorter.

Issue Category	Organization	Comment[1]
Proposed EPM	Esmeralda County	The weed control measures in the PoO do not include prevention for the spread of weeds from the project area to the agricultural areas in fish lake valley. We would like the requirement to wash or spray with compressed air any vehicles driven off road prior to their departure from the project area.
Transportation and access	Esmeralda County	Access to the project as shown in the plan of operations is a route south on state highway 264 to Hot Ditch, county road to Cave Springs, county road. Along this route ls a small subdivision north of the turn to Hot Ditch Road, a business, and a popular county recreational area. Highway 264 experiences considerable hay truck traffic during the growing season from shipments out of Fish Lake Valley as well as movement of farm equipment traveling at slow speed. As noted in the plan of operations most of the traffic on Hot Ditch Road is destined for the recreational area. Given the high volume of heavy truck traffic to and from the project site and in the interest of public safety and efficiency we believe that a far better access route would be from state highway 773 to Gap Springs, county road to Cave Springs. county road. Using this route would avoid nearly all contact with passenger vehicle traffic, possible collisions with hay trucks, and should an incident occur, it would be far away from any occupied area. This route is also shorter and if driving directions from Sparks, Nevada to Rhyolite Ridge is looked up on Google Maps is shown as the preferred route. Below is an illustration of this route with our suggested route in blue.
Transportation and access	Esmeralda County	There no discussion of supply routes other than the immediate local access road in the PoO. The EIS should include information/data state, or federal highways which will be used to travel to the junction of the designated mine access road.
Transportation and access	Esmeralda County	loneer has told us that the heavy truck traffic will enter Fish Lake Valley from the north and that they will include in their freight contracts the route that must be taken to the site after exiting the state/US highway system. This information should be stated in the EIS.
Transportation and access	Esmeralda County	Under 4.0 transportation routes table 2 characteristics of primary access routes, Gap Springs Road is listed, however, no mention of maintenance to be conducted. Although this is not a prefered route by loneer, the road will be impacted due to Google maps directions from northern Nevada to site. Another county road which may be impacted ,by light vehicle traffic from the project bound to Tonopah, but is not listed is Cave Springs/ Coyote Road which goes to Silver Peak. loneer should commit to providing maintenance required on these secondary access road related to their project which is over and above the routine maintenance done by the county.
Transportation and access	Esmeralda County	Esmeralda County requests proper notifications need to be made to Esmeralda County Road Department on all road closures and reopenings in a timely manner.
Transportation and access	Esmeralda County	Question is what will be the maximum time line expected for public vehicle to wait for escort and are there previsions in place for instances of public breakdowns on property during escort.
Transportation and access	Esmeralda County	All contractors and vendors servicing loneer need prior notifications of restiction on Coyote Road access east side from Silver Peak, by Esmeralda County, i.e. large commercial vehicles such as semis, tractor trailors, 10 wheelers, water trucks, cargo vans, and simular vehicles are prohibited for 7 miles, no exceptions due to access road gradients as signage depicts.
Hazardous materials and waste	Esmeralda County	In regards to mine plan of operations 3.18.11, Solid Waste and Hazardous Waste: Language included solid waste be transported to a licensed landfill. Will that be Esmeralda County Landfill? The impacts to solid waste operations and destination of solid waste should be identified in the EIS. If so, consider the following: at loneer expense, a third-party study of the impacts to Esmeralda County Solid Waste Management should be completed. loneer and Esmeralda County can work together on this study. The study should include the types and volume of waste generated to go to Esmeralda County Landfill by both the mine and employees living in Esmeralda County. Following the completion of the study/evaluation an loneer Solid Waste Management Plan should be completed and approved by the Board of County Commissioners to mitigate the impacts to Esmeralda County Landfill and Solid Waste Operations. The plan should identify any additional uncompensated expense to the county and loneer should compensate Esmeralda County for same.

Issue Category	Organization	Comment[1]
Socioeconomics and environmental justice	Esmeralda County	We anticipate a significant demand for Law Enforcement not only in the Fish Lake Valley, but also in the area of Esmeralda County adjacent to Tonopah as a result of this project. We hope to see a thorough analysis of impacts to both Law Enforcement and Emergency Services in the EIS Esmeralda county anticipates loneer will work with the sheriff's office and county department of emergency management through the Sheriff and DEM coordinator to develop a plan that incorporates all emergency response issues. This coordination should be incorporated in a development agreement The effects on our Law Enforcement and Emergency Services from this project will be greater than any the county has previously experienced. Mining projects in the past having 100-200 employees have been in Silver Peak, or Goldfield where the communities are compact instead of spread out over many miles. Because the nature of this project is very different the county will need a third-party consultant selected by both loneer and the county, and paid for by loneer, be engaged to identify the personnel, equipment, and training needs of the county to adequately provide public safety and emergency services to the project which will be included in the emergency response plan. The study will identify additional costs to the county as a result of the project which should be a responsibility of loneer to compensate Esmeralda County for, until substantial tax revenue from the project is received. This study and compensation for project related expenses should be addressed in the Development Agreement between loneer and Esmeralda County.
Socioeconomics and environmental justice	Esmeralda County	Development Agreement: loneer, USA is cognizant that their project will have many impacts on services provided by Esmeralda County. These impacts range from moderate, in the case of operation and maintenance of community facilities, those that are potentially significant, as in the areas of Law Enforcement and Emergency Services. loneer is working with the county on a development agreement where the obligations and expectations of loneer and Esmeralda County will be specified and may include but not be limited to: transportation and road maintenance; dust and weed mitigation on fallowed farmlands; studies required to determine the impacts on county Solid Waste Operations, Emergency Services, and Law Enforcement; and financial support for county Solid Waste Operations, Emergency Services, Law Enforcement, and upkeep and use of community facilities.
Water resources; vegetation	Esmeralda County	loneer, USA will have to change the point of diversion and use of the agricultural water rights it will either lease, or purchase. The newly fallowed farmland can be a source for fugitive dust, and fertile ground for noxious/invasive weeds to get a foothold. These lands will not be covered in the NDEP Air Quality Operating permit because they will not be considered part of the project. There is nothing in the Pool or, Air Quality reports on this subject, presumably because it is private land, even though this is a direct environmental impact of the project and as so addressed in the EIS. Although the Nevada Revised Statues give local government the power to pass ordinances whereby a land owner can be fined, or a lien put on the property, Esmeralda County has no nuisance ordinances and has not had a need for such in the past. We have had a number of discussions with loneer about this possible problem. They have expressed willingness to incorporate mitigation measures as part of a Development Agreement with the county by requesting that loneer enters into agreement(s) with landowner(s) from whom it purchases or leases water rights where the use, and place of use is to be changed to ensure that dust and noxious weed control best practices, monitoring, and mitigation is attained, on the fallowed land and provide a copy of these executed agreement(s) to Esmeralda County. We also would like assurance that sufficient water will remain with these lands for dust control mitigation i.e.: The application of water in an amount and frequency adequate for the soil to develop a crust; or revegetation.
Water resources	Esmeralda County	Our foremost concern is the possible effects of year-round pumping in the final 13 years of operation. Although there will be no net increase in the volume of water pumped there may be changes to the cone(s) of influence associated with the well(s) used to supply the mine because of the year-round pumping versus the existing seasonal pumping that could adversely affect domestic, or other shallower, wells such as those supplying the Dyer Elementary School and Fish Lake Valley Community Center, located near the mine production wells. In order to ascertain effects, if any, a hydrologic study which includes modeling, reviewed and accepted by Esmeralda County is needed. We want a study completed once the location of the wells that are to be converted from agricultural use to mining are determined, and before any pumping from the valley floor commences so that any possible detrimental effects are identified and mitigation measures can be put in place. The cost of the study and any mitigation measures such as: monitoring wells, or deepening affected domestic, or other shallower, wells should be the responsibility of loneer.
Water resources	Esmeralda County	A clear water demand is not found in the PoO document, and should be included in the Description of Operations. It was conveyed during public scoping meetings that 2,500 gpm, continuous flow, will be required during mining and ore processing. Is this water demand uniform over the mining period? How much water is required during construction? How much water is required during post-mining reclamation? What source will be used for reclamation? How much water production will be produced from the on-site wellfield.

Issue Category	Organization	Comment[1]
Editorial	Esmeralda County	Section 3.9.5 Water Resources; Reference is made to Sections 3.18.12 and 3.18.13. I believe this is intended to reference 3.18.13 and 3.18.14.
Water resources	Esmeralda County	"All necessary water rights have been secured or leased by loneer" - please identify in the PoO document specific water rights, duties and locations. There is considerable ambiguity in the PoO document regarding this source of water for mining and milling. Information contained does not enable determine of potential impacts, or lack thereof, of perpetuating pumping at the points of diversion for the mine water supply.
Water resources	Esmeralda County	"There are few domestic water users in the Fish Lake Valley" This is ambiguous and inaccurate. NDWR well log database identifies 281 domestic well logs in Fish Lake Valley. How many are within the general area of proposed mine process water supply wells? Additionally, there are some community and commercial wells in the valley that should be considered. Question - Could the water right potentially be transferred to locations other than the existing points of diversion for agriculture? If this is possible, please identify in the PoO document.
Water resources	Esmeralda County	3.12.4 Quarry Dewatering. Should 73 gpm in Year 3 be Year 13? If not, what are the predicted dewatering rates through the mining period?
Editorial	Esmeralda County	3.12.4 Quarry Dewatering. References cited in this section are not included in the Reference section.
Editorial	Esmeralda County	Please delineate the on-site wellfield area of Figure 4.
Water resources	Esmeralda County	It is indicated that the on-site wellfield will be producing water for first 7 years. Please clarify, is this for the first 4 years of mine construction, plus 3 years of mining and ore processing? It is indicated that up to 7 on-site wells, 900 ft in depth, along a 3-mile proposed corridor will be utilized. HCL {2020) is referenced - but not included in the References section. Can the PoO document explain why all process water is not be developed from agriculture source and pipeline? Why is the pipeline not being built during the first 4 years in tandem with other mine construction activities? Why is necessary to develop this on-site wellfield to the extent necessary to provide 2500 gpm, as a continuous flow, for only 3 years of use prior to the pipeline water source? Note: Without test well drilling and sufficient aquifer testing, we are concerned about sufficiency of the EIS to evaluate on-site wellfield pumping impacts. Additional information is needed in the PoO to define the construction water supply requirements.
Water resources	Esmeralda County	Groundwater levels near the end of the pipeline shown in the PoO have a long-term declining trend. Are existing AG well depths and yield sufficient, and will they continue to be sufficient though the mining period in light of declining water levels? Have the agricultural water rights "secured" been in active use, or have they been inactive and will represent renewed use above current or recent use for agriculture?
Reclamation	Esmeralda County	Our preference is that the Quarry Lake post closure be a recreation area stocked with fish if the water quality predicted in the ERA, that it will be suitable for wildlife to drink, turns out to be valid then it would also be suitable for certain species of fish and safe to swim in. We want to have a dialogue with BLM and NDOW about this well before the reclamation phase of the project commences as the post reclamation contours and reclamation activities would change if it can be used for recreation. If used for recreation some benefits that could be the result are: The presence of fish would reduce mosquito breeding and hence spreading of disease to wildlife populations. • Human presence periodically would deter wild grazing animals from lingering in the area and reduce the possibility of them grazing on the Tiehm's buckwheat.
NEPA analysis	Esmeralda County	There are a multitude of proposals for projects on public lands in Esmeralda County currently in process. There is the large Centerra Gold Mine north of Goldfield, in the Clayton Valley, because of the proposed Greenlink power line there many square miles of solar panels proposed to be located on public land. Also, in the Clayton valley there are numerous new lithium projects in the works as well as geothermal exploration. If these come to fruition negative effects to Esmeralda County finances will be amplified. We hope to see a thorough analysis of the impacts of development of these probable projects in the EIS.
Socioeconomics and environmental justice	Esmeralda County	The majority of environmental assessments and environmental impact statements for projects located in Esmeralda County address socioeconomic impacts on a regional basis. While the assessment of overall regional impacts may show that the project is beneficial the regional approach buries specific and sometimes harmful impacts to Esmeralda County. We believe that the EIS should address impacts specific to Esmeralda County that are related in the following comments given that we are the host county.

Issue Category	Organization	Comment[1]
Socioeconomics and environmental justice	Esmeralda County	The Rhyolite Ridge Plan of Operations states that the construction period will be four years. The construction workers and contractors will not be from Esmeralda County. If any live in our county they will probably in man camps. When operations commence the work force will be drawn from surrounding counties, and other parts of Nevada and many will already own a home out of the county, choose to rent in Tonopah, Hawthorne etc. where there are grocery stores, retail stores, medical services, and wider choice of rental housing, or may live in a man camp in Fish Lake Valley while on shift. The commuters and RV man camp occupants will not be considered residents for the purposes of tax and P.I.L.T. payment calculations made to the county. Benefits from increased retail sales will be limited due to the nature of the retail establishments in Fish Lake Valley. Purchases of clothing, appliances, and groceries will occur outside of Esmeralda County. The county, however, will incur significant extra costs from their presence for law enforcement, emergency services, and solid waste disposal. The county park, community/ recreation center and Hot Ditch facility will have additional demand with an increase for its use due to the influx of a labor force in the vicinity for the ioneer project. There will be more maintenance expense along with other utilities, electric, propane, waste disposal etc. of these facilities with increased use.
Socioeconomics and environmental justice	Esmeralda County	Relief for our taxpayers will only come when loneer starts paying Property Tax in year 4 and Net Proceeds of Minerals Tax in later years. loneer to their credit is aware of these factors and has expressed a desire to provide financial support to the county to offset some of the extra costs. The specifics of the support will be incorporated in the forthcoming Development Agreement.
Socioeconomics and environmental justice	Esmeralda County	In the PoO it is stated that loneer wants to encourage workers to move to Esmeralda County. Unless employee housing is built or financed by loneer it is unlikely that most will choose or be able to move here for the following reasons: • Financial institutions are reluctant to loan money for housing in the county. • Any new divisions of land in the Fish Lake Valley water basin must have water dedicated. • Much of the existing vacant housing is subpar. • Housing purchased during a boom will decline in value.
Socioeconomics and environmental justice	Esmeralda County	The existence of the Rhyolite Ridge mine will cause upward pressure on the wages of county and school employees. The county already has difficulty in recruiting qualified employees and when we are in competition with the mine the only way to get them will be to offer higher wages. Again, initially there will be no additional revenues available to accomplish this.
Socioeconomics and environmental justice	Esmeralda County	"Access Road" is the County's Response area and any Incident involving multiple Vehicle's or Patients would have a negative effect on additional response in the Fishlake Valley area due to limited staffing and equipment. BLM is responsible for wildland fire control not Structure or Vehicle fires and does not have jurisdiction for this type of Fire Suppression activity. The Plan states "On site Ambulance" this will not be during construction and 400 construction personnel and construction traffic will negatively affect the county's ability to respond at the appropriate levels without augmentation. BLM is not an "all risk" Department and not able to respond appropriately in the case of a "HAZ MAT" or Structure Fire with "HAZ MAT' involvement, Currently the response time is extended for county responders due to location of Mine site and location of EMS/FIRE resources. Rotary wing EMS assets will need refueling for any response to this location and may not be able to fly in this area due to wind and weather throughout the year. Currently the county does not have adequate equipment and personnel for a significant Incident involving Haz Mat or Multi- casualty patient incident. Additional resources from other response areas will have extended ETA's. Mt Grant Hospital is not Listed its location is in Hawthorne, NV with Helipad. Fire Suppression Equipment will not be on site during construction, this will be the Responsibility of the County this will have a negative impact on response to the citizens of the County and the project. On site fire protection is unclear of what type, size, and GPM firefighting apparatus will be available for fire suppression.
Hazardous materials and waste	Esmeralda County	The amount of Fuel and Chemicals to be transported and stored and the amount of traffic on State and County roads will negatively affect the Emergency response capabilities of current County Resources

Issue Category	Organization	Comment[1]
Supportive of project	Nye County	Ioneer continues to be an active participant in the Nye County community. Their open engagement during the development of the plans in Esmeralda County for the Rhyolite Ridge Project is encouraging. Although the project is in Esmeralda County, Tonopah, Nye County is the closest affected community by their project. Nye County looks forward to continuing engagement opportunities with Ioneer. Nye County's Natural Resources and Planning Departments will engage effectively and constructively on the environmental impacts with meaningful analysis and comments during the process of completing their Environmental Impact Statement for the benefit of our residence and community members.
Socioeconomics and environmental justice; Supportive of project	Mineral County	The Mineral County Board of Commissioners would like to express our support for the Rhyolite Ridge lithium-Boron Project in Esmeralda County, proposed to be developed by Ioneer Rhyolite Ridge LLC (Ioneer). We support the Project because we know it is being held to the highest standard of review and believe the Project can be of significant benefit for local businesses and residents in Mineral County. We are fully aware of the Project and understand that it is protective to the environment. Ioneer has provided periodic updates to this Board, and we plan to maintain regular contact as the project progresses. Rhyolite Ridge will provide important economic benefits for Mineral County, the State of Nevada, and the United States more broadly. Ioneer is focusing on local, regional, Tribal, and state businesses to execute its large-scale industrial project. Regional and state contractors have already been involved in the procurement process. Ioneer will place significant recruiting emphasis on local communities and Tribes as it seeks to fill its workforce needs. Ioneer is committed to hiring locally and instituting training programs for workers in the region, including looking to partner with local community colleges and vo-tech institutions to deliver training in advance of operations. Moreover, Ioneer is ta king meaningful recruitment actions, including hosting job fairs for local communities and Tribes and affirmative recruiting in disadvantaged communities in the region.In 2020, Ioneer instituted a scholarship program at the regional high school and has since granted more than $20,000 in scholarships to graduating seniors. Ioneer is also collaborating with local community centers to optimize various socio-economic outcomes, such as housing, schools, and infrastructure. For the reasons above, we express our support for the Rhyolite Ridge Lithium-Boron Project. Thank you for your careful consideration.
Alternatives	USFWS	Please relocate the explosives storage area outside of critical habitat for Tiehm's buckwheat. Based on details provided in Table 1 of 1.0 Introduction we suggest the explosive storage area be placed at least 20 ft outside of critical habitat.
Alternatives	USFWS	Please relocate the quarry out of critical habitat to the extent practicable. Where direct impacts remain, we will need to ensure that any potential effects don't adversely modify the essential PBFs of the critical habitat or preclude recovery of the species.
Alternatives	USFWS	Please reconsider the location and need of the currently proposed fences around Tiehm's buckwheat subpopulations to determine if they will be beneficial or inadvertantly cause unnessary disturbance or adversely modify critical habitat for this species.
Alternatives	USFWS	What is the hatched green "yard" on the map? Depending on what this facility is, we recommend the BLM (or Ioneer), in coordination with the Service, determine an acceptable distance from occupied habitat and/or critical habitat for Tiehm's buckwheat.
Data/Information Request	USFWS	We do not have EMS 2021 anywhere in our files that estimates 24,174 Tiehm's buckwheat plants. Can you please share this with the Service? Additionally, was monitoring conducted in 2022, and if so, can that information also be provided to the Service?
Data/Information Request	USFWS	If field surveys were conducted in 2021 or 2022, this information should be used to update baseline reports and also included in this section.
Data/Information Request	USFWS	There are no calculations shown or PE stamps on the documents in this Appendix. Please provide.
Editorial	USFWS	Tiehm's buckwheat was listed as endangered on December 16, 2022, with designated critical habitat. Please update.
Editorial	USFWS	Is the berm shown on this map going to be the same berm that will be present post-mining activities? Is this a 6.0-ft berm? Where will the 6.0 ft berm that is supposed to surrounded the terminal quarry lake be? Please provide a map showing this.
Editorial	USFWS	Please clarify the discrepencies between Figures 5 and 6 as the "yard" appears to be referenced differently. Also, can this be moved so its not close to Tiehm's buckwheat subpopulations.
Editorial	USFWS	This map doesn't match Figure 4 in the PoO on extent of overburden storage. Please clarify which West OSF footprint is accurate.
Editorial	USFWS	In this section it says "the distance between the mapped subpopulation boundaries and the proposed fence line varies between 12 and 305 feet." This is different than what is reported in the PoO, which says the distance is between 13 -127 ft. Please clarify.

Issue Category	Organization	Comment[1]
Editorial	USFWS	Critical habitat for Tiehm's buckwheat has been established. Please revise and incorporate throughout.
Editorial	USFWS	Please incorporate protection measures for critical habitat, including the PBFs of the critical habitat needed by Tiehm's buckwheat, such as insect visitors and pollinators.
Editorial	USFWS	Regarding the statement: "In addition, and pending a potential final designation of CH, a secondary exclosure fence would be constructed around those portions of any designated critical habitat that would not be impacted by the project." Please provide a map depicting the proposed number and location of fences around critical habitat.
Editorial	USFWS	Regarding the statement: "The distance from the mapped subpopulation boundaries and the proposed primary exclosure fence line will range from 12 and 305 feet." Can more details be provided on this? How does this allow for natural, potential population expansion (i.e. 12 ft isn't a lot of space)? In the PoO, it says the distance is 13 - 127 feet, please clarify what the actual distance is.
Editorial	USFWS	Please expand this section to address critical habitat, including the PBFs needed by Tiehm's buckwheat such as insect visitors and pollinators.
Editorial	USFWS	Please address both direct and indirect effects to Tiehm's buckwheat and its designated critical habitat.
Editorial	USFWS	The reclamation seed mix on p. 59 of the PoO doesn't match the one shown here in Table 2 (species and seeding rates). What is the correct reclamation seed mix and seeding rates?
Editorial	USFWS	To better understand potential effects to Tiehm's buckwheat, please provide the locations of Tiehm's buckwheat subpopulations on all the maps in this Appendix as it is currently difficult to determine how mine phasing will impact the species.
Geotechnical design and stability	USFWS	Please explain the frequency and details of how quarry slopes will be monitored and repaired/reinforced during mining operations and any other activities to monitor and prevent direct and indirect effects to Tiehm's buckwheat. Regarding the plans for placing backfill to stabilize slopes at the end of mining, please provide a sectional view of this fill, and a calculation of the slope stability Factor of Safety that will be achieved by this backfill. We recommend a minimum Factor of Safety of 2.0 for the permanent slope stability after mining. Please describe indirect effects to Tiehm's buckwheat and its pollinators from quarry development including explosive use, noise, dust, equipment, etc.
Geotechnical design and stability	USFWS	Please include details on rainfall, earthquake, or any other natural disaster type of event and how these events, combined with quarry development and configuration may impact slope saturation and stability which may affect Tiehm's buckwheat plants and/or subpopulations.
Geotechnical design and stability	USFWS	Please provide factors of safety of the quarry slopes throughout mine development and closure. Why was a higher factor of safety not considered given that an endangered species and its designated critical habitat sit at the mines edge? We recommend considering increasing the factor of safety to 2.0 during mining or providing additional details related to monitoring and correction that will occur. We recommend a minimum factor of safety of 2.0 in the permanent conditions after mining.
Geotechnical design and stability	USFWS	How can we ensure protection of Tiehm's buckwheat if "the final quarry wall slope designs will be refined during operations to ensure stability is maintained based on results of ongoing engineering studies, conditions encountered during operations, or other factors?"
Geotechnical design and stability	USFWS	Why is the quarry exempt from reclamation requirements? Is this for the entire quarry area or just the terminal quarry lake? Why is it not possible for the quarry to be filled completely in? If it is possible to work in the quarry and extract materials why can't this process also be reversed? Why is it "not feasible to reclaim the slopes of the quarry due to wall instability (over the longer term) and other geologic factors" ? If the slope will be perpetually unstable, how will Tiehm's buckwheat be protected from sliding into the quarry?
Geotechnical design and stability	USFWS	To better understand potential effects to Tiehm's buckwheat, please provide more details related to the following questions: What is the setback from the red line (slope alteration and/or ground anchors) to Tiehm's buckwheat? If there is a backbreak analysis, how far does the backbreak extend for the various sections? Where are the locations of weak layers? Can this be depicted within the PoO?
Geotechnical design and stability	USFWS	Stability calculations were done assuming quarry slopes were dry. To better understand potential effects to Tiehm's buckwheat, please provide more details related to the following questions: What if dewatering the slopes fail or there is a significant precipitation event? This page also says that this area, because of the type of clay it is, may be challenging to dewater. Why weren't stability calculations done for precipitation events if there is concern about slope stability? We recommend conducting slope stability analyses for wet or saturated soils to determine if the factor of safety is still appropriate or if slopes will fail. We also recommend these analyses include whether surcharge loads from heavy trucks are also included since haul roads are along this slope.

Issue Category	Organization	Comment[1]
Geotechnical design and stability	USFWS	To better understand potential effects to Tiehm's buckwheat, please provide more details related to the following questons: Where is M5a layer in relation to Tiehm's buckwheat since this is where Appendix N says the slope is most likely to fail. A map depicting this layer and ground anchors in relation to Tiehm's buckwheat would be helpful. Were plane failures calculated for the M5a layer? Is this included in a backbreak analysis somewhere?
Geotechnical design and stability	USFWS	The minimum slope stability factor of safety is typical for mine development, but low for other civil and structural engineering projects. Geotechnical work involves many unknowns, being underground and out of sight, and thus this project may need a higher factor of safety, especially with consideration of potential effects to Tiehm's buckwheat, an endemic and rare plant species only know from this single location. The consideration of Tiehm's buckwheat should be treated as a special case, especially for the quarry slopes directly adjacent to subpopulations. For example, would this current factor of safety be used if a million dollar home sat at the edge of the quarry, or would a higher factor of safety be used? Please descibe the difference in slope stability and the monitoring that is planned to take place during mining, and also after mining operations end.
Geotechnical design and stability	USFWS	Will the underdrain system also divert water that would normally flow underneath and be accessed by Tiehm's buckwheat? Please evaluate how this may impact the species.
Law and regulation	USFWS	In accordance with section 7(a)(2) of the ESA, federal agencies must consult with the U.S. Fish and Wildlife Service (FWS) on any action that may affect species listed as endangered or threatened to ensure they do not jeopardize the existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat.
Law and regulation; Threatened and endangered species	USFWS	Additional Ore Reserves: How will Tiehm's buckwheat and its designated critical habitat be avoided if the project was expanded and an amended plan submitted? Any substantial change in the proposed project (e.g., the extent or timing of reclamation/restoration) would require reinitiation of consultation. In addition, any future expansion would be subject to reinitiation of section 7 consultation and would require revised baseline assessments.
Livestock grazing, Recreation	USFWS	In the final rule listing Tiehm's buckwheat as an endangered species (Service 2022; 87 FR 77368, 77368-77401), livestock grazing and recreational off-highway vehicle use were identified as potential threats to the species. How will this proposed project impact existing land uses such as livestock grazing and recreation?
Plan of Operations	USFWS	Please clarify throughout what is currently described as growth media. Does this include salvageable native plants from the project footprint? Will this also include salvaging native plants and seed collection of native species pre-disturbance (we recommend this for reclamation purposes)? What types and species of native plants does Ioneer intend to salvage?
Plan of Operations	USFWS	Please clarify throughout on what the difference is between growth media stockpiles, stockpiles, and overburden storage areas and, what type of material is being stored where. Is the purpose of overburden storage facilities to store stockpiles? Do overburden storage areas store anything else besides stockpiles or is all material within an overburden storage facility considered a stockpile? On Figure 4, growth media stockpiles are located near the processing facility and spent ore storage area, not in the overburden storage areas.
Plan of Operations	USFWS	Are autonomous vehicles accounted for in Table 1 on p. 6? What vehicles in this table will be autonomous?
Plan of Operations	USFWS	In the described life of the proposed proposed project section, it is stated that reclamation will start on year 18. Why is reclamation not starting sooner? We recommend reclmation be initiated as soon as possible and be conducted in a phased process concurrent with mine development.
Plan of Operations	USFWS	On pg. 1 (second to last paragraph) the life of the project is listed as construction phase, mining phase, processing phase, and reclamation/closure phase, but on pg. 2 it says the quarry will be excavated during the operations phase. What is the operations phase? Is the operations phase the same as the mining phase? What year will the quarry begin excavation?
Plan of Operations	USFWS	What is the slot mine quarrying method? Has this method proved feasible? If so, has a revised mining and backfilling design been provided to BLM?
Plan of Operations	USFWS	Why was the west overburden storage facility constructed to completely surround Tiehm's buckwheat? We recommend removing this from designated critical habitat as there are other locations within the project footprint this could be located without having direct impacts to designated critical habitat and indirect impacts to Tiehm's buckwheat.

Issue Category	Organization	Comment[1]
Plan of Operations	USFWS	As proposed, the fully developed west overburden storage will be higher in elevation than occupied Tiehm's buckwheat habitat and the quarry will be developed immediately to the east of occupied Tiehm's buckwheat. Please explain what precautions will be taken to prevent failures of these facilities (such as catastropic events like earthquakes or heavy rains) from impacting Tiehm's buckwheat (e.g., soils from the overburden storage slide or erode on top of Tiehm's buckwheat, or slopes collapse and occupied habitat slides into the quarry?
Plan of Operations	USFWS	How will achieving revegetation success criteria of "close to 100 percent of the perennial plant cover of selected comparison areas" be achieved? Will all disturbed areas of the project footprint be revegetated? Please provide more specific details, preferably with a map, on the locations of anticipated revegetation. Also please provide more details related to timing, techniques, species, and metrics of success for restoration.
Plan of Operations	USFWS	What does this sentence mean: "OSF surface slopes will no longer produce contact water runoff as they are reclaimed and covered?" Is contact water runoff water from rain or snow storms? Is it the assumption that seeded vegetation will provide stability to OSF areas?
Plan of Operations	USFWS	How will the susceptibility of washouts on Cave Springs road be addressed? And if there is this much susceptibility of washout to the road from precipitation events, why is this same level of concern not applied to Tiehm's buckwheat and potential impacts from precipitation events that could impact the west overburden storage area or stability of the quarry slope?
Plan of Operations, Soil Resources	USFWS	Where will the soil stockpiles be stored? How long will they be stored? Can chemical properties of the stockpiled soil change over time (i.e. weathering)? Is there any potential for Tiehm's seeds to be in the stockpiles (i.e. seed bank), if soils are salvaged from areas within dispersal distance of Tiehm's plants? Why will the stockpiles be seeded with interm seed mixes to stabilize the soil if there is an existing native seedbank in these soils? What is considered growth media? Please clarify throughout.
Plan of Operations; Reclamation	USFWS	Please describe what concurrent reclamation would look like and how it may or may not directly or indirectly affect Tiehm's buckwheat and its critical habitat. What surface soils within the quarry may be suitable soils for Tiehm's buckwheat? Please provide details on how direct seeding and transplantation will be done.
Plan of Operations; Threatened and endangered species	USFWS	The revised Plan of Operations (PoO) does not currently sufficiently address the physical and biological needs of Tiehm’s buckwheat or address the critical habitat in the Tiehm’s Buckwheat Protection Plan (Appendix I). We recommend updating this plan in the revised PoO to address both the physical and biological needs of Tiehm’s buckwheat and its designated critical habitat.
Plan of Operations; Threatened and endangered species	USFWS	Which proportion of these areas will be used to propagate Tiehm's buckwheat? Who will be conducting this research? Please provide a map with all the potential areas for propagation. If these areas are not subject to the vegetation release criteria described in Section 4.7.8, what criteria will they be subject to for assurance that if propagation doesn't work, these areas will not adversely affect critical habitat or the PBFs for Tiehm's buckwheat?
Plan of Operations; Threatened and endangered species	USFWS	To better understand potential effects to Tiehm's buckwheat and its pollinators and insect visitors, please provide more details related to the following questions: What level of dust will be monitored? How will dust be monitored? What will happen if the amount of dust generated hits a threshold? Please also address dust impacts to the critical habitat and insect visitors and pollinators.
Plan of Operations; Threatened and endangered species	USFWS	Regarding the statement: "Control and removal of both nonnative and natives species may occur, in collaboration with BLM, to aid in the creation of Tiehm's buckwheat habitat." What does this sentence mean? Where will this habitat be created? At what phase of the mine life will this be done (i.e. is this happening during mining or is this a reclamation activity)? Please provide more details.
Reclamation	USFWS	Have comparison or reference areas been selected from representative plant communities to help define reclamation success? How many comparison or reference arears will be selected? How is vegetative growth deemed successful by BLM?

Issue Category	Organization	Comment[1]
Reclamation; Threatened and endangered species	USFWS	As proposed, the project will create habitat altering disturbance within 12 feet (ft) of occupied habitat for the federally-listed as endangered Tiehm's buckwheat, remove approximately 38 percent of designated critical habitat for this species, and create a permanent quarry and pit lake within designated critical habitat. To sufficiently minimize adverse effects and avoid jeopardizing the continued existence to Tiehm's buckwheat and to sufficiently minimize adverse effects and avoid adversely modifying critical habitat we recommend the proposed Rhyolite Ridge project to be redesigned in ways that will substantially reduce potential indirect effects to the species and direct and indirect effects to the critical habitat. In addition, the Plan of Operations does not adequately describe or commit to reclamation that will confidently replace and maintain the essential physical and biological features (PBFs) that were described in the final rule listing. These PBFs, identified because they are considered essential to the conservation of the species are 1. Plant community 2. Pollinators and insect visitors 3. Hydrology and 4. Suitable soils. More details on these PBFs for Tiehm's buckwheat can be found in the final rule listing this species and designating critical habitat (Service 2022; 87 FR 77368, 77368-77401).
Threatened and endangered species	USFWS	This appendix is dedicated to access road and maintenance plans for the roads. Dust control measures are described in this appendix, but only for roads. What about other dust generated from this project? In addition to the dust control measures for roads, please incorporate dust control measures for other project-related activities (e.g., blasting and drilling) to ensure there are no adverse effects to Tiehm's buckwheat or adverse modification to its critical habitat.
Threatened and endangered species	USFWS	To better understand potential effects to Tiehm's buckwheat and its critical habitat please provide more details related to the following questions: How will proposed road realignment or additional roads developed affect Tiehm's buckwheat and critical habitat? Have all the road realignments been approved by Esmerelda County? The Service recommends incorporating measures along Cave Springs Road and any associated realignment of Cave Springs Road that will reduce fugitive dust and erosion potential such as rocking and graveling the roadbed.
Threatened and endangered species	USFWS	Are the dust mitigation measures (Appendix L) enough to offset this level of vehicle traffic and the impacts to Tiehm's buckwheat and its insect visitors and pollinators? Will dust monitoring stations be installed?
Threatened and endangered species	USFWS	Please analyze potential effects to subpopulation 1 and critical habitat from the proposed road realignment and incorporate minimization measures and BMPs that can sufficient reduce any effects.
Threatened and endangered species	USFWS	The monitoring section is vague. We recommend that sampling locations and monitoring protocols be selected in cooperation with the USFWS and partners. We also recommend that surveys and monitoring be conducted by a USFWS-approved biologist/botanist. following monitoring be conducted by a USFWS-approved biologist. Monitoring should be conducted to assess status of Tiehm's buckwheat as well as threats to the species such as dust and noxious and invasive weeds.
Threatened and endangered species	USFWS	Vehicular traffic along Cave Springs Road, as a result of the proposed mine, is estimated to increase by up to 175 trips per day. Please analyze how this level of increased traffic will affect pollinators and insect visitors of Tiehm's buckwheat.
Threatened and endangered species	USFWS	Please describe how the North Overburden Storage Facility will or will not have direct or indirect effects to Tiehm's buckwheat in subpopulations 1 and 2 or the PBFs of critical habitat for this species.
Proposed EPM	USFWS	To minimize potential adverse effects to Tiehm's buckwheat, please evaluate using rock/gravel to stabilize Cave Springs Road and any additional re-routing along Cave Springs Road within critical habitat rather than applying the proposed chlorine-based solutions or proprietary polymer-based solutions.
Proposed EPM	USFWS	Please reduce the speed limit from 45 mph (existing) or 35 mph (proposed) to 15 mph within critical habitat for Tiehm's buckwheat to reduce dust and insect visitor and pollinator collision with vehicles.
Proposed EPM	USFWS	Establish at least 300 ft (91 m) buffers between any road and ground disturbing activity and Tiehm's buckwheat individuals to avoid indirect impacts of dust deposition on the species. This includes developing BMPs for dust generated by all ground disturbing activities, including dust from vehicular traffic along roadways.
Proposed EPM	USFWS	In addition to the comments provided here, we are providing a second document titled "Tiehm's Buckwheat Conservation Measures for the proposed Rhyolite Ridge Lithium-Boron Project". These Conservation Measures are intended to avoid and minimize adverse affects to Tiehm's buckwheat and designated critical habitat and would like to see them incorporated throughout this project.

Issue Category	Organization	Comment[1]
Proposed EPM	USFWS	In the final rule designating Critical Habitat for Tiehm's buckwheat (Service 2022; 87 FR 77368, 77368-77401), PBFs were identified insect visitors. For the proposed project, why were topographic characteristics the only thing considered when defining buffers of 13-127 ft for Tiehm's buckwheat? Why weren't insect visitors or pollinators or future natural dispersal of Tiehm's buckwheat considered? In our attached and recently provided Conservation Measures document, the Service recommends at least a 300 ft buffer between any ground disturbing activity and Tiehm's buckwheat individuals. Please reference this document for more details.
Proposed EPM	USFWS	How will blasting impact pollinators that support Tiehm's buckwheat? Pollinators and insect visitors were not discussed anywhere in the PoO or appendices. We recommend developing BMPs for pollinators and insect visitors of Tiehm's buckwheat that minimize direct and indirect impacts from noise (construction and vehicle noise), collision with vehicles, dust, light pollution, and herbicide use to breeding, nesting, and foraging habitat.
Vegetation	USFWS	Please also include monitoring for nonnative, invasive plants in your maintenance activities. Given that saltlover (*Halogeton glomeratus*), has already invaded disturbed areas in the project area, we can assume that it is likely to invade newly disturbed areas from project activities.
Vegetation	USFWS	We recommend developing BMPs for herbicide use/handling to ensure that there are no adverse effects to Tiehm's buckwheat or adverse modification to critical habitat. We have provided examples in our Conservation Measures document.
Water resources	USFWS	We anticipate the seasonal agricultural use of water rights in Fish Lake Valley are different than the amount of water anticipated to be needed for this project. Please provide a detailed analysis of the historic annual agricultural use of the existing wells in Fish Lake Valley and how this will compare to the proposed use for the project.
Water resources; Wildlife and special status species	USFWS	To better understand potential effects to Tiehm's buckwheat and its critical habitat please provide more details related to the following questions: How will the anticipted water use from the proposed project impact the hydrology of habitats associated with Tiehm's buckwheat and designated critical habitat? How would the proposed project and other proposed geothermal projects in the Fish Lake Valley area cumulatively impact the hydrology of this region? How will the proposed water extraction from pump stations located on private land in Fish Lake Valley impact the groundwater supporting rare aquatic-dependent species found in this area such as the Fish Lake Valley tui chub and Fish Lake Valley springsnails?
Water resources; Wildlife and special status species	USFWS	How will pumping from existing wells in Fish Lake Valley impact the groundwater supporting the Fish Lake Valley tui chub or Fish Lake Valley springsnails?
Review period	Timbisha Shoshone Tribe	The Timbisha Shoshone Tribe respectfully requests an additional 30day extension to the NEPA scoping period for the proposed Rhyolite Ridge mine in Fish Lake Valley.
Public involvement	Timbisha Shoshone Tribe	The scoping process is essential for Tribes impacted by federal permitting under NEPA and to identify cultural and historic resources protected by NHPA. Executive Order 13175 calls for coordination with Tribes on federal actions with Tribal implications. The CEO has issued a memorandum of guidance urging federal agencies to actively solicit the input of Tribes for NEPA. Furthermore, recent White House commitments focus on the inclusion of Treaty Rights and Indigenous Traditional Ecological Knowledge (ITEK) in federal decisions. These actions warrant special attention to ensuring the involvement of Tribes in NEPA should the Tribes be interested in engaging.
Native American concerns and consultation	Timbisha Shoshone Tribe	The Timbisha Shoshone Tribe is a federally recognized Tribe. Our community will be impacted by the proposed Rhyolite Ridge mine in terms of culture, environment, and economics. It is the BLM's trust responsibility to right to formal ongoing consultation provide reasonable additions of time to engage in scoping comments.
Public involvement	Timbisha Shoshone Tribe	The Timbisha Shoshone Tribe would like to engage in scoping for the proposed project, however due to certain circumstances, we are unable to do so before the close of scoping on Friday February 3rd. As is the case with many Tribes, we lack capacity and resources. Furthermore, the Timbisha Tribe currently does not have an acting Tribal Historic Preservation Officer {THPO) and is in the process of staffing. It is the role of the THPO to engage in NEPA for the Tribe. Without an acting THPO and with numerous essential responsibilities for day-to-day operations falling on our other Tribal representatives and staff, we will not be able to submit our concerns and questions as scoping comments.

Issue Category	Organization	Comment[1]
Native American concerns and consultation	Timbisha Shoshone Tribe	We understand that we can still comment on the subsequent DEIS and EIS without having submitted scoping comments. However, our Tribe holds certain values and knowledge regarding the project site which should be included in decision making early in the process. These concerns are unlikely to be raised by non-Tribal entities. It is in the best interest of the lead federal agency to ensure that our Tribal comments are included in scoping to help inform the DEIS, satisfy federal commitments to considering ITEK and treaty rights in decision making, and to avoid time consuming re-analysis should these concerns be raised later in the process.
Review period	Timbisha Shoshone Tribe	We understand that the scoping period was already granted an extension. Due to the circumstances explained in this letter, we will not be capable of commenting by February 3rd despite our significant interest in participating in NEPA. We respectfully request of the BLM to provide the Timbisha Tribe the opportunity to engage through an additional 30 day extension. If the lead agency is unable to provide a second extension, we would like to request a special consideration be made on our behalf as a federally recognized Tribe to be able to submit scoping comments after the deadline and have the comments added to the federal record. Sincerely, Jimmy John Thompson Tribal Chairman
Water Resources	Timbisha Shoshone Tribe	The Timbisha Shoshone Tribe has some concerns with the Rhyolite Ridge Lithium-Boron Mine Project: What will be the impact to the springs? How will the surrounding springs be protected from drying up?
Cultural Resources, Vegetation	Timbisha Shoshone Tribe	All plant life will be affected by the lack of water. The endangered plants, plants/trees that are used for medicine and food. Our people come to this area to gather plants and seeds for medicine and food.
Wildlife, Hazardous materials and waste	Timbisha Shoshone Tribe	The mountain sheep have a mating season in this area and return every year. This project may cause a reduction in the births or deformities from whatever chemicals are used. This does not just affect the mountain sheep but all animals.
Hazardous materials and waste	Timbisha Shoshone Tribe	There will always be the danger of chemical leakage, from heavy equipment and holding ponds, that will put plants and animals as well as humans in danger. This area has always had flooding, which could mean chemicals being washed down to the valley
Noise	Timbisha Shoshone Tribe	The vibration and noise from heavy equipment will have a great effect on the animals, springs, plants and cultural sites and artifacts.
Socioeconomics and environmental justice	Timbisha Shoshone Tribe	Extraction and processing are typically water and energy intensive and usually contaminate waterways and soil. Native Communities and eco-systems are being sacrificed to fight climate change, remember alongside these dramatic changes to the natural environment, mining is linked to human rights abuses, respiratory ailments, dispossession of indigenous territory and labor exploitation just to name a few. Once the brine is pumped and arrayed in lithium-rich concentrate is wrested, the mining company will accumulate profits and leave behind poverty and contamination. Margaret Cortez Tribal Chairperson
Native American concerns and consultation	Western Shoshone Defense Project	On October 1, 1863 the United States entered into the Treaty of Ruby Valley, a treaty of peace and friendship that did not cede land to the United States. Since then the Western Shoshone people have been fighting for treaty rights and land rights. As a result the Western Shoshone Defense Project was established in 1992 to assert Shoshone rights against violations to the entire Western Shoshone land base. The Western Shoshone people have occupied this space of approximately 60-million acres since time immemorial and have a deep connection to the land, air, water and sun/spirit (LAWS). Since the coming of Europeans we have witnessed the continuous destruction of our land at the hands of mineral extraction. This has had negative impacts not only on the Shoshone way of life but also negatively affects plant and animal life. We understand the United States stance on "green energy" extraction and fear the continued mineral extractions will deplete the health of Newe Sogobia (the peoples earth mother). As Newe we are charged with defending the future of our people and submit our objection and comments accordingly.

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Native American concerns and consultation	Western Shoshone Defense Project	Over the past few decades the Western Shoshone people have litigated our land rights that propelled us into International proceedings of the United Nations Committee on Racial Discrimination (UNCERD) which in August 2022 (report 10-12 attached) concluded and made recommendations to the United States. • Adopt further measures to honor the treaties entered into with with Indigenous Peoples and significantly strengthen consultation mechanisms with Indigenous Peoples on the implementation of these treaties, also with a view to settle disputes concerning land rights; • Guarantee, in law and in practice the principle of free, prior, and informed consent, in accordance with the UN Declaration on the Rights of Indigenous Peoples and other relevant international standards, as well as the right of Indigenous Peoples to be consulted on any legislative or administrative measure that may affect their rights; • Adopt measures to effectively protect the rights of Indigenous Peoples from adverse impact by extractive industries and infrastructure projects.
Native American concerns and consultation	Western Shoshone Defense Project	In another CERD decision, Early Warning and Urgent Action Procedure Decision 1(68) (attached Ex.). "The Committee recommends to the State party that it respect and protect the human rights of the Western Shoshone peoples, without discrimination based on race, color, or national or ethnic origin, in accordance with the convention. The State party is urged to pay particular attention to the right to health and cultural rights of the Western Shoshone people, which may be infringed upon by activities threatening their environment and/or disregarding the spiritual and cultural significance they give to their ancestral lands".
Native American concerns and consultation	Western Shoshone Defense Project	Recent Federal Commitments to Indigenous Rights Although not all of this history is written, the information and events referenced in these comments are verified by local traditional elders. This oral process of understanding ecological history and social history is a principle of Indigenous Traditional Ecological Knowledge. In November of 2021, the White House Office of Science and Technology Policy (OSTP) and the White House Council on Environmental Quality (CEQ) signed a memorandum committing to elevating Indigenous Traditional Ecological Knowledge in decision making. As part of this commitment the federal government must respect local Indigenous understanding of community and ecological history. In November of 2022, the White House hosted the second Tribal Nations Summit of Biden's Administration. At the summit, 17 federal agencies approved new best practices to integrate treaty rights into decision making. How will federal agencies follow through on this commitment and Shoshone treaty rights from the Treaty of Ruby 1863 in federal decision making.
Water resources; Wildlife and special status species	Western Shoshone Defense Project	Impacts to Sprjngs and Wildlife It is expected that dewatering of the proposed mine would dry up cave Springs and the surrounding springs as well. The bighorn sheep that water at cave springs and also mate during the months of September through November will be greatly disturbed and impacted by the mining project during those times that they are supposed to be left alone to procreate. The mountain ranges around Cave Springs are their mating grounds and if disturbed, the health and welfare will be compromised and a decline in population may occur. The spring east and the spring northeast are primarily used by deer and the springs further to the northeast are used primarily by the bighorn sheep.
Water resources	Western Shoshone Defense Project	The impact of dewatering the ground water by the mine would have a detrimental effect on the local springs in the area. Springs would dry out and the biodiversity of the plant and animal life would forever be altered, losing endangered species and non-endangered species as well in this beautiful landscape.
Water resources	Western Shoshone Defense Project	There are many springs in the surrounding area and to the west, the White Mountain range that the flora and fauna would be impacted if the proposed mine were to go forward. The oldest living tree, the bristlecone pine is in the White Mountain range. There are many creeks and wetlands in the White Mountain range and the dust and pollution may travel and affect aquatic life. Fishing has been done in these creeks by Western Shoshone and modern anglers alike and it would be great if we were able to consume these fish without worrying about contaminants in the fish from mining. We all know that in northern Nevada where so much hard rock mining is taking place, people are warned that they can only consume one fish per month and women that are pregnant and children are advised not to eat any fish at all. This is a dire warning of the consequences mining can have, and it baffles me that we as human beings believe we can continue to pollute the earth to where we can't grow or consume the foods upon the land where we live. It will only become more problematic when we are forced to have foods brought from further and further away and costing astronomical prices.

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Native American concerns and consultation	Western Shoshone Defense Project	However, some background is necessary; Animals that Western Shoshone Peoples economies were based on like the bighorn sheep and the pronghorn were purposely exterminated in the 1800. One example was around Stonewall Mountain east of Lida NV, it was reported by Shoshone that over 200 pronghorns were shot and killed by Euroamericans and left to rot during the 1880's to make room for cattle and sheep and to starve Shoshone peoples. Cattle, sheep and goats spread disease to the bighorn sheep and pronghorn, reducing their numbers inflicting an economic blow to Shoshone Peoples. How will the economic impact to Indigenous subsistence practices be analyzed, and what mitigation is proposed? Shoshone made corrals to pin the pronghorn twice a year, selecting animals to be taken for food, tools, etc. Shoshone also educated selected bighorn sheep to bring the other bighorn sheep around the people creating a sort of relationship comparable but independently different to how Euroamerican ranchers work with their animals.
Water resources, Cultural resources, Native American concerns and consultation	Western Shoshone Defense Project	Cave Springs and Continued Cultural Identity Cave Springs is an irreplaceable Western Shoshone sacred site which is essential to the continued intergenerational transmission of local Shoshone identity. The cultural practices involving Cave Springs can not be achieved at any other site. Cave Springs is a location where Western Shoshone families go to educate young people about Shoshone identity and share sacred teachings through story. There are specific cultural protocols regarding when and where certain knowledge can be shared, and thus the ability to learn and enact localized Shoshone identity is inextricably linked to Cave Springs. It is not simply the flow of water that enables its cultural function, but rather the integrity of the entire spring system including its groundwater source. Therefore, the destruction of Cave Springs would result in an inability to pass on teachings that enable us to be Shoshone. A loss of this site would be a loss of cultural identity and an effort to erase the existence of Western Shoshone people.
Native American concerns and consultation, Vegetation, Wildlife and special status species	Western Shoshone Defense Project	Indigenous Traditional Ecological Knowledge The knowledge that had passed down for generations upon generation has been practically extinguished by the racist attitudes and antiquated colonial laws of the U.S government. Europeans and the U.S. forbid traditional cultural practices and ignored Newe laws In protecting the life of the earth Mother. Springs and waterways were cleaned and managed for the life of the natural world and this proposed mining project is not good management practices because this is only going to cause death, destruction and the damage to the biodiversity of the flora and fauna at the proposed mine site and surrounding area. You only have to look at any mining site in Nevada to see the destructive outcome of mineral extraction.
Threatened and endangered species	Western Shoshone Defense Project	The Buckwheat is a plant that will not be the same plant if moved or transplanted to another habitat and may even die off. Shoshone Peoples use and have used certain plants in certain areas and/or habitats because of the cultural, spiritual, food and medicinal value of those plants. This practice goes for animals and all other possessions used upon our Newe Sogabia (Shoshone earth mother).
Vegetation	Western Shoshone Defense Project	The pinion trees in the area of Cave Springs were and are highly prized because of their golden colored pine nut shells and high fat content of the seed. If the mine is to go forward, it would forever pollute and hinder the health benefits of this highly important food source. Mining has used pinion trees in the mining process and whole stands of pinion trees have been cut down and eradicated.
Vegetation, Climate change	Western Shoshone Defense Project	Pine nuts were shared with the deer and other animals when our people were out picking pine nuts and sharing with the natural world as well as for ourselves is still practiced today. The pinion tree and its nuts are sacred and ceremonies, prayers and offerings are always given. The effects of climate change have already negatively affected all life as we know it. Pine nuts have become scarce and the pinion trees are producing nuts in smaller and smaller areas. This has a detrimental effect on the natural world because not only Shoshone and other indigenous peoples use the trees and nuts but the animals and birds alike. In the past, the pine nut bird could be heard in the mountains making their rounds to gather the pine nuts in big flocks, but now, you will be lucky to see a few here and there. This is very concerning because the natural world is out of balance and the earth mother will not take much more of these backward beliefs that humans can continue to take, take and give nothing back to the earth mother. The arrogance and ignorance of the U.S government and these multinational corporations are taking us down a destructive path to pollution and loss of the biodiversity of our natural environment.

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Water resources, Air quality	Western Shoshone Defense Project	Additional contamjnation concerns Mining in other parts of Nevada have contaminated ground and surface water, air and lands while some mines have become superfund sites that will have a lasting impact on all life around the world. There is only one air that we all breathe and only one water that humans, plants and animals take in and it's only a matter of time before we all face the consequences of the dirty extractive industries reckless and irresponsible industry. Around the world today, in our water supplies, there are what are called per-polyfluoroalkyl substances (PFAS) that are already polluting our water, let's not add to it by adding more pollution from mining.
Hazardous materials and waste	Western Shoshone Defense Project	Radiation from nuclear fallout from the Test site where over 900 nuclear weapons testing have taken place would have most likely dispersed nuclear fallout around the proposed mine site. Has the BLM done any studies on the nuclear fallout in and around the proposed mine site?
Native American concerns and consultation	Western Shoshone Defense Project	Treaty of Ruby Valley 1863 The Western Shoshone treaty of 1863 did not cede its lands and territories to the United States of America and true ownership belongs to the Western Bands of the Shoshone Nation. The BLM is committing fraud against the Western Shoshone through antiquated colonial laws. There has been no review of the discriminatory antiquated colonial laws and concepts used against the Western Shoshone and other Indigenous peoples by the United States and its BLM and other government agencies. U.S. Indian policy and its basis in the Doctrine of discovery, plenary power Doctrine, and the trustee relationship by the United States making the assertion that the Western Shoshone Peoples had no right to property, due process of law and equality under the law because they were non-Christian and Non-European is outright systemic racism. The use of the Doctrine of Discovery when European nations claimed to have discovered indigenous peoples lands was well established in international law at that time that natives had property rights and was only meant to regulate the relation between European Nations. The action of the second continental Congress on July 4, 1776 creating the declaration of independence was the beginning of what amounts to a rouge government that broke away from its European nation and begun the U.S. government and its citizens destructive and abusive pattern of racism and extermination policies against Indigenous Peoples across North America through their corporate and discriminatory legal framework. The Western Shoshone have the right to property, due process of law, equality under the law and the freedom of religion and should be respected and guaranteed just as it is guaranteed to every other U.S. citizen. The use of these discriminatory antiquated colonial laws (Doctrine Of Discovery, Plenary Power Doctrine, Trusteeship Relationship, extermination policies etc.) have been used against the Western Shoshone from first contact and used against Indigenous Peoples across North America by the U.S. government and its citizens that committed land theft, rape, mass murder and used extermination policies thus committing the North American genocide of the original peoples of this continent.
Native American concerns and consultation	Western Shoshone Defense Project	History of federal Extermination Policy Right here in Fish Lake Valley on first contact, it has been estimated that there may have been approximately 3000 Western Shoshone in Fish Lake Valley alone. Shoshone irrigation systems and agriculture were destroyed just as they were destroyed in the Owens valley and in other parts of the North American continent. This strategy was a way of dehumanizing Western Shoshone and Owens Valley Paiute/Shoshone by pushing the idea that Paiute and Shoshone peoples were nomadic hunter/gatherers wandering aimlessly in the pursuit of food. Between the 1840's and 1880's, extermination policies took place all across Nevada and California by Indian Hunters that were paid by the state(s) of California and Nevada and reimbursed by the federal government. Scalps, hands, heads and other body parts were taken for rewards paid by the government and taken as trophies by murderous Indian hunters. Stories of a man named Dyer was passed down through oral stories how this man, Dyer, went around murdering men, women and children clearing the valley for Euroamerican use. What was told to me is horrifying that he and other Euroamericans are burning villages and throwing babies and small children into these fires as a way to cover up the atrocities of sadistic cold-blooded murders.

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Native American concerns and consultation	Western Shoshone Defense Project	Cultural Values Western Shoshone are antiwar in the European sense of the word and like most indigenous peoples of the North American continent, life was sacred and taking a human life was basically taboo. Murder, rape and domestic violence was practically unheard of before European contact so when Europeans and Euroamericans committed the atrocities of mass murder, rape, theft and a total disregard for traditional Property and boundaries of Indigenous Peoples, this was all foreign and traumatic. Even taking animal life and/or plant life, there were always prayers and thanks that went with taking life from the earth mother. All life was respected from the largest life forms to the smallest life forms, everything had a purpose and it all came from the earth mother and from the sun (being like the father) bringing life to the Earth Mother whose lives are also respected and given prayers. Shoshone believes in the creator that created all life as we know upon the earth mother plus the creation of the sun, moon, stars and galaxies that we look to the heavens from our Earth Mother.
Native American concerns and consultation	Western Shoshone Defense Project	Historic Impacts and Exclusion from Mining Benefits Mining has been fatal for Western Shoshone and Indigenous peoples across the North American continent. In 1880 smallpox infested blankets were distributed to Western Shoshone in Lida spreading smallpox throughout the community of around 500 Western Shoshone reducing their population to small pockets of Shoshone. This germ warfare was done to take control of the water to export to nearby Euroamerican mining camps. Even when Shoshone tried to take part in the mining economy, Shoshone were murdered for their mining claims and profits from mining and/or forced to sell their claims at despicable low prices because of the systemic racism that Indigenous peoples had no right to property stemming from the racist discriminatory antiquated colonial laws. A couple of examples are as follows; The Rhyolite mine near Beatty Nevada was founded by a Shoshone man (whose relations carry the last name Shoshone) and he was forced off that mining claim and forced to sell for a minimal amount of money. Another Shoshone Man named Rawhide in the 19401s was pushed off his claim by Euroamericans who told him he had no right to property and no right to stake a mining claim. These two examples are hardly unique, this happened time and time again across Nevada and California.
Socioeconomics and environmental justice	Western Shoshone Defense Project	The Department of Energy has conditionally committed to a $700 million loan to the mining company loneer for the Rhyolite Ridge Project. In August of 2022, the White House announced the Justice 40 initiative. Justice 40 commits to ensuring that at least 40% of federal spending on climate and energy go to disadvantaged communities. How does the federal government plan to ensure that Justice 40 is implemented in regards to the proposed Rhyolite Ridge Mine and local Indigenous communities.
Socioeconomics and environmental justice	Western Shoshone Defense Project	I've personally witnessed the mine closers in the Death Valley National Park and how much revenue the mines produced and to see how taxpayers paid millions of dollars more then the profits that came out of those mines to make those mines safe for recreation etc. It's mind boggling that the American public, state government, local government and the federal government would allow this archaic law to continue to allow multinational extraction companies to continue to profit off these lands in this manner.
Transportation and access	Western Shoshone Defense Project	The tractor-trailers that are going to be hauling the ore are going to cause early degradation of the highway(s) which taxpayers will likely have to pay the bill for the maintenance of the highway(s). Please accept the comments of the Western Shoshone Defense Project regarding the lithium mine at Rhyolite Ridge. Respectfully, Mary Gibson, Board Member Western Shoshone Defense Project Joe Kennedy, Board Member Western Shoshone Defense Project

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Public involvement	Western Shoshone Defense Project	Supplemental Western Shoshone comments for the proposed Rhyolite Ridge project. The Western Shoshone Defense Project has been active in the protection of land, air and water impacted by mining and other extraction activities since the early 1990's. We appreciate this opportunity, please accept this correspondence regarding the Rhyolite Lithium Mine as a supplement to our comments mailed February 3, 2023. We were not made aware of the scoping period in advance, and had limited time to work on our initial comments. We did not adequately characterize the colonial and genocidal history of federal policy in the region and how the current mine proposal is made possible by ongoing human rights violations. Therefore, may the record reflect these comments in addition to those previously submitted. The Western Shoshone Distribution Act that was thrust upon the Western Shoshone people is illegal under U.S., international and Western Shoshone law. The monetary compensation for Western Shoshone Lands and Territories amounts to systemic racism against the Western Shoshone Peoples through U.S. discriminatory laws created to dispose Shoshone of lands, territories and resources.
Out of scope	Western Shoshone Defense Project	<u>The Indian Claims Commission (ICC) and the Western Shoshone Distribution Act.</u> The Indian Claims Commision is another racist and discriminatory concept created by the U.S. government to swindle Indigenous Peoples out of their lands, territories and resources. The ICC was a concept that the U.S. government implemented because of the illegal process by which the U.S. claimed possession of Indigenous Peoples property. If it were not for this discriminatory concept, trillions of dollars would be owed for damages of Indigenous Peoples property, and the rightful property holders would still oversee and control their original lands and territories. The Western Shoshone Distribution Act came out of this racist and discriminatory concept of the U.S. government.
Out of scope	Western Shoshone Defense Project	<u>The Northwest Ordinance of 1787</u> In 1787, the U.S. government wrote and ratified the Northwest Ordinance which outlined how the U.S. was going to bring the lands and territories of Indigenous Peoples under the control of the U.S. government, however, the U.S. needed to make itself look legitimate in the eyes of the world because they were still looked upon as a rogue government by European Nations and other Nations of the world at that time. To give the impression that the U.S. was following international law of the times and how it dealt with nations of the world, language was written in the Northwest Ordinance under Art. 3 *"Religion, morality, and knowledge, being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged. The utmost good faith shall always be observed towards the Indians; their lands and property shall never be taken from them without their consent; and, in their property, rights, and liberty, they shall never be invaded or disturbed, unless in just and lawful wars authorized by Congress; but laws founded in justice and humanity, shall from time to time be made for preventing wrongs being done to them, and for preserving peace and friendship with them."*

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Out of scope	Western Shoshone Defense Project	Treaties are the supreme law of the land under Article VI clause 2 Supremacy Clause in the U.S. constitution and this is why the ICC and the Western Shoshone Distribution Act are illegal concepts by the U.S. government. It is written in the U.S. constitution that treaties are the supreme law of the land and when the U.S. government wrote the U.S. constitution with the supremacy clause, this was done because the U.S. was a rogue government that had broken away from its European Nation and was necessary to make itself look legitimate in the eyes of the world at that time. Treaties with Nations are binding and are a part of international law and cannot be broken by one actor. Moreover, on October 1, 1863, the Western Shoshone Nation and the U.S. government entered into a treaty of peace and friendship and no lands were ceded to the U.S. government by the Western Shoshone Nation. This being bound by international law, the treaty of 1863 is in full force and effect and cannot be abrogated by the U.S. government. In March 2006, the United Nations Committee on the Elimination of Racial Discrimination (UNCERD) under its early warning and urgent action procedure expressed concern over the United States' treatment of the Western Shoshone and their ancestral land. Specifically, the Committee found the United States' "obligation to guarantee the right of everyone to equality before the law" was "not respected" and urged the United States to "pay particular attention to the right to health and cultural rights of the Western Shoshone peoples". In addition, the Committee criticized the United States' stating that the United States had failed to answer the fundamental question of the implementation of actual exercise of Indigenous rights. The United States delegation was informed that the Doctrine of Discovery is outdated and the rest of the "enlightened world" has recognized this and is making efforts to reform their laws.
Out of scope	Western Shoshone Defense Project	Western Shoshone Land Air Water Sun/Spirit (LAWS). the true laws of Newe The individualized taking of monies for the lands and territories of the Western Shoshone Nations Newe Sogobia (Shoshone/Peoples Earth Mother) is illegal according to Shoshone custom, religion and traditional laws and do not permit individuals, Tribal governments and/or traditional Shoshone governments to sell the Shoshone Nations lands and territories which belong to the past, present and future generations of Shoshone Peoples. Moreover, as mentioned above, the lands and territories belong to the past, present and the future generations of Shoshone and the only way a land sale could take place would be to bring the past, present and future Shoshone Peoples together and since that is impossible, there can be no sale of Western Shoshone lands and territories. Even if the United States' assumption that those Shoshone individuals who took part in the Western Shoshone Distribution Act are entitled to sell the lands and territories of the Western Shoshone Nation, there are those Shoshone that rejected the "monetary compensation", which is outright systemic racism and abuse against Shoshone religion, beliefs, traditional teachings and traditional laws.
Out of scope	Western Shoshone Defense Project	The theft of the Western Shoshone Lands and Territories by the United States is the same as burning Christian bibles, churches and the Vatican, and erasing the Christian religion all together. The destruction of Shoshone lands is a form of religious persecution and spiritual and cultural genocide. Shoshone religion, culture and traditional beliefs are tied completely to Newe Sogobia. The United States' attack upon the Shoshone religion is racist and discriminatory, and Shoshone continues to fight against these racist and discriminatory corporate and legal frameworks created by the United States. The Earth Mother is the giver of all life as we know it and ceremonies and prayers are to be given in these sacred lands and territories of the Shoshone Nation. It's been a struggle as settlers and their governments attacked our religion since first Euroamerican contact. Shoshone have been saying no to the sale of Newe Sogobia from first Euroamerican contact, Newe Sogobia belongs to our past, present, and future Shoshone peoples and that we as human beings belong to Newe Sogobia. We, Shoshone were placed here by the creator to be the caretakers of Newe Sogobia not for the purpose of extracting and profiting financially, and that is why the U.S. and its citizens have been using destructive and abusive patterns of racism and extermination policies against our Peoples, our religion, culture and our livelihood from first Euroamerican contact.

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Out of scope	Western Shoshone Defense Project	Extermination policies, boarding schools and the denial of our Newe language, culture, religion and our Newe Sogobia have been illegally implemented by the federal government without consent from Newe. This form of racism and discrimination aforementioned fits the definition of genocide under the UN Convention on the Prevention of the Crime of Genocide. The impacts of extermination policies are ongoing to Shoshone peoples, and these policies violently opened up Shoshone lands for mineral extraction among other things. In this way, the proposal for the Rhyolite Ridge Mine is made possible due to government sponsored genocide.
Socioeconomics and environmental justice; Native American Concerns and Consultation; Cultural resources	Western Shoshone Defense Project	The United States' exploitation of Shoshone lands is an abuse of power by the United States when there is a treaty of peace and friendship signed under international law between the Western Shoshone Nation and the United States of America. These abuses include but are not limited to the following; 1. The $700 million that the U.S. Department of Energy's loan to the loneer extraction company has not included the Western Shoshone Nation and/or citizens in this process. 2. The BLM is seeking to defraud the Western Shoshone of their property and natural resources by illegally allowing the loneer, a lithium and boron extraction company to occupy and exploit Western Shoshone lands of its natural resources. 3. Funds including profits from the mining operation, DOE grants, taxes etc. that will be paid out to all other U.S. government agencies, local governments and the state of Nevada, however, there is no mention of funds going to the true owners of Newe Sogobia and in this case, the Western Shoshone Bands of the Shoshone Nation of Indians. 4. Religious and spiritual landscapes that will be impacted by the destructive extractive industry. Certain sites such as Cave Springs are locations of intergenerational transmission of cultural and spiritual knowledge. Certain protocols exist regarding when, where, and under what circumstances certain knowledge can be taught, so the loss of spiritual landscapes is the loss of cultural knowledge. Not only would a place to pray be lost, but the ability to pray as Shoshone People would be permanently and irrevocably impacted. The ability for our community to continue enacting a religious identity would be lost, and this is religious persecution. 5. Medicinal, spiritual and religious use of plants and animals will be forever harmed again through the destructive extractive industry.
Out of scope	Western Shoshone Defense Project	Questions for the U.S. government and its agencies, BLM, DOI, DOE, etc. and loneer: 1. Please explain and justify why the Shoshone Nation has not been consulted on the 700 million that the U.S. Department of Energy has proposed for allocation to the loneer extraction company? 2. The Justice40 Initiative commits 40% of federal spending on climate change and clean energy projects to "disadvantaged communities". When and how will $280 million of the $700 million Department of Energy investment be distributed to the local Shoshone Tribes and communities?
Native American Concerns and Consultation	Western Shoshone Defense Project	3. Please explain and justify what would amount to crimes of genocide that the BLM and loneer plan on committing against the Western Shoshone peoples by causing serious bodily harm and/or mental harm. This mine would impact all components of Shoshone life in the region. There would be impacts to our foods, medicine, and health which all affect our ability to not only live here but to live here as Shoshone People. Many species tied to our traditional cultural practices have already left as a result of settler-colonialism and extractive capitalism, so the continued loss represents an existential threat.
Vegetation; Wildlife	Western Shoshone Defense Project	4. Please explain and justify the annihilation of the biodiversity of the plants and animals (and certain plants being on the endangered list) at and/or near the proposed mine site that Shoshone have used and still use today?
Out of scope	Western Shoshone Defense Project	5. Please explain and justify why the concept of Christian European religion is the basis for U.S. Indian law and policy when the U.S. Constitution reads that there is a separation of church and state?

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Native American Concerns and Consultation	Western Shoshone Defense Project	6. Please explain and justify the use of the Doctrine of Discovery, plenary power doctrine and the trusteeship relationship that is being used to allege Shoshone lands and territories are now the property of the United States when the Treaty of Ruby Valley is in full force and effect and no lands and territories were ceded to the United States, and especially since this treaty was signed under international law by the Western Bands of the Shoshone Nation of Indians and the U.S. government?
Out of scope	Western Shoshone Defense Project	7. Please explain and justify why the U.S. is blatantly ignoring and not changing its policies to be in standing with the United Nations Committee for the Elimination of Racial Discrimination (CERD) Early Warning and Urgent Action Procedure Decision 1(68)? 8. Please explain and justify why the U.S. government has blatantly ignored the Inter-American Commission on Human Rights Report{s) on Mary and Carrie Dann and have not changed their policies to be in standing with the international community? 9. Please explain and justify why the United States openly commits systemic racism against the Western Shoshones right to property, due process of law and equality under the law on the basis that they are non-European and non-Christian? 10. The Western Shoshone have the right to property, due process of law, equality under the law and the freedom of religion just as it is guaranteed to every other U.S. citizen, so please explain and justify why the U.S government and its agencies continue to discriminate through the use of antiquated colonial laws? 11. The United States claims to be a Nation of laws and a human rights protector, however, the use of these antiquated colonial laws lack true human rights protections and equality under the law for the Western Shoshone Nation and its peoples. How does the United States plan to remedy these outdated, racist and discriminatory laws bringing itself out of its disturbing past of extermination policies, land theft and fraud?
Water resources	Western Shoshone Defense Project	12. The scheme of water exported from Fish Lake valley to the mine site impacts the water table, which is at an all-time low due to drought and irrigation by the farming community that has already over allocated the ground water. This will further impact domestic wells that are already on the verge of having to dig new and deeper wells to supply clean drinking water. Agricultural well{s) may also be impacted causing profit losses for farmers. This loss of water would impact Shoshone lifeways, sustenance, and spirituality and is thus a form of environmental racism. How will the loneer deal with domestic and agricultural well issues from the export of groundwater to supply the proposed mine?
Out of scope	Western Shoshone Defense Project	13. With the aforementioned comments, please elaborate on how the U.S. plans to uphold the Genocide Convention implementation Act of 1987 (Proxmire Act) passed Senate amended (10/14/1988) (Measure passed Senate, amended) Amends the Federal code to establish the crimanal offence of genocide (specified acts committed with the specific intent to destroy a national, racial or religious group). Respectfully Submitted, Joe Kennedy, Board Member Western Shoshone Defense Project cc: President Joe Biden Debra Haaland, Secretary US Department of the Interior Jennifer Granholm, Secretary Department of Energy Attachments: IACHR, Report on Merits 75/02, IACHR, Report on Admissibility 99/99 CERD Decision 1(68), Public Law 100-606, United Nations definition of Genocide
Out of scope	Western Shoshone Defense Project	Attachment 1: Inter-American Commission on Human Rights; Report No 75/02, Case 11.140, Mary and Carrie Dann; December 27, 2002
Out of scope	Western Shoshone Defense Project	Attachment 2: Inter-American Commission on Human Rights; Report No 99/99, Case 11.140, Mary and Carrie Dann September 27, 1999

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Out of scope	Western Shoshone Defense Project	Attachment 3: Committee for the Elimination of Racial Discrimination, Early Warning and Urgent Action Procedure Decision 1 (68)
Out of scope	Western Shoshone Defense Project	Attachment 4: Public Law 100-606, Nov. 4, 1988, Chapter 50A-Genocide
Out of scope	Western Shoshone Defense Project	Attachment 5: UN Office on Genocide Prevention Definition of Genocide
Threatened and endangered species	Nevada Native Plant Society	On behalf of the Nevada Native Plant Society, I am pleased to provide scoping comments to the Bureau of Land Management (BLM) for the draft Environmental Impact Statement (DEIS) for the Ioneer Rhyolite Ridge Lithium-Boron Project in Esmeralda County, Nevada. The Nevada Native Plant Society (NNPS) is a non-profit organization whose mission is to stimulate an interest in and an appreciation of native plants and their conservation. Our primary concerns are adverse environmental impacts of the proposed mining project on the endangered Eriogonum tiehmii (Tiehm's buckwheat), an endemic plant only found in the proposed mining project area on public lands, managed by the BLM. We are also concerned about environmental impacts of the proposed project on the ecosystem surrounding the 8 subpopulations of the plant and the remote rural communities close to the proposed mining site.
Threatened and endangered species	Nevada Native Plant Society	Scoping Issues: BLM Notice of Intent (NOi) to prepare this EIS: Because BLM in its NOi failed to acknowledge the final rule of the US Fish & Wildlife Service (USFWS) published on December 16, 2022 establishing endangered species status and designating critical habitat for Tiehm's buckwheat, please include the USFWS ruling and critical habitat designation and all supporting documents as part of NNPS scoping comments - https://www.govinfo.gov/contentlpkg/FRR2022-12- 16/pdf/2022-27225.pdf.
Review period	Nevada Native Plant Society	The Ioneer Plan of Operations on which the BLM analysis of environmental impacts of the proposed project is based: BLM is asking the public for scoping comments on Ioneer's Plan of Operations (POO), dated July 2022. If Ioneer changes its POO substantially during the scoping period, the BLM should provide the public with an additional opportunity to provide scoping comments on a revised POO before the DEIS is published in order to comply with the requirements of the National Environmental Policy Act to solicit public comments and identify issues and alternatives on proposed projects on public lands. Also, BLM must require that any future exploration or expansion of mining activities outside the POO project area must comply with NEPA including providing descriptions of future projects, opportunities for the public to provide scoping issues and comment on potential environmental impacts analyses and alternatives.
Threatened and endangered species	Nevada Native Plant Society	Tiehm's Buckwheat: According to the Nevada Division of Natural Heritage, Nevada is home to 2,800 native species of flowering plants, making it the 10th most botanically diverse state in the nation. Much of this diversity is found in relatively small islands within the oceans of sagebrush, greasewood or creosote bush. Such islands include pockets of unusual soils. Tiehm's buckwheat occupies one of these unusual soil pockets west of Rhyolite Ridge, which is also the site of the proposed lithium-boron mine. Direct impacts and destruction of Tiehm's buckwheat critical habitat: The USFWS stated in its final rule that the current proposed mining operations would directly encroach on 38% of the critical habitat of Tiehm's buckwheat, including areas currently occupied by some of the 8 subpopulations of the plant. The BLM should require Ioneer to reconfigure the POO to remove all operations within the 500 meter critical habitat buffers.
Air quality, Threatened and endangered species	Nevada Native Plant Society	Dust impacts of mining operations: NNPS is concerned about dust impacts of mining operations on Tiehm's buckwheat and its pollinators. The EIS should include analysis of the ecological impacts of roads and ground-disturbing activities, including altered hydrology, pollution, sedimentation, silt and dust erosion and deposition, habitat fragmentation, reduced species diversity and altered landscape patterns. The EIS should analyze how much dust would be generated by 100 round trips per day, 365 days per year and how can these problems be avoided or mitigated, if it's even possible. The analysis should include the amount of water and dust suppressants necessary to meet its Air Quality permit requirements, as well as to protect Tiehm's buckwheat and its pollinators from dust impacts.

Issue Category	Organization	Comment[1]
Reclamation, Threatened and endangered species	Nevada Native Plant Society	We are providing a link to a recent research article on the ecology of Eriogonum tiehmii (https://esajournals.onllnellbrary.wiley.com/doi/full/10.1002/ecs2.4187) that assessed the arthropod communities in E. tiehmii habitat, the most common visitors to the E. tiehmii flowers, and the importance of pollination for seed set. The results show that these plants are specifically adapted to their native soil types and that there were no unoccupied sites that could support both establishment and growth of E. tiehmii seedings. The EIS analysis should address the ineffectiveness of transplanting E. tiehmii plants as "mitigation" for adverse mining impacts.
Mitigation	Nevada Native Plant Society	Applicant-committed enyjronmental protection measures (ACEPMs): The BLM project overview document includes ACEPMs for air quality, cultural resources, erosion and sediment control, water resources, geology and minerals, materials and waste management, hazardous materials and solid waste, sanitary and solid waste disposal, petroleum-contaminated soils, growth media soil salvage, monitoring plan, Tiehm's buckwheat, noxious weeds and invasive non-native species, wildlife and avian protection, public safety and accessibilty, transportation and access, visual resources and night skies, fire protection and emergency response. ACEPMs are generally known by the authors of the measures and by supervisors, but the analysis should disclose what the procedures are for ensuring that all the workers on the site are aware of reasons for these measures. Also, who is directly responsible for ensuring that all the workers on the site know these measures? The analysis should disclose whether these measures are voluntary or are they required by local, state, or federal agencies and who is responsible for monitoring their implementation and effectiveness. The analysis should also disclose the penalities, if any, if these measures are not implemented or if measures fail to mitigate adverse environmental impacts of the mining project. This scoping issue is critically important since BLM has just sent a Notice of Trespass to Ioneer on January 14, 2023 for unauthorized use within designated critical habitat of the endangered Tiehm's buckwheat.
Threatened and endangered species	Nevada Native Plant Society	Overburden sites and berms: Since the proposed mining operation involves massive disruptions in drainage patterns in the mining area through excavations and soil dumps into canyons and areas above the Tiehm's buckwheat subpopulation areas, the BLM analysis should assess how it can ensure that the proposed use of berms and other proposals to re direct overland flows do not cause unnecessary and undue degradation of public lands and resources as well as direct and indirect harms to the endangered Tiehm's buckwheat.
Reclamation, Vegetation, Wildlife and special status species	Nevada Native Plant Society	Impacts on wildlife and other plants: In addition to NDOW and BLM wildlife and plant information in the Rhyolite Ridge mining area, the BLM should also use eBird and iNaturalist sightings of both plants and animals in the mining area. https://www.inaturalist.org/observations?lat=37.81960246420454&1ng=-117.85839317418997&Place%20id=anv&radius=2.3077321802508552&subview=map The analysis should assess mining impacts, both direct and indirect, including both wildlife habitat loss and fragmentation from the construction and operations of the proposed mine. Reclamation of mining activity is important to Nevada's wildlife in order to restore lost and fragmented habitat. The EIS should provide independently verified baseline information on the use of springs by wildlife in the project area so that monitoring will be able to show mining impacts and the effectiveness of mitigation and reclamation measures.
Water resources	Nevada Native Plant Society	Impacts on springs: The EIS should provide independently verified baseline information on spring flows before pumping for mining operations begins, so that mining impacts can be assessed, mitigated and reclaimed. The analysis should provide information on how many springs would be affected by the cones of depression from both wells and the 750 foot quarry. Since Nevada state law requires that water must be left at springs for wildlife, the analysis should ensure this state requirement is met as well as other mining impacts on the springs, including reducing flows due to groundwater pumping in mining operations or drying up of springs as well as requiring avoidance and mitigation for any spring water losses. In addition, recent research indicates that desert springs are not fungible and that each spring has a somewhat unique ecosystem that has developed in relative isolation from other springs. Because of the uniqueness of these desert ecosystems, mitigation compensation or mitigation offset via replacement or substitution can never truly be achieved to impacted spring areas , resulting in a loss of endemic and water-dependent biodiversity (Love AH, Zdon A, Fraga NS, Cohen B, Palacios Mejia M, Maxwell R and Parker SS (2022), Statistical evaluation of the similarity of characteristics in springs of the California Desert, United States. Front. Environ. Sci. 10:1020243. doi: 10.3389/fenvs.2022.1020243).

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Water resources	Nevada Native Plant Society	Impacts of water extraction: The analysis should disclose the acre feet to be pumped and also proposed to be piped into the mining area. Also, Fish Lake Valley, Basin 117, is a designated basin where permitted groundwater rights approach or exceed the estimated annual recharge into the basin. The analysis should assess the impacts of depletion of groundwater and the proposed importation of agricultural water into the mining area, including loss of recharge of agricultural water into the aquifer and increased dust and invasive weeds from fallowed fields.
Threatened and endangered species, Water resources	Nevada Native Plant Society	Extreme weather: The POO shows massive disturbances to soil stability, both in excavating the quarry and piling overburden over extensive areas, which could result in major disasters down canyon from extreme weather events. loneer's stormwater plan appears to only be designed to handle a 1 inch storm, but climate changes may result in much larger storms and direct impacts to Tiehm's buckwheat subpopulations down slope from the proposed overburden pile areas. The analysis and alternatives should include impacts from stormwater and runoff from 100, 500, and 1000 year storms.
Socioeconomics and environmental justice	Nevada Native Plant Society	Impacts to local communities and recreation: The POO estimates 500 employees during project construction and 350 employees during operation of the proposed mine. The analysis should provide information on whether these employees are local or newcomers to the area and, if arriving, where will they live, especially if they bring their families or will loneer be setting up worker camps for imported workers? The BLM should analyze the impacts of this large workforce and their families and/or worker camps on nearby small rural communities, including impacts on food availability, housing, traffic, law enforcement, schools, medical services, domestic water supplies, wildlife, existing recreation, etc. Because the proposed mining area currently supports extensive recreational uses, the BLM analysis should assess the impacts of current and future mining operation closures on continuing recreational uses.
Reclamation, Threatened and endangered species	Nevada Native Plant Society	Reclamation: The EIS should provide independently verified baseline information on plants and wildlife before the proposed mining activities in the POO are permitted to start, so that mining impacts can be assessed, mitigated and reclaimed. The analysis should assess the potential for restoration in the mining areas and avoid disturbing areas which cannot be reclaimed which would result in undue and unnecessary degradation of public lands and resources. The BLM should analyze the costs and effectiveness of the use of geomorphic reclamation for reestablishment of landform stability v. revegetation. The BLM analysis should assess whether the proposed seed mix is compatible with the unusual soils in the area. Topsoil in disturbed sites by past mining activities is full of weed seeds and the benefits of using this contaminated topsoil for mining reclamation should be analyzed v. the costs of required subsequent weed control and management. The BLM should analyse the impacts of the use by loneer of herbicides to control weeds on the endangered Tiehm's buckwheat and prohibit herbicide use if harmful to the 8 subpopulations of Tiehm's buckwheat. Reclamation of sites already disturbed by loneer activities which support large populations of halogeton and cheat grass should be required now, not after these weeds continue to propagate into the Rhyolite Ridge project area. Lastly, the analysis should also disclose the full costs of the mining reclamation and monitoring as well as the amount of the reclamation bonds which must cover these costs. The bonds should not be released until monitoring shows that reclamation goals and objectives for restored natural habitat have been met over a 5-10 year period.
Alternatives, Proposed EPMs	Nevada Native Plant Society	Alternatives: No alternatives should include any mining operations within Tiehm's buckwheat critical habitat. If monitoring shows adverse impacts of the mining construction or operation generated dust on the subpopulations, the 500 meter buffer zone must be expanded and additional dust abatement measures should be required. The deep mining quarry should be backfilled and the slope angles reduced to avoid endangering both wildlife and human visitors to these public lands. The quarry should also be moved to avoid direct and indirect mining impacts to Tiehm's buckwheat and its pollinators. Only seeds from native plants, certified weed free, should be used in reclamation activities. No alternatives for mitigation should include translocation of Tiehm's buckwheat plants or seedlings since all prior efforts to do so have failed. No alternatives for reclamation should include the use of irrigation since excessive water availability in severe droughts may again result in population explosions of small mammals which then may attack Tiehm's buckwheat plants or the use of guzzlers which attract grazing wildlife to the buckwheat plants. The West and Quarry Infill Overburden Storage Facility and the North Infill Overburden Storage Facility should be moved down-gradient to avoid direct and indirect mining impacts on Tiehm's buckwheat subpopulations and pollinators. The Processing Facility, Batch Plant, Septic Leach Fields and Spent Ore Storage Facility should be moved down-gradient to avoid indirect mining impacts to the plant and its pollinators. The Explosives Storage Area should be moved down-gradient and as far as possible from all Tiehm's buckwheat subpopulations.

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Recreation	Nevada Native Plant Society	BLM should ensure that current recreational uses of the proposed mining area would not be precluded by future mining road closures. Thank you for considering our comments. We hope our comments assist the BLM in strengthening its analysis of the environmental impacts of the proposed mining project, especially on the endangered Tiehm's buckwheat. Sincerely, Rose Strickland, Chair NNPS Conservation Committee
Threatened and endangered species	Center for Biological Diversity	*Postcard with photograph of Tiehm's Buckwheat*
Livestock Grazing, Wild Horses	Esmeralda Cattle Company, LLC	We are concerned that the Rhyolite Ridge Project has the potential to impede the right away of the county road for cattle as well as wild horses trying to access nearby waters. In short, we would not like to see access from east to west cut off for the cattle and horses through the Rhyolite Ridge county road corridor. Cattle and horses have been traveling through that proposed project for decades. Esmeralda Cattle Company, LLC Current Leasee for Silver Peak Allotment
Out of Scope	Individual	I'm interested in the news of the procedure and why it is taking so long, the threat of the buckwheat has never been greater cared for since IONEER began its operations in the Rhyolite Ridge, this process is working against everything usus USA stands for free enterprise.
Supportive of Project	Dragonfly Energy Corp.	Dragonfly Energy, a Lithium ion battery technology and manufacturing company headquartered in Reno, NV, seeks the U.S. government to swiftly support the localization of lithium mine and processing development in the U.S. The Rhyolite Ridge project, in particular, is one of the most advanced lithium projects, with significant resources critical to domestic lithium supply chain development. Moreover, Rhyolite Ridge is dedicated to the completion of a full environmental review under the NEPA and has already demonstrated its commitment by listening to concerns and taking time to redesign its quarry to avoid Tiehm's buckwheat. Rhyolite Ridge Lithium Boron projects are critical to us to secure critical minerals within the U.S., to ensure a domestic lithium supply for Dragonfly Energy, and ultimately to reduce our overall carbon footprint by enabling greater proliferation of energy storage on the grid. Sincerely, Dr. Denis Phares, Chairman and CEO Dragonfly Energy Corp.
Public involvement	Great Basin Resource Watch	Great Basin Resource Watch (GBRW), Earthworks, Progressive Leadership Alliance of Nevada, Basin and Range Watch (Commenters) consider the proposed lithium mine as potentially a significant impact to the area, and should be studied in great detail. As a new mine there exists the opportunity if this project moves forward to initiate advanced procedures to mitigate the impacts. Thus, a thorough Environmental Impact Statement (EIS) will be instrumental in the development of this project.
Public involvement	Great Basin Resource Watch	PUBLIC PROCESS The timing of the notice of intent and scoping process just before Christmas was poorly thought out and did a great disservice to the public. People are distracted with holiday plans that proceed through the beginning of January and then it takes some additional time in January for people to get back to their normal process. The Notice of Intent should have been after the first week in January. Scoping meetings, as a collective public process and a means for community members to come together to better understand a proposed action, require an awareness of others that was clearly withheld from this virtual meeting. The value of scoping meetings comes not only as a means for community members to hear and engage with sources of knowledge from public agencies and the mining operator, but to share knowledge, concerns, and related lived experience with others in their community. At the September 2nd meeting, there was no way for attendees to engage directly with other members of the public. All information was one-sided and prevented a collective learning that comes from the conversational format that exists during in-person meetings.
Public involvement	Great Basin Resource Watch	A means for attendees to see one another, as well as have conversations or ask questions directly to one another, is a vital component of the public process that must be remedied and incorporated into future virtual meeting spaces. The best solution for this would be to allow all attendees to have the choice to un-mute themselves and turn their computer cameras on (to be seen on the shared screen). If this is not possible, at the very least, there should be a sign-in sheet where attendees can see both who and how many others are present. Creation of the space in this way is needed for the process to stay accountable towards the public.

Issue Category	Organization	Comment[1]
Water Resources	Great Basin Resource Watch	1. Groundwater Model Needs to be Revisited Commenters are aware that any groundwater model will have an inherent level of uncertainty; however, the model used to support conclusions applied to the mine plan (Plan of Operations, POO) and used in the NEPA process has significant errors as to lend serious questions on these conclusions. HGL has prepared two reports in support of the originally proposed Rhyolite Ridge lithium quarry project dating to 2020[1,2]. The current POO still relies on the HGL 2020a, but there has been a revised pit lake analysis, Piteau 2022.[3] The reports generally depend on too little field data to support the conclusions. The lack of evidence is most apparent in the groundwater modeling effort for which there is too little data outside of the immediate pit area. This is obvious in the poor conceptual model established for the groundwater model. There are two clear errors. First, the modeler may assume there is too much segmentation. Second, the amount and location of the recharge is inaccurate in several ways discussed below including the amount not equaling an estimated outflow from the model domain and the application of recharge with little regard for the underlying geology. [1] HydroGeoLogica Inc (HGL) (2020a) Rhyolite Ridge Baseline Hydrogeology Report, May 2020. Prepared for Ioneer USA Corporation. [2] HydroGeoLogica Inc (HGL) (2020b) Rhyolite Ridge Quarry Lake Evaluation Report, May 5, 2020. Prepared for Ioneer USA Corporation. [3] Piteau 2022, "Rhyolite Ridge TR03D Quarry Lake Assessment," Piteau Associates USA Ltd., September 2022.
Water Resources	Great Basin Resource Watch	The groundwater modeling effort uses spring levels as calibration targets, meaning it attempts to match the water level to the spring elevation. This is appropriate only for springs connected to the intermediate level aquifer being simulated (not the regional aquifer or perched aquifers). Calibration involves minimizing residuals which could be negative or positive meaning there is as much chance for the simulated potentiometric surface being above the ground level as below, which is clearly not appropriate. A spring is better simulated as a DRAIN boundary with a targeted discharge rate than as a groundwater surface target. The boundary would prevent the potentiometric surface rising above the ground surface. Seeps should also not be used for calibration. The model has a "constant head" boundary at its connection to Fish Lake Valley (HGL 2020a, p 49). However, the report also indicates there is a 3-foot drawdown at the boundary, which is impossible because the boundary head is constant. A constant head boundary will allow whatever flux is necessary to prevent the head from dropping. This is why a general head boundary is preferable – it can limit the inflow from the boundary. The constant head boundary can provide unreasonable changes in the water budget. HGL changed recharge rates as part of calibration (HGL 2020a, p 52). This indicates the model is nonunique. Calibration usually matches measured outflow or inflows to a model domain. For example, HGL should have measured outflows to Fish Lake Valley (based on pump test determined transmissivity and measured gradient) to which it sets the recharge rate (note this means that using Maxey-Eakin recharge values would be inappropriate, as discussed above). Using an established recharge rate as equal to the outflow rate, the calibration would attempt to match the observed groundwater levels by adjusting conductivity. Adjusting also the inflow leads to a nonunique solution. This means that any combination of recharge and conductivity could result in the observed groundwater levels on which the modeler based the calibration. Because the modeler reduced M-E recharge values, it seems likely that the model simulated too little water flowing through the system. Underpredicting recharge could have resulted in a prediction of too little dewatering and a lower pit lake level than will actually occur.

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Water Resources	Great Basin Resource Watch	HGL (2020a, p 54) makes assumptions about the conductance of faults that are not supported by data. There are no pump test results showing significant reductions over the fault, so HGL has no evidence for these assumptions. The response of the model is based on the assumptions input to the model, which may have no basis in reality. The steady state calibration shows a significant areal bias with residual tending to be positive or negative in different areas (HGL 2020a, p 55). For example, springs were underpredicted by up to hundreds of feet especially in the high elevations (Id.). Springs are effectively bounded and make poor targets as discussed above. The estimated conductivity throughout much of the model domain is therefore very inaccurate. The calibration statistics (HGL 2020a, p 56) are very poor. That the mean residual is -65.7 feet means the potentiometric surface is simulated as way too low under steady state conditions. Mean residual should equal zero. HGL uses the steady state groundwater level as the initial level for project simulation. This would result in the model underpredicting drawdown, flow to the lake, and quarry lake recovery. The supposed improvement in calibration statistics due to considering only project wells and VWPs means that removing targets leaves those that are easier to hit with the simulation. The mean residual is still substantially negative meaning the steady state groundwater even at the quarry site is too low. The graph showing observed and simulated water tables (HGL 2000a, Figure 7-6) is very misleading due to the scale; observations that appear close to the 1:1 line could still represent residuals of an order of 200 or more.
Water Resources	Great Basin Resource Watch	HGL acknowledges the poor portrayal of an upward gradient within the pit due to the inability to match different VWP levels (HGL 2000a, p 58). The report acknowledges many errors due to the model's inability to simulate small-scale features (Id.). It is therefore questionable how useful the model predictions are. Most of the observations in these comments suggest the model underpredicts flow into the quarry for both dewatering and quarry lake formation. There appears to be little surface expression of water, but a complete characterization of the surface waters and springs and an understanding of groundwater movement is needed. The depth to groundwater is very important especially given the nature of the leach operation that is envisioned. Regarding the segmentation, there appears to be no hydrologic justification for the parameters used to model this with HFBs. These HFBs control lots of flow in the model. The natural piezometric surface does not include the steps in the contours that are shown on the modeled piezometric surfaces, products of the HFB conceptualization.
Water Resources	Great Basin Resource Watch	Modeling does not consider seasonality or drought. The model used constant annual precipitation for both recharge, pit lake input and pit wall runoff; the runoff coefficient would be much higher during heavy rain periods. The pit lake level could fluctuate, possibly wetting and drying reactive rock or (2) even allowing the pit lake to be occasionally flow-through. Being flow-through is especially important because the groundwater divide is just 10 feet above the pit lake level; it is easy to imagine fluctuations around that based on high flow periods. Several things could be done to more accurately model this. For one, they could specify recharge by month to reflect seasonality. To reflect drought, they could change the rates by year. This would require consideration of stochasticity in the annual precipitation, but there is plenty of research about that, including how recharge actually occurs maybe once a decade rather than evenly among years. They also need to be more careful about where the recharge actually occurs because this affects the calibrated hydrologic parameters and the beginning of the flow paths. **To achieve this end, at least one year of monthly samples followed by quarterly samples should be taken to establish a baseline.** We anticipate that water level data has been collected in every exploration borehole.
Water Resources	Great Basin Resource Watch	2. <u>Errors Simulating Recharge</u> The report describes conceptual recharge accurately with respect to runoff reaching drainages where it sinks into alluvium and then into underlying fractured bedrock with some recharge occurring at elevations due to melting snow and rainfall (HGL 2020a, p 27). However, the report in many places overestimates the amount that would recharge at high elevations because it does not adequately account for geology.

Issue Category	Organization	Comment[1]
Water Resources	Great Basin Resource Watch	The report uses the Maxey-Eakin method for estimating recharge but commits two errors in its use. Conceptually, the method relates recharge simply to the amount of rainfall that occurs in varying bands of precipitation estimated to occur throughout a basin. The bands of precipitation are 8 to 12, 12 to 15, 15 to 20 and greater than 20 inches with coefficients equal to 3, 7, 15, and 25%, respectively. This means that, for example, 15% of the total volume of water falling within the area having between 15 and 20 inches of precipitation becomes recharge. The method was developed by assuming that recharge to a basin would equal discharge from that basin, accounting for interbasin inflow. Discharge is spring flow and groundwater evapotranspiration from the regional aquifer within the basin. It does not include perched aquifers and springs although perched springs that discharge to a flow that eventually recharges the regional aquifer would be recharge. The recharge coefficients were derived through a trial-and-error process using an annual precipitation map of Nevada dated 1936, applied to natural discharge by phreatophytes in 13 unidentified valleys in Nevada. Details of the derivation have not been published and have not been reproduced by anyone. The coefficients, and overall method, required use of the 1936 precipitation map or it will provide estimates not consistent with the original method. *The method has been updated to different precipitation maps, including the recent PRISM mapping, and it is therefore essential that any use be limited to coefficients derived using the same precipitation estimation mapping.* **The second error with its use by HGL (2020a) is the tendency to assume that precipitation enters the ground where it falls.** Although the report mentions the geologic control, it does not adequately apply it; there will be no recharge into granitic outcrops and no runoff from highly porous carbonate outcrops. The report must provide adequate reasoning for applying recharge as it does. Based on HGL (2020a) Figures 6-10 and 7-4, it appears that the groundwater model applies the precipitation where it falls and does not account for the fact it actually occurs along the washes, probably including into the fracture zone along the Cave Springs wash downstream from the spring. This affects the modeling because it forces groundwater to flow through portions of the model domain where geology would limit the flow. To not have simulated water levels that are too high, it is likely the calibrated conductivity values are too high, primarily in high elevation areas.
Water Resources	Great Basin Resource Watch	3. <u>The EIS Must Thoroughly Examine All Impacts to Water Resources from Mine Dewatering and On-Site Pumping</u> The POO indicates that the proposed action will include dewatering to maintain the usability of the open pit. This would start at 110 gallons per minute (175 acre feet per year) in year one, and decline to 73 gpm (116 afy) in year three.[4] However in addition to dewatering, there would be on-site pumping to provide water for the processing facility and other mining operations. The POO estimates that operational water needs for the processing and operations of the Project will be 2,500 gpm (3,981 afy). This is an order of magnitude more water to be pumped than simply for dewatering. The EIS must disclose and fully analyze all potential impacts from pumping and dewatering for the Project. [4] Ioneer 2022, p. 25.
Water Resources	Great Basin Resource Watch	Mine pits and shafts that extend below the groundwater table capture groundwater and can create significant change in groundwater quantity and flow. For example, pits or other excavations that intercept high transmissivity aquifers or highly conductive fault zones draw very large amounts of groundwater and lower the surrounding water table. This can adversely affect surface water flows and groundwater-dependent ecosystems. Drawdown is the amount that the water table has lowered since dewatering and pumping began; in three dimensions it often resembles an inverted cone. Substantial drawdown due to mine dewatering has been extensively documented at mines in northeastern Nevada. For example, groundwater levels at the Goldstrike Pit on the Carlin Trend have declined almost 490 meters (m) by 2003 in response to the removal of about 900 million cubic meters of groundwater.[5] As dewatering and pumping for operations lowers groundwater connected to surface water, either groundwater discharge to the surface water will decrease (for example, causing springs to run dry) or surface water will infiltrate to groundwater at higher than average rates in a process known as induced recharge. There is no avoiding these impacts—inflow equals outflow in a groundwater basin and dewatering and pumping is a new outflow which will eventually draw flow from natural groundwater discharges (e.g., springs and streamflow). [5] Plume, R.W. 2005. Changes in ground-water levels in the Carlin Trend area, North-Central Nevada, 1989- 2003, US Geological Survey Investigations Report 2005-5075.

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Water Resources	Great Basin Resource Watch	Moreover, dewatering groundwater impacts do not end when mine dewatering ceases because of the deficit created in the groundwater system. Groundwater returns to dewatered pits or shafts, causing the water table to recover and forming a "pit lake." The rate of pit lake formation depends on the rate of groundwater inflow. Natural pit lake recovery can take from decades to as long as 500 years to reach a long-term relatively steady state, because in addition to filling the excavated pit, water must replenish the empty pores of the surrounding dewatered overburden. As a pit fills with water and a pit lake forms, the extent of the drawdown cone continues to increase while the drawdown at the pit decreases.[6] The POO states that the Project will result in the formation of a pit lake.[7] The pit lake will be approximately 260 feet deep and cover 105 acres once it is fully filled.[8] Evaporation from the pit lake, which will continue to draw down groundwater resources for decades or likely centuries, would amount to some 345 gpm (556 afy).[9] [6] Plume 2005. [7] Ioneer 2022, p. 74. [8] Ioneer 2022, Appendix D, p. 5. [9] Id.
Water Resources	Great Basin Resource Watch	After fully analyzing the potential pit lake water quality, BLM must also ensure that any water in the pit lake complies with all state and federal water quality and wildlife protection standards (pursuant to BLM's duty to prevent UUD and comply with all standards under its 43 C.F.R. Part 3809.420 Performance Standards), including the wildlife protection provisions of the RMP. This also includes making sure that the pit lake waters will not be hazardous or toxic to wildlife (including insects and birds) that may land on the lake and ingest pollutants, which can then bioaccumulate or propagate through the food chain.
Water Resources	Great Basin Resource Watch	Because of these impacts, the proposed action could significantly impact groundwater- and riparian-dependent species and ecosystems over a large area. The EIS must fully consider these impacts, and describe in detail any actions that may be taken to mitigate them. The EIS must further acknowledge that these impacts will be of long duration or effectively permanent. The EIS must therefore analyze the impacts of ongoing groundwater drawdown for the expected hundreds of years that the pit lake will persist. BLM should not simply assume that hydrologic conditions will return to normal after dewatering ceases.
Water Resources	Great Basin Resource Watch	4. Hydrogeology of Fish Lake Valley Fish Lake Valley is bordered on all sides by mountain ranges: the White Mountains to the west (peaking at 14,252 ft), Silver Peak Range to the east and south (peaking at >9000 ft), and the Volcanic Hills to the north.[10,11] The valley fill consists of gravel, sand, silt and clay, while noncarbonate and carbonate rock form the mountain masses and also underlie the alluvium at depth. [12,13] The White Mountains receive close to 10 inches of rain and snow, providing runoff to approximately 5 or 6 perennial streams used for irrigation.[14] No perennial streams reach the valley floor from the mountains on the north, east and south.[15] The valley itself receives very little rain (less than 5 inches of a year). The average temperature is 48.9°F (9.4°C), with summer temperatures up to 90-100°F (32- 38°C), and winter temperatures that frequently fall below 32°F (0°C).[16] [10] State Engineer. 2013. Fish Lake Valley hydrographic basin 10-117. Groundwater pumpage inventory. Water year 2013. State of Nevada Department of Conservation and Natural Resources Division of Water Resources. [11] Rafferty, K. 1988. Fish Lake Valley in Great Basin Prehistory. Journal of California and Great Basin Anthropology, 10(1). [12] Eakin, T. E. 1950. Preliminary report on groundwater in Fish Lake Valley, Nevada and California: Nevada State Engineer's Office, Water Res Bull., no. 11, p. 7-33. [13] Rush, E.F. and Katzer, T.L. 1973. Water resources appraisal of Fish Lake Valley, Nevada and California. Water resources – reconnaissance series report 58. State of Nevada Department of Conservation and Natural Resources, Carson City. [14] Rush and Katzer 1973; Rafferty 1988; State Engineer 2013. [15] Rush and Katzer 1973. [16] Rafferty 1988, p. 88.

Issue Category	Organization	Comment[1]
Water Resources	Great Basin Resource Watch	The most important stream in Fish Lake Valley is Chiatovich Creek, with an average annual streamflow of 6,700 acre-feet.[17] The axial drainage in the valley tends northward to a playa where runoff collects when it occurs and then evaporates.[18] The groundwater reservoir is recharged from direct downward percolation into the mountain bedrock and from deep percolation into the alluvium where precipitation has become concentrated into streams.[19] When conditions are unusually wet, some surface water may flow further than the playa and discharge through the "Gap" into Columbus Salt Marsh Valley.[20] The Gap is an outlet at the north end of the Valley, roughly 1 mile in length and less than one-eighth of a mile in width on average.[21] The streamflow leaving the valley is estimated to be less than 100 acre-feet per year, probably occurring infrequently over a period of years. A small amount of groundwater outflow (less than 200 acre-feet per year) is also estimated to occur through the alluvium, with a larger amount of subsurface outflow going through volcanic and carbonate rocks to Columbus Salt Marsh Valley. Outflow to Clayton Valley may additionally occur through the Silver Peak Range. Total subsurface outflow for the Valley can be assumed to amount to 3,000 acre-feet per year.[22] Evapotranspiration by phreatophytes, which predominantly occur on the valley floor, is estimated to generate 24,000 acre-feet per year of outflow for native conditions.[23] This includes spring discharge, with some flow going to support vegetation and the majority seeping back to the water table.[24] The principal types of phreatophytes are greasewood, rabbitbrush, saltgrass, and various native meadow grasses.[25] Groundwater recharge from precipitation for native conditions is about 33,000 acre-feet per year; but 30,000 acre-feet per year for both Valley inflow and outflow is realistic given uncertainties in each.[26] [17] Rush and Katzer, 1973, p. 1. [18] State Engineer 2013, p. 3. [19] Eakin, 1950, p. 18. [20] Rush and Katzer, 1973, p. 28. [21] Eakin, 1950, p. 7. [22] Rush and Katzer, 1973, p. 31. [23] Id., p. 37. [24] Id., p. 33. [25] Id., p. 31. [26] Id., p. 37.

Issue Category	Organization	Comment[1]
Water Resources	Great Basin Resource Watch	Per Eakin, the largest spring in the Valley is Fish Lake Spring and closely related springs extending northeast for about 2 ½ miles.[27] Water at Fish Lake Spring is most likely transmitted through solution openings in Palezoic limestone to a point close to the land surface, from where it rises to the surface through alluvium.[28] The average annual discharge from this area is roughly 4000 acre-feet.[29] However, as noted in section B, Fish Lake Spring and Fish Lake (a playa the Spring occasionally spills out onto) are now dry most of the time due to pumping for agriculture (pers. comm. Eric Miskow, Nevada Division of Natural Heritage, November 2020). Discharge from the spring area at the McNett Ranch is around 700 acre-feet per year. Several springs occur south-west of this spring area but the (moderate) discharge only occurs in the spring time (Eakin 1950, p. 25). Seven hundred acre-feet per year is more than the ~215 acre-feet pumped for domestic use in the valley (State Engineer, 2013, p. 8), but two orders of magnitude less than the > 50,000 acre- feet appropriated, or >27,000 acre-feet pumped, in Fish Lake Valley for irrigation purposes (Ibid., p.1), or the groundwater pumpage that may result from the operation of a large-scale lithium or geothermal production facility (sections IV. A1, A4 and A5). Moreover, as at Fish Lake Spring, discharge is almost certainly now lower than 50+ years ago due to increasing alfalfa production in the vicinity of the ranch (section IV. A1). In addition to the springs on McNett Ranch, there are, or have been, springs elsewhere in the Valley. Springs in the Gap are described as having a small aggregate discharge. Their outflow is likely caused by faultin and localized recharge in the vicinity of the Gap. In the northwestern part of the valley, Sand Spring (with a discharge of 10-15 gpm or <25 acre-feet per year) arises from the contact of the bedrock and alluvial deposits, and was partly developed many years ago (Eakin, 1950, p. 26). There are also a large number of smaller springs in the Palmetto and Sylvania Mountains, and about 25 gpm is exported from some small springs in Trail Canyon (Rush and Katzer, 1973, p. 33). [27] Eakin 1930, p. 25. [28] Id., p. 17. [29] Id., p. 25.
Water Resources	Great Basin Resource Watch	5. <u>Potential Damage to Cave Spring</u> A negative effect on Cave Spring would include a reduction in flow due to the mining operations, primarily the quarry dewatering. HGL (2020a) states the spring is outside the project boundaries, but this is simply due to them drawing the project boundary with a small semicircle excluding the spring. HGL (2020a) provides just one flow measurement – 0.31 cfs (HGL (2020a) Table 6-1) – taken on June 26, 2019. The pictures and data in HGL (2020a) Attachment A show a substantial riparian vegetation cover, so there is probably more groundwater reaching the surface than reflected by the measurement. In late June, the flow is likely higher than it would be in the fall after a hot summer, but the vegetation indicates that moisture reaching the surface is perennial. Cave Spring is at elevation 6208 amsl. The groundwater model predicts less than ten feet of drawdown at the spring, but it only requires that the water level drop a foot to cause substantial changes in the flow. The spring will only be affected if there is a connection between the aquifers being dewatered and the aquifer feeding the spring. HGL (2000a) essentially assumes the dewatering will not affect the spring. Evidence can be gleaned from water chemistry, geology maps, and pump tests; the model should not be considered evidence because its conceptualization depends on the modeler's interpretation of the evidence.
Water Resources	Great Basin Resource Watch	Cave Springs chemistry shows low concentrations of most ions, with TDS at 270 mg/l; SO42- and Na+ are much of the TDS (Table B-3). Arsenic is at 0.067 mg/l and the only constituent that exceeds state standards at the spring. This chemistry suggests a short flow path. Based on TDS and individual ions, wells MW-1, MW-2a and MW-2B also have similar chemistry, but TW-1 and TW-2 have twice the TDS concentration and exceedances of aluminum and antimony. The monitoring wells and the spring are near the fracture zone down the middle of Cave Spring drainage northwest of the spring. Chemistry suggests there is a different source of water for the monitoring wells and spring than for the pumping wells in the proposed quarry. Chemistry does not indicate there is a connection between the quarry and Cave Spring. ***However, quarry dewatering could significantly change groundwater flow gradients so that flow directions could be affected.***

Issue Category	Organization	Comment[1]
Water Resources	Great Basin Resource Watch	***Evidence is not conclusive regarding Cave Spring being affected by dewatering. Cave Spring may be perched, based on the short flow path as documented by TDS.*** Also, the elevation of the spring is 300 to 400 feet above the groundwater levels in the quarry area. The spring elevation is close to that of VWP-11 which HGL suggests is due to the step in the potentiometric surface across the Cave Springs fault. That the predicted drawdown in the groundwater model (HGL (2000a) Figure 7-13) does not extend very far to the east, including to the spring, reflects the natural gradient, step in the potentiometric surface, and fault. The natural gradient and the barriers between the quarry and spring indicate that effects on the spring are unlikely. Dewatering deep groundwater may not affect it (and other springs) if it is indeed perched.
Water Resources	Great Basin Resource Watch	Piteau (Piteua 2022) conceptualizes that the spring is protected by segmentation which means there is a low-conductivity structure downgradient of the spring, probably controlling its location, that prevents drawdown from affecting it much. As noted, the spring lies in a long flow path which goes through the pit area, so there is flow past the spring at depth. Dewatering drawdown will increase this gradient so that the gradient beneath the spring will increase and likely draw flow from the spring. In other words, the longer mine period causes the drawdown to act on the segmentation that supposedly protects Cave Spring for a much longer period. Compared to the natural piezometric surface, both mine affected piezometric surfaces are steeper just downstream from the spring. It is unclear whether that is an artifact of the modeling or a real difference. **Due to the importance of Cave Spring, *Ioneer should complete two additional tasks to provide a better estimate regarding the affect on the spring. One, to assess the seasonal flow rates, Ioneer should measure the flow monthly to determine whether there are seasonal effects. If the spring goes dry, it would suggest that the flowpath is short and would suggest it is perched. Second, Ioneer should establish a VWP installation within a couple hundred feet of the spring in the direction of the quarry. Simply developing the VWP would provide information on nearby geology and water levels. It should monitor four VWP levels and be monitored for a year prior to quarry development and be used for monitoring.***
Water Resources	Great Basin Resource Watch	6. <u>BLM Should Not Assume that Mining Pit Lake would be Terminal</u> The previous mine plan with a smaller pit and pit lake was borderline as to whether the pit lake would be terminal. The pre-mining water table was not flat but sloped across the quarry. A lake would be a flat surface. The question is whether that flat surface exceeds the recovered groundwater level at any point along its perimeter or provides sufficient pressure into a confined aquifer intersected by the lake to cause flow. As part of the modeling, HGL concluded the pit will be a terminal sink meaning that no water leaves the quarry lake to enter the groundwater. The lake would be mostly full within 40 years and reach a steady state after 60 years (HGL 2020b, p v), although steady state is a misnomer in this area. This would be 66 feet below the pre-quarry groundwater level (Id.), although this does not account for the sloping groundwater level across the quarry. The modeled potentiometric surface at the end of five years (HGL (2020a) Figure 7-13) shows several areas with very steep gradients, including just west and east of the quarry. This reflects the different lithology in various blocks and the segmented groundwater expected by HGL. A steep gradient is required for flow across blocks of significantly different conductivity. There is apparently more connection to surrounding aquifers than simulated in the model. This is based both on the rapid recovery from the TW-02 pump test and the lack of simulated recovery. Dewatering rates may stay high longer than predicted and the lake may recover more quickly than predicted. The model used horizontal flow barriers to simulate the segmentation, but with very little data for transient modeling it is very difficult to calibrate an HFB. The assumption that the area has segmented hydrogeology is based on little supporting data and may be a poor conceptual model of the area.

Issue Category	Organization	Comment[1]
Water Resources	Great Basin Resource Watch	The predictive modeling uses an annual time step for 200 years (HGL 2020b, p 25). Therefore, the modeling does not account for seasonal variability or long-term dry conditions. Groundwater levels that respond to recharge by rising tens of feet could cause significant fluctuations in the pit lake. Due to differing geologic formations intersecting the quarry, the groundwater level may recover at different rates around the quarry. It is possible that quarry water could enter formations either seasonally or after the rapid recovery from a long-term drought. Due to the steep groundwater gradient to the northwest, groundwater could reach the pathway down the drainage and discharge Fish Lake Valley. The modeling does not preclude such an outcome. The current plan Ioneer is proposing is more likely to create a flow-through pit lake. A clear factor is the significantly increased timeline for dewatering. To prove the lake will not be flow-through, Ioneer should make a graph of the pit lake level with the level of the groundwater divide downstream from the lake since both would be recovering from dewatering. This would be after making the suggested changes regarding seasonality and drought discussed above. The natural piezometric surface northeast of the pit slopes more steeply in the direction of the pit than does the surface at the end of mining or after 200 years of recovery. The analysis should provide a visualization of the piezometric used to start transient simulations; it was the steady state calibration surface which was offset about 60 feet based on the calibration statistics. The natural piezometric surface shows a funneling of water from east of the pit through the Cave Springs area. It then turns north through the pit before turning west to continue down the drainage where there are many springs. Modeling simulates dewatering as flattening the surface northeast of the pit which allows water north of the pit to bypass the pit and flow down the drainage while, based strictly on contours, the primary inflow to the pit shifts to the south. This continues through the recovery period. This bypassing of flow from the northeast probably supports the groundwater divide northwest of the pit; without it, the divide could be lower. The pit still captures flow down the drainage that passes Cave Spring. Overall, these flow paths seem unlikely and probably a result of misconceptualization of the flow.
Water Resources	Great Basin Resource Watch	7. <u>Pit Lake (Quarry) Water Quality</u> **a. The Quarry Lake water quality forecast systematically underestimates the load of acidity and other solutes by ignoring the fact that sulfide S reacts over time.** As background, the method used to simulate aqueous chemical reactions in the proposed quarry lake seems sound. Specifically, the method of adding solute loads to the lake as volumes of waters that represent the various sources, where each waters has a complete chemical analysis, simplifies (and thus clarifies) the model approach, and implements the task of mixing solutes and simulating aqueous reactions using the well verified USGS geochemical model PHREEQC. But the wall rock around the proposed quarry and the rock that is proposed for the partial backfill contains appreciable sulfide (up to 1.94% sulfide S), and include some net-acid generating rock (HydroGeoLogic 2020, Appendix C, Summary of ABA and NAG pH Results; Piteau 2022, Figure 4.3 Wall Rock exposed and covered by backfill [TR03_D Plan]; and Piteau 2022, section 4.3 Geochemical Unit Description, Pages 34 and 35). As demonstrated in the kinetic tests (“humidity cells”) conducted on rocks from the Rhyolite Ridge deposit (and as demonstrated in essentially all humidity cell tests), the rate at which solutes are released by sulfide minerals is limited by the kinetics of the oxidation process. Thus the model of solute leaching from runoff and eventual flooding of the Rhyolite Ridge quarry needs to account for the duration over which that rock has been exposed to the atmosphere. Piteau’s description of the model does identify the fact that the duration of wall-rock exposure to the atmosphere affects the concentration in rock leachate: “The geochemical composition of run-off depends on the exposure of rock in contact with water and the frequency of precipitation that rinses the rock exposure” (Piteau 2022, Section 4.2.4 Quarry Wall runoff, Page 31). That is, less frequent rinsing means that there is a longer period for soluble oxidation products to accumulate between rinses, thus producing higher concentration in rinsate.

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Water Resources	Great Basin Resource Watch	But in implementation, the model ignores entirely the duration over which sulfide-bearing wall rock is exposed to the atmosphere, and instead assumes that the concentrations of water leaving each rock type is constant over the entire duration of the model simulation. (These constant aqueous solutions, "geochemical profiles," are assumed to represent runoff from the various sulfide-bearing quarry wall-rock types, or the flushing of accumulated solutes deeper in the quarry wall rock when they are submerged; Piteau Associates 2022, Table 4.5 Base Case runoff chemistry [average final 8 weeks of humidity cell tests], and Table 4.6 Base Case flushing chemistry [average weeks 0-4 of humidity cell tests.]) The underestimate introduced by this model assumption is particularly extreme when considering the "slug of accumulated weathering products [that] is released into the lake from the reactive zone near the water line" (Piteau 2022, 4.3.1 Mass Loading Profiles, Page 36). This describes the fractured rock zone that is behind the quarry face, and is only flushed to the quarry lake when submerged by the lake surface. As the lake reaches its final elevation, the leachate will carry the solutes accumulated after oxidizing for ~40 years; but this is simulated in the model by assuming it is equal to the concentration observed after oxidizing a rock sample in a lab test for one week. In fact, sulfide-bearing rock that oxidizes for 40 years will undoubtedly have released much more soluble pollutants than the same rock oxidized for a week. Beyond the problem with the variable durations of oxidation, the assumption that the concentration measured in a controlled laboratory kinetic test would accurately represent field conditions is entirely arbitrary. For the type of highly soluble elements released by sulfide mineral oxidation, there is no basis for assuming that the concentration in a rigorous laboratory kinetic test (water:rock ratio 1:1) would match the concentrations observed under field conditions, where hydraulic flow and the associated water:rock ratios vary widely. The remedy is to alter the model so that it incorporates an explicit estimate for the rate at which sulfide S oxidizes in exposed pit wall, and the duration over which wall rock is exposed to the atmosphere before it is flooded. With this approach, the load of solutes released from the wall rock by oxidation can then be loaded to the quarry lake as appropriate, based on when they are flushed with runoff or groundwater.
Water Resources	Great Basin Resource Watch	***b. There is no mass balance on the solutes loaded to the lake and the potential sources of solutes.*** Considering soluble sulfate--the primary solute released by the oxidation of sulfide minerals in wall rock and backfill—the quarry lake model has no internal accounting to indicate: 1) How much of the sulfate in the lake originated from the various sources (inflowing groundwater, direct atmospheric precipitation, wall rock, and backfill); and 2) How much of the total sulfide sulfur in each of the sources (wall rock rind and submerged backfill) was lost by flushing to the quarry. The remedy is to incorporate into the quarry lake water quality model an estimate for the total mass of oxidizable sulfide S in the reactive wall rock zone and the rate at which this will oxidize over time, then loads solutes from wall rock to the quarry based on the estimate for cumulative solutes released by oxidation. With this approach, the mass of solutes loaded to the lake over time can be tracked against the total mass of constituents that exist in the reactive wall-rock rind.

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Water Resources	Great Basin Resource Watch	***c. The approach used to estimate model uncertainty systematically underestimates the actual uncertainty in the estimate for solute concentrations in the quarry lake.*** The assumption that wall-rock leachate under field conditions is equal to the composition measured in 1-week humidity-cells tests is ungrounded, and introduces a systematic bias that underestimates pollutant loads to the quarry lake and model uncertainty. The rationale given for using humidity cell data to directly estimate field concentrations is that "early flush concentrations nevertheless provided a conservative estimate to mass loading. Early-time leachates from HCT [humidity cell test] data comprised the highest solute concentrations and thus intend to represent greatest mass loading that could occur upon inundation" (Piteau 2022, 4.6 Predictive Geochemical Model Uncertainty, Page 47). The early-time data from humidity cell tests do often contain the "highest solute concentrations," but only when "highest" is relative to other samples from this operationally-defined lab test. In fact, solute concentrations in leachate from sulfide-bearing waste rock under field conditions can be tens or even hundreds of times higher than concentrations in humidity cell effluent from the same rock. Thus humidity cell effluent concentrations definitely do not provide "conservative estimates" for concentrations under field conditions. Further, these high concentrations in early tests are artifacts of how the rock were handled before testing began (particularly moisture and temperature). Had the Rhyolite Ridge samples of sulfide-bearing wall rock been held longer before lab testing began, these early concentrations would have been higher, and the model estimates for the quarry lake would be higher. This type of model sensitivity to arbitrary testing methods is an indication of erroneous model assumptions. The remedy here is the same as for tracking mass balance on pollutants loaded to the quarry lake: Estimate the total mass of solutes that exist in the wall rock and the rate at which these could be released by oxidation, and then calculate model uncertainty from the uncertainty in these two parameters.
Water Resources	Great Basin Resource Watch	***d. Modeling Analysis Incorrectly Ignores Long Term leaching*** Piteau (Piteau 2022) states in their pit lake modeling that, "After initial flushing, submerged backfill is assumed to be non-reactive and no further solutes are released." It is possible that oxidation processes could largely discontinue once the backfill is inundated and dissolved oxygen is consumed. However, leaching from the backfill could continue for many years even hundreds of years as it does for the backfill at the proposed Thacker Pass project. The assumption used by Piteau is very non-conservative and BLM should require Piteau to lift that assumption in the pit lake (quarry lake) analysis. ***Overall, BLM should independently assess the water quality analysis and solute loading into the pit lakes.***

Issue Category	Organization	Comment[1]
Water Resources	Great Basin Resource Watch	8. Monitoring Plan from 2020 was Insufficient and Needs to be Updated Appendix P to the state of Nevada Water Pollution Control[30] permit application contains the proposed monitoring plan. Primary concerns for monitoring are whether contaminants from quarrying or from the tailings deposits could reach the Cave Spring drainage. Also, the groundwater level in the area of the tailings appears to be close to the ground surface based on the level of springs 6 and 7, which appear to be connected to the intermediate aquifer based on their high TDS values; there is concern whether contaminants from the tailings could reach groundwater. In addition to the requested additional monitoring well for the quarry lake discussed below, there is a need for another baseline monitoring well upgradient of the tailings pile; MW-1 is insufficient because it is near the main drainage whereas the bedrock underlying the tailings is outside of the drainage. MW SOSF, downgradient of the tails, is probably sufficient for monitoring leaks from the tails if it is placed properly in the most permeable bedrock below the tails and if there is leak detection under the tails. The monitoring plan does not discuss the screened or open interval for the wells. Because monitoring wells should not screen more than about 20 feet, the monitoring wells should be sampled with low flow pumps to draw from specific levels if the open interval exceeds 20 feet. To establish a vertical profile of chemistry within the aquifer, the monitoring wells should be sampled using low flow sampling at various levels prior to the commencement of quarrying. The monitoring plan relies on the assumption that the quarry lake will be terminal. This review has disputed the certainty of that assumption as discussed above. The monitoring does not, but should include monitoring to verify whether the lake is terminal. Prior to closure, an additional monitoring well should be added between the quarry and the Cave Springs drainage north of the quarry. It should be established to both monitor the recovering groundwater table and the changing groundwater chemistry. Because it would be in an area of varying groundwater levels, it should be screened either in multiple development or sampled using low flow pumps to draw from various levels to ascertain a vertical profile in the aquifer. [30] NDEP 2020, “Rhyolite Ridge Lithium-Boron Project Water Pollution Control Permit Application Esmeralda County, Nevada,” Nevada Division of Environmental Protection, Bureau of Mining Regulation and Reclamation, May 2020.

Issue Category	Organization	Comment[1]
Water Resources; Geochemistry	Great Basin Resource Watch	Additionally, to verify whether the evolving groundwater table near the quarry will flow toward the forming pit lake, the VWPs near the quarry should be retained; this is especially critical for VWP-3 which appears to be just north of the quarry. If it will not survive quarry construction, a replacement VWP should be installed to its north as close to the quarry as possible. This should be completed prior to quarry construction so that natural water levels as well as evolving water levels due to construction can be determined. Additionally, another VWP should be installed between VWP-3 (or its replacement) and VWP-8, which is within the Cave Spring drainage. VWP-3 (or its replacement), -8, and a new VWP between the two would allow a water surface profile to be monitored between the quarry, the forming quarry lake, and the drainage to verify whether the quarry is terminal. These VWPs should each have four monitoring levels as were used in VWP-3. Three additional VWP monitoring levels should be added to VWP-8 and the new VWP between -3 and -8 should also have four levels. Four levels are essential to monitor the vertical gradient of flow to and from the quarry and quarry lake and to provide monitoring data that would allow groundwater surface profile modeling to predict the future status of the forming quarry lake (a vertical two-dimension groundwater flow model could be used for this). The monitoring plan recommends quarterly sampling for the monitoring wells. That would be sufficient only after a year of monthly sampling to establish seasonal trends. As noted above, the groundwater level probably varies substantially due to seasonal changing recharge and it could lead to seasonal wetting and drying which could also lead to seasonal flushes of contaminants. Understanding natural seasonal variability is essential for understanding whether observed changes are natural or due to the quarry. The monitoring plan fails to include any spring monitoring which it should. As described above, a VWP should be installed near Cave Spring to provide warning of impacts to Cave Spring. It is understandable that Cave Spring will not be sampled for chemistry because that would not show anything regarding the spring going dry, but its flow rate should be monitored at least quarterly, after monthly monitoring for a year prior to quarrying to establish a baseline. Chemistry at the springs just west of the tailings, SP-06 and -07, should also be monitored quarterly to verify whether the tails affect those springs.
Wetlands and Riparian Areas	Great Basin Resource Watch	9. <u>Groundwater Dependent Ecosystem Standards and WOTUS</u> In December of 2022 the EPA updated regulations relating to which water features qualify as Waters of the United States (WOTUS). This includes wetlands in addition to navigable waters. Has the lead agency analyzed the Plan of Operations through the frame of the updated WOTUS definition? If so, does the lead agency interpret additional downstream wetlands such as those at Fish Lake Valley Hot Well as being waters of the state, and what additional actions or consideration must be taken due to the updated definition? If not, how does the lead agency plan to implement the new Waters of the United States definition, and what is the timeline to re-analyze the plan of operations in terms of this new policy. Springs and their environs constitute groundwater dependent ecosystems. These ecosystems are critical to many threatened and endangered species, are disproportionate centers of biodiversity in the arid west, and can be decimated through mine dewatering. Cave Springs would likely be severely impacted, likely drying up completely due to pit dewatering. This is an essential resource for managing healthy plant and animal populations.

Issue Category	Organization	Comment[1]
Native American Concerns and Consultation; Wildlife	Great Basin Resource Watch	Cave Springs is utilized by a Bighorn Sheep herd that would be impacted as well as other mammals such as deer. The spring system also supports pinyon trees which provide an important Indigenous cultural practice through harvesting and associated Traditional Ecological Knowledge. In November of 2021. (the) "White House Office of Science and Technology Policy (OSTP) and the White House Council on Environmental Quality (CEQ) jointly released a new memorandum that commits to elevating Indigenous Traditional Ecological Knowledge (ITEK) in federal scientific and policy processes." Enacting this commitment will require applying ITEK to decision making as it relates to Cave Springs and the broader project impacts. • How will spring mitigation protect spring source as an important component to ITEK rather than simply spring flow? • How will the mine plan ensure the integrity and long term sustainability of local groundwater dependent ecosystems such as around cave spring? • How will impacts to Bighorn Sheep and other mammals be mitigated? • How will impacts to pine nut harvests be mitigated? • How will ITEK be utilized in decision making? • What is the process for soliciting local ITEK, how will it be analyzed, and what role(s) beyond consultation will local Indigenous stewards of ITEK play? • Will the project follow practices outlined in the Forest Service's Groundwater-Dependent Ecosystems Level 2 Field Guide dated March 2012? • Furthermore, how will protocols and guidelines for groundwater dependent ecosystems listed below be utilized in permit analysis, and if not for what reasons? 1. National Protocols for Inventorying Discharge National Protocols for Inventorying Discharge. 2. Technical Guide to Managing GroundWater Technical Guide to Managing GroundWater Resources Resources (FS-881, May 2007). 3. Draft National Policy on Groundwater Resource Draft National Policy on Groundwater Resource Management.
Water Resources	Great Basin Resource Watch	10. Water Resources/Springs According to the Nevada Division of Water Resources, Fish Lake Valley (Basin 117) has an annual groundwater yield of 30,000 acre-feet/year (AFY). However, permits for 65,000 AFY have been issued and 52,030 AFY are being used. 51,000 AFY of that was for irrigation (i.e., agriculture). It appears to be an overdrafted groundwater basin. It is our understanding that Ioneer is leasing water from people who have water rights. Is the water right(s) covering the dewatering of the quarry and the groundwater pumping in Fish Lake Valley or just the pumping in Fish Lake Valley? The EIS should identify how much total water Ioneer will use annually through dewatering and how much it will pump from Fish Lake Valley directly (and in terms of AFY), the rate of flow, and expected water table drop in the valley. Although the system allows Ioneer to use a rancher's water rights, it should be pointed out that it perpetuates the over-drafting of the basin. Please explain why the well water from Fish Lake Valley is needed. Does it mean the water table in the project area will drop so much that the wells would need to go deeper or, more alarming yet, that there won't be enough water to pump? The EIS should explain why pumping in Fish Lake Valley is needed. The POO says the rate of water use from the Fish Lake Valley wells will be 2,500 gpm. This converts to 4,033 AFY, which is a moderate amount. If this calculation is correct, then is it in addition to what is being withdrawn by the local ranchers or will a rancher cut back by the amount Ioneer uses? The EIS should identify how it will impact the water table, Fish Lake Valley hot springs, and the groundwater dependent ecosystems in the valley.

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Water resources	Great Basin Resource Watch	The POO says the rate of dewatering will be 110 gpm in Section 3.12.4. This converts to just 18 AFY, a small amount. However, that is just what will come out of the quarry. There will be supplemental pumps. How much will the supplemental pumps be pumping? The POO in Appendix D says the water table will be lower than it is now when the mining is over and that it will be a hydraulic sink for 100 years. How far is the reach of the hydraulic sink, i.e., the equivalent of a cone of depression around a well? The POO says the groundwater level is at about 150 feet below the surface. If it drops more, will it impact the pinyon woodlands in the region? Will it affect springs in the region? Although the amount of water pumped and used for this project doesn't appear to be a large amount, it will still lower the groundwater table for 100 years, maybe more. It is important that the EIS draws out all the impacts of a lower water table within the project area and surrounding it; all within the sphere of influence of the quarry's hydrologic sink. How many springs will be lost to wildlife from drying up? There are many springs as shown in Figure 1 page 203 of the POO and they are critical to wildlife. Based on observations by Sierra Club members, North Spring (Spring 9), Coyote Hole (Spring 8), and Cave Spring (Spring 1) have good flows. Although Cave Spring was dry in the summer of 2022, a drought year, Coyote Hole was still flowing. It is important to ensure that North Spring, Coyote Hole, and other springs outside of the project area are not impacted by this project. The POO says only Springs 6, 7, and Cave Spring will be monitored quarterly. They should be monitored.
Water resources; Wildlife	Great Basin Resource Watch	The plan doesn't say how the monitoring data will be used. How will it be used? In the EIS, please provide the baseline rates of flow for each of the springs in Figure 1 and discuss the potential impact to each from the quarry sink. (Presumably, the Hydrological Baseline Report (HGL 2020a) has this information, but it was not available during the scoping comment period.) Please consider setting trigger thresholds that will cause dewatering to stop if they drop below a certain flow rate or if the water table drops by a certain amount. Also consider placing guzzlers out for wildlife, but far enough away from the Tiehm's population to not attract them to the Tiehm's. Cave Spring and Spring 6 will be lost to wildlife just from all the truck and human activity and noise. There's no way animals will go near it with truck traffic so close to these springs. Springs 2-5 and 7 might be lost as well for the same reason. With the loss of these springs to wildlife, it makes it all the more important that the other springs continue to support wildlife and riparian habitat.
Water resources	Great Basin Resource Watch	11. Water Allocation The Project is situated in the Fish Lake Valley hydrographic basin, basin number 117 per the Nevada Division of Water Resources. The basin has a supposed perennial yield of 30,000 acre feet per year (afy), though it is unclear if current recharge levels under a changing climate are continuing to provide such an abundance of groundwater to the valley. There are 51,585 afy of underground water rights granted in Fish Lake Valley, and an additional 5,914 afy of geothermal water rights. This does not include the full appropriation of all surface water resources. As such, Basin 117 is severely overappropriated.

Issue Category	Organization	Comment[1]
Project description; Land Use	Great Basin Resource Watch	12. <u>The EIS Must Thoroughly Examine All Impacts Related to Pumping and Piping Water from Fish Lake Valley</u> The POO states that after 7 years of supplying water from on-site wells, the Project will build a pipeline down to Fish Lake Valley and pump water from the valley up to Rhyolite Ridge for use in the project.[31] During the public scoping meetings for the Project, BLM and the project proponent stated that the pumping in the valley would commence after 5 years, not 7. The POO does not give a proposed length for the pipeline, nor does it specify proposed points of diversion. We estimate the pipeline to be 23 miles in length based on an analysis of the maps in the POO. The EIS must disclose the parameters for the pipeline and the proposed points of diversion. Analysis and any approval of this pipeline must also be done through FLPMA's Title V Right-of-Way (provisions) as these are the provisions that govern review and approval of water pipelines.[32] The location of groundwater pumping could have significant impacts on the environment in Fish Lake Valley. There are groundwater dependent ecosystems in Fish Lake Valley, in particular from McNett Ranch and flowing northeast to the Fish Lake Valley playa, which likely source their water, in part, from shallow alluvial flow moving down from the White Mountains. While the water the Project is proposing to use is likely currently being pumped for irrigation, some percentage of irrigation water is unused by crops and recharges the shallow alluvial aquifer. The EIS must disclose and analyze the amount of water which will be lost to recharge in the shallow alluvial aquifer from moving the point of use for the water out of Fish Lake Valley proper and up to Rhyolite Ridge. Unlike irrigation water, water used consumptively at Rhyolite Ridge will no longer recharge the aquifer. [31] Ioneer 2022, p. 50. [32] See 43 U.S.C. Sec. 1761-1771, 43 C.F.R. Part 2920.
Wildlife and special status species	Great Basin Resource Watch	There are two sensitive species which live in Fish Lake Valley in the general vicinity of the proposed pipeline and possible pumping locations. The Fish Lake Valley tui chub (Siphaletes bicolor ssp. 7) is an endemic undescribed subspecies of fish which lives solely at the springs at McNett Ranch. Due to the threats from groundwater drawdown, geothermal energy, and lithium mining, the Center petitioned the U.S. Fish and Wildlife Service to protect the Fish Lake Valley tui chub under the Endangered Species Act in 2021.[33] The Service issued a 90-day finding in 2022 indicating that the petition presented substantial scientific evidence indicating that the petitioned action may be warranted, and kicking off a full review of the fish's status.[34] The species is given a T1 ranking by NatureServe, indicating that it is a critically imperiled subspecies.[35] The Fish Lake Valley tui chub, once distributed in springs across Fish Lake Valley, is now hanging on to existence by a thread. Any perturbation to the springs which create its habitat could spell doom for the subspecies. [33] Center for Biological Diversity. 2021b. Petition to list the Fish Lake Valley tui chub under the Endangered Species Act. 40 pp. [34] 87 Fed. Reg. 51635. [35] NatureServe 2023. Fish Lake Valley tui chub. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.105276/Siphateles_bicolor_ssp_4
Wildlife and special status species	Great Basin Resource Watch	The Tecopa bird's beak (Chloropyron tecopense) is a near-endemic species of wildflower which lives in the alkali wetlands in northern Fish Lake Valley.[36] The plant grows in 2-3 populations, extending in a line from McNett Ranch east and northward past the hot well and up to the Fish Lake Valley playa, where they form a ring around the lakebed. The plant relies on shallow groundwater, seasonal inundation, and access to other plants, because it is a hemiparasite. It is suffering from disturbance, habitat alteration, and is threatened by groundwater overpumping, geothermal energy, and lithium mining. The species is given a G2 ranking by NatureServe, indicating that it is an imperiled species.[37] Perturbations to shallow groundwater flow through the alkali wetlands of Fish Lake Valley could significantly impact this species growth, reproduction, and long-term viability. [36] The Tecopa bird's beak also grows in a population group along the Amargosa River in Nye County, Nevada and Inyo County, California. [37] NatureServe 2023. Tecopa bird's beak. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.158897/Cordylanthus_tecopensis

Issue Category	Organization	Comment[1]
Wildlife and special status species	Great Basin Resource Watch	Other species likely rely on the groundwater dependent ecosystems of northern Fish Lake Valley. There is an undescribed or unknown taxon of toad at McNett Ranch, and it is highly likely that numerous species of migratory and resident birds use the alkali wetlands in the area. Baseline surveys must be provided of the alkali wetlands in northern Fish Lake Valley, and the impacts to these species must be disclosed and analyzed in the EIS. The EIS must disclose and analyze the impacts of moving water out of Fish Lake Valley and up to Rhyolite Ridge on the hydrographic systems which sustain the Fish Lake Valley tui chub and the Tecopa bird's beak, as well as numerous other sensitive species which use the alkali wetlands of northern Fish Lake Valley. The EIS must also examine cumulative impacts on these sensitive species and ecosystems in light of the extensive geothermal exploration and proposed lithium mining in the area.
Law and Regulation	Great Basin Resource Watch	13. The EIS Must Not Be Approved Without Approved Water Right Change Applications from the Nevada Division of Water Resources At the scoping meetings for this project, Scott Distel of BLM Battle Mountain District said, "By regulation the BLM cannot approve a project that requires water rights for which no water right exists… BLM cannot authorize projects for which water rights are required where no water right exists." In a subsequent email, Mr. Distel cited 43 CFR 3809.402(a)(6) as the authority for this statement. On December 13, 2022, BLM Southern Nevada District sent a letter to Control Technology, Inc. notifying them that they were denying the company's application for a pumped hydro storage project in Clark County, Nevada. The letter stated, "Any BLM decision to authorize your hydropower project prior to the approval of the use of State water resources would result in unnecessary or undue degradation of public lands which would be inconsistent with the purposes for which BLM manages public lands."[38] [38] BLM 2022b. Letter to Control Technology, Inc. re: N-101255.
Law and Regulation	Great Basin Resource Watch	The Project claims to have secured water rights from agricultural water users in Fish Lake Valley. However, perusal of the Nevada Division of Water Resources website reveals that Ioneer does not have any water rights in its name, nor does it have title to any water rights. Any agreements Ioneer has reached with current water rights owners for temporary changes in the manner and place of use of the water have not been submitted to the Nevada Division of Water Resources, and have not been subject to applications or approval by the State Engineer. As such, BLM must refrain from authorizing this project until the Project has gone through the change application process and obtained legitimate access to the water rights for the Project.
Law and Regulation	Great Basin Resource Watch	Relatedly, BLM cannot authorize any operations that may adversely affect federal reserved waters and lands under Public Water Reserve # 107 (signed by President Coolidge in 1926). The lands around any PWR 107 spring or waterhole were withdrawn from entry and thus no facilities are allowed within this ¼ mile around each PWR 107 spring. At a minimum, BLM must fully investigate and determine whether any PWR 107 waters may be affected by the project. It should be noted that the failure of Nevada to adjudicate these federal reserved water rights does not mean that PWR 107 rights do not exist or that BLM is excused from analyzing and protecting them and the surrounding lands.
Wildlife	Great Basin Resource Watch	WILDLIFE CONSIDERATIONS A full inventory of the loss of plant and animal species, examining both estimated numbers and variation of specie, needs to be done as a result of land disturbance and waste rock coverage. An understanding of migratory routes needs to be resolved, and the impacts of the loss of these migratory routes from the various land disturbances should be addressed. There needs to be particular emphasis on the impacts to migratory bird nesting sites and raptors. In some cases of migratory birds very limited nesting locations exist, thus there is the potential for the mine to seriously threaten such species. The degree to which the action may adversely affect an endangered or threatened species or its habitat must be addressed.

Issue Category	Organization	Comment[1]
Wildlife	Great Basin Resource Watch	1. Mega Fauna Both the 2022 Baseline Biological Survey Report, which covers the expanded area to match the July 2022 version of the Plan of Operations, and the 2019 Baseline Biological Survey Report, which covers the project area described in an older version of the POO report, say that NDOW has no knowledge of pronghorn within 4 miles of the project area. The 2022 Baseline Biological Survey report cites evidence to the contrary. We agree. Our members have observed and taken photos of four pronghorn in the project area where the UNR seed test sites are and watched them move northward into the extended project area. Our members have also observed pronghorn droppings throughout the project area and in the Tiehm's population area. Pronghorn are using the area. They will be forced to change their migration route around the project area. Our members have observed bighorn sheep on several occasions on Rhyolite Ridge, on the ridge above Cave Spring, and on a hill above Tiehm's subpopulation 1. Thirteen bighorn sheep were observed moving up the east side of Rhyolite Ridge together. We have photos of them. There are bighorn sheep tracks and scat throughout the region. They are definitely present in the region and will be forced to travel different routes because of this project. The EIS should address the impact to the ungulates that use the project area when they lose that corridor and might be forced closer to the cattle that graze out there.
Wildlife	Great Basin Resource Watch	Evidence from 40 field visits to the Tiehm's buckwheat habitat, as well as extensive documentation from camera traps, reveals that animals, including megafauna such as desert bighorn sheep (Ovis canadensis nelsoni) and pronghorn (Antilocapra americana), spend substantial time within the Tiehm's buckwheat habitat. Scat from these creatures is clearly visible throughout the buckwheat's habitat, implying they provide nutrient cycling services which may be otherwise unavailable in the nutrient-limited highly mineralized soils that Tiehm's buckwheat grows in. They also clearly contribute to the buckwheat habitat's disturbance regime, in the form of their hoofprints. We cannot know the exact role large ungulates play in the buckwheat's life cycle and habitat maintenance, but it is clear that they do play a role. Thus a key question must be: how large of a buffer around the designated critical habitat and 500 meter buffer is necessary to maintain the ecosystem functions of large ungulates? And since the ecosystem function of these ungulates is largely dependent on their behaviors, how large of a buffer is necessary to limit disruption to the behavior of large ungulates?
Wildlife	Great Basin Resource Watch	There is a varied literature on the impacts of open-pit mining to large ungulates, and while various studies have made varying qualitative assessments about whether open-pit mining is beneficial to ungulates or not, they universally find that open-pit mining changes large ungulate behavior. A 2005 study is perhaps most instructive, finding significant changes in desert bighorn sheep behavior and foraging patterns in newly-mined areas in the Panamint Mountains of Death Valley, less than a hundred miles from Rhyolite Ridge.[39] The study concluded that if such behavior changes were prolonged it could result in reduced nutrient intake resulting in "demographic consequences." Another study further south examining mines in the San Bernardino Mountains found mixed consequences for bighorn sheep from mining: the sheep avoided roads and other areas of continuous human disturbance, but were found to occupy the actual mine site at a modestly higher frequency.[40] This study is less instructive than the 2005 study because mining at the site studied has been ongoing for decades, however it is another indication that mining activity alters the behavior of bighorn sheep. While other studies seem to minimize the behavioral changes from bighorn occupying a long-mined site, they nonetheless found changes to amount of time spent feeding & bedding, and alertness levels, for sheep within the mine site.[41] One study focusing on a different large ungulate, mule deer, found significant behavior changes to migration patterns, resource utilization, and energy expenditure in relation to a large new gold mine (Bald Mountain Mine in White Pine County, Nevada).[42] While mule deer have not been specifically documented within Tiehm's buckwheat habitat, they are known to inhabit the Silver Peak Range, and at any rate, it is illustrative that large new mines can influence the behavior of ungulates. [39] Oehler, M.W., Bleich, V.C., Bowyer, R.T., Nicholson, M.C., 2005. "Mountain sheep and mining: Implications for conservation and management." California Fish and Game 91(3): 149-178. [40] Bleich, V.C., Davis, J.H., Marshal, J.P., Torres, S.G., Gonzales, B.J., 2009. "Mining activity and habitat use by mountain sheep (Ovis canadensis)." Eur J Wildl Res 55:183-191. [41] Jansen, B.D., Krausman, P.R., Heffelfinger, J.R., de Vos Jr., J.C., 2007. "Influence of Mining on Behavior of Bighorn Sheep." The Southwestern Naturalist 52(3): 418-423. [42] Blum, M. E., Stewart, K. M., & Schroeder, C. (2015). Effects of large-scale gold mining on migratory behavior of a large herbivore. Ecosphere, 6(5): 74.

Issue Category	Organization	Comment[1]
Wildlife	Great Basin Resource Watch	While the exact ecosystem function of large ungulates as it pertains to Tiehm's buckwheat has yet to be quantified, it is clear that large ungulates play some role in the ecosystem that Tiehm's buckwheat inhabits. The designated critical habitat buffer of 500 meters is clearly not enough to prevent changes to large ungulate behavior. Large ungulates have senses more acute than humans, and it's quite obvious that mining activity within 500 meters of a human would impact their behavior through noise, dust, human disturbance, and impacts from blasting and heavy equipment. A one mile buffer would be a more conservative decision to ensure that the ecosystem functions which sustain Tiehm's buckwheat are not negatively impacted by mining operations.
Wildlife	Great Basin Resource Watch	2. Other Sensitive Species Based on a search of iNaturalist for observations in the project area, you can add Western Pygmy Blue, Panamint Rattlesnake, Western Whiptail lizard, and the Desert Collared Lizard to the list of animals living in the project area. The Desert Collared Lizard is on the Nevada Division of Natural Heritage watch list as a BLM sensitive species. There is also a sage grouse observation in iNaturalist to the south of the proposed quarry. A woodrat's nest and a fox hole were observed by our members in the quarry area as well. As far as iNaturalist plants go, Boechera shockleyi and Astragalus lentiginosus are found in the area too. Boechera shockleyi is on the NNH watch list and some variations of Astragalus lentiginosus are on both the NNH at risk and watch lists.

Issue Category	Organization	Comment[1]
Threatened and Endangered Species	Great Basin Resource Watch	3. Pollinators The genus Eriogonum (wild buckwheat) is one of the most species rich-genera in North America, yet little is known about pollination biology across the group.[43] Self-compatibility has been documented in some species of wild buckwheat, although rare species of Eriogonum are known to be primarily outcrossing,[44] and several species are known to attract a large diversity of pollinators, including beneficial insects.[45] Habitat loss, modification, and fragmentation have severe consequences not only for rare plant populations, but also for their pollinators. Fragmentation of habitat can further impact plant reproduction, including seed set and recruitment by reducing pollinator communities and limiting pollinator service.[46] Reduction and limitation of pollinator service can be detrimental to rare plant populations that rely on cross pollination for successful reproduction and recruitment of fit offspring.[47] For example, a change in pollinator availability and behavior could lower outcrossing rates in self-compatible species.[48] Decline of rare plant populations can also be further exacerbated by the number and kinds of pollinators that are available to pollinate flowers. A study investigating arthropod and pollinator diversity and abundance in Tiehm's buckwheat was initiated in 2020.[49] Sampling for arthropod diversity and abundance and observations of flower visitation were documented at two Tiehm's buckwheat subpopulations and compared with two adjacent sites where Tiehm's buckwheat does not occur. In addition, flowers were bagged to test for the ability of Tiehm's buckwheat to produce seed via self-pollination (self-compatibility). The study found that Tiehm's buckwheat receives a relatively large number of insect visitors when flowers are open in May and June. Like many other species of Eriogonum, Tiehm's buckwheat appears to be pollinated by a diversity of generalist species, with 12 orders, 73 families and 130 species documented at Tiehm's buckwheat sites in just one season of sampling. Temporal variation in arthropod composition and abundance was also documented indicating that there could also be interannual variation of the arthropod community. Generalist pollinators are important in pollinator communities because they are known to increase pollinator network connectivity and contribute to the overall structure and stability of pollinator networks.[50] [43] James, David G, L. Seymour, G. Lauby, and K. Buckley. 2014. Beneficial insects attached to native flowers buckwheats (Eriogonum Michx) in Central Washington. Entomological Society of America. 43: 942-948. [44] Neel M.C., Ross-Ibara J., Ellstrand N.C. 2001. Implications of matting patterns for conservation of endangered plant Eriogonum ovalifolium var. vineum (Polygonaceae). American Journal of Botany. 88: 1214- 1222. See also Riley L., M.E. McGlaughlin, and K. Helenurm. 2018. Limited genetic variability in native buckwheats (Eriogonum: Polygonaceae) on San Clemente Island. Western North American Naturalist. 78: 722- 738. [45] James et al. 2014; Riley et al. 2018. [46] Tepedino V.J., W.R. Bowlin, and T.L. Griswold. 2011. Diversity and pollination value of insects visiting the flowers of a rare buckwheat (Eriogonum pelinophilum: Polygonaceae). In disturved an "natural" areas. Journal of Pollination Ecology. 4: 57-67. See also Neel et al., 2001. [47] Neel, et al., 2001. [48] Id. [49] McClinton, Jamey D., Shriver, Robert K., and Leger, Elizabeth A.. 2022. "Ecology of Eriogonum Tiehmii, a Rare Soil Specialist: Arthropod Diversity, Soil Preferences, and Demography." Ecosphere 13(8): e4187. https://doi.org/10.1002/ecs2.4187 [50] Cusser S., and K. Goodell. 2013. Diversity and Distribution of Floral Resources Influence the Restoration of Plant–Pollinator Networks on a Reclaimed Strip Mine. Restoration Ecology. 21: 713–721.

Issue Category	Organization	Comment[1]
Threatened and Endangered Species	Great Basin Resource Watch	Abundance and diversity of arthropods was similar between the occupied and unoccupied Tiehm's buckwheat sites. This is significant because the Tiehm's buckwheat habitat is largely dominated by Tiehm's buckwheat itself, and plant species that co-occur and form any significant cover are primarily wind pollinated and are not insect pollinated (e.g Atriplex confertifolia, Hilaria jamesii, Sporobolus airoides, and the exotic invasive Halogeton glomeratus). The adjacent sites have higher species richness and cover of other insect pollinated species, indicating that Tiehm's buckwheat disproportionately supports arthropods within its habitat. In addition, the report notes that the diversity of insects at Tiehm's buckwheat sites was remarkably high when compared to studies of other wild buckwheats, including E. crosbyae and a study of beneficial insects in Eriogonum in Washington.[51] Open pollinated flowers of Tiehm's buckwheat produced a higher seed set than those flowers that were bagged and excluded from pollinators, indicating that it is self-compatible, but that pollinators greatly increase seed production. Thus, pollinator diversity and abundance is essential to facilitate outcrossing and is critical to reproduction in Tiehm's buckwheat. [51] McClinton et al. 2022; James et al. 2014.
Threatened and Endangered Species	Great Basin Resource Watch	A recent study detected negative effects to pollinator communities in the Mojave Desert due to anthropogenic disturbance including habitat fragmentation and modification.[52] Significantly lower species richness and counts in non-bee insect flower visitors were detected within disturbed areas when compared to non-disturbed areas. Further, the study found that disturbance of desert soils such as compaction and erosion and removal of vegetation during site preparation affected the cover of desert plant species as much as seven years post-construction.[53] Pollinator abundance and species richness are tightly associated with abundance and diversity of plants, and decrease with distance from high quality habitat.[54] Thus, establishing a buffer that is large enough to maintain high quality habitat is essential to maintain diverse pollinator communities. Habitat protection and protection of areas surrounding the Tiehm's buckwheat sub-populations will be important to encourage insect diversity and abundance, to promote outcrossing within and between subpopulations, and to reduce self-pollination.[55] Designating a sufficient buffer to ensure ecological security, including maintenance of the pollinator communities will be essential to maintain genetic diversity within and between populations. Considering the flight distance of potential floral visitors is an important factor to evaluate the potential impacts of disturbance, especially with regard to establishing an appropriate buffer size that is sufficient to maintain pollinator communities. Distances as short as 100 m to disturbed areas have been documented to serve as a filter, reducing pollinator diversity by eliminating nesting habitat or other essential resources.[56] Plant-pollinator networks have also been shown to be temporally dynamic and thus protecting areas of sufficient size will increase stability of generalist pollinator networks through space and time. [52] Grodsky S.M., J.W. Campbell, and R.R. Hernandez. 2021. Solar energy development impacts flower-visiting beetles and flies in the Mojave Desert. Biological Conservation 263: 109336. [53] Id. [54] Cusser and Goodell, 2013. [55] Tepedino et al. 2011; Neel et al. 2001. [56] Cusser and Goodell, 2013.

Issue Category	Organization	Comment[1]
Geochemistry	Great Basin Resource Watch	GEOCHEMICAL CHARACTERIZATION TESTING PROGRAM The geochemistry of waste rock must be thoroughly analyzed for potential acid production, including crystallographic analysis to determine the extent of fracturing expected upon blasting. In this regard the full range of static and kinetic tests need to be preformed. There must be a contingency plan of how to deal with an unexpected increase in acid generation in the waste rock piles and the heap leach pad as mining proceeds. The EIS should address the following: ● Phase 2 static tests were conducted on 19 waste samples. How do the samples selected represent the various PAG waste, non-PAG waste and calcareous waste described elsewhere in the document. ● How do the four HCT's represent the various types of wastes? ● Why was NNP estimated and utilized as the primary basis and not ANP/AGP? Please provide a basis for the statement that "The NPR invariably becomes misleading at low carbonate and low sulfur levels, where the NNP is more appropriate for test interpretation." ● Why does the interpretation assume low sulfur equates to low risk of acid drainage despite suggestions otherwise in both the GARD Guide and Price 2009 (MEND)? ● Has testing been performed specific to high alkalinity calcareous material? While it is accepted that site-specific criteria should be developed the EIS should provide explanation of the justification used for those criteria, particularly where they differ from common approaches recognized by existing BLM, EPA or other guidance (e.g. GARD Guide, Mend 2009, etc). BLM must also do a thorough analysis of the effects of activities within the broad cumulative impacts area including rights reserved under Public Water Reserve # 107. Due to the importance of these water rights, the EIS must catalogue each potentially affected water right and the ongoing and potential impacts from the proposed project plus reasonably foreseeable future activities/projects in the region.
Reclamation	Great Basin Resource Watch	RECLAMATION PLAN There must be a reclamation plan that includes how the operator will manage the occurrence of leaks in the waste water containment system; storage ponds, heap/leach, and waste rock. A detailed analysis needs to be done that examines the situation of liner failure of the leach pad during and at long times (through 60-80 years) and the impact on the groundwater. ***A complete land and water systems restoration plan for all aspects of the mine needs to be detailed.***
Reclamation	Great Basin Resource Watch	Reclamation of mining activity is important to Nevada's wildlife resources. The key to providing benefits to wildlife from reclamation is in developing a suitable vegetative community on the reclaimed disturbance. The Rhyolite Ridge project area is an important habitat for numerous wildlife species. Efforts to salvage as much topsoil as possible should be encouraged. Having topsoil on the reclamation site greatly enhances the revegetation success. There should be a detailed description of the flora and fauna in the OSF areas so they can be reclaimed as well. Dirt piles will fill these canyons or depressions for 17 years and everything underneath them will die. They will need to be restored to their original state as much as possible.
Reclamation	Great Basin Resource Watch	Many mines never close, they just stay dormant for one reason or another such as waiting for better technology to reprocess the tailings to eke out more minerals or because the cost of reclamation will exceed the amount of the bond. So, reclamation is never finished. What is going to prevent that from happening with the Rhyolite Ridge Mine?
Reclamation	Great Basin Resource Watch	1. Quarry Lake We ask that the quarry lake be filled in to the point that the groundwater is hydrologically reconnected and groundwater flows through the quarry area. The quarry should be filled high enough to not create a wetland area, but a dry area.

Issue Category	Organization	Comment[1]
Reclamation, Threatened and Endangered Species	Great Basin Resource Watch	2. Vegetation and Seeds Seedbed preparation is very important to the success of the reclamation effort. The Rhyolite Ridge Plan of Operations should include provisions to contour the mining disturbance to the natural slope of the surrounding terrain. This will provide a location for vegetation establishment that will be comparable to the surrounding vegetative community and provide good cover and forage for wildlife on the reclaimed disturbance. The seed source may be a mix to stabilize the soil and fast growing plants, like grasses. The project area is sparsely covered in grasses unlike the area on the east side of Rhyolite Ridge, on the north side of Cave Spring Road. Our concern is that if it is covered in fast growing grasses may move into the Tiehm's buckwheat population and choke it out. How can this be avoided?
Reclamation	Great Basin Resource Watch	3. Hot Creek Road Reclamation of the area should also include the disturbed areas along Hot Ditch Road and the Cave Springs Road that were created by Ioneer during the exploration phases and any additional disturbances from the mining phase. Already, with the fexploration phase, areas off to the sides of the Hot Creek Road have been disturbed and are covered in noxious weeds. Scraped and cleared areas where monitoring wells were put are also full of weeds. These areas should be reclaimed by Ioneer as well. That can be done now, in fact.
Water Resources, Vegetation	Great Basin Resource Watch	4. Riparian Areas Section 4.4 Riparian and Surface Water on page 55 of the POO states: "There are no direct impacts to riparian areas or surface water resources within the Project Area boundary as a result of Project activities. Therefore, no reclamation activities are planned." The EIS should describe the riparian area around each spring in the project area, what is growing there, the size of the riparian area, and if it will be impacted by this project. Will there be a loss in riparian habitat? According to the Proposed Project Facilities map (Figure 3) in the BLM scoping notice, Spring 6 is at the edge of the Spent OSF. Will it be buried? There are other springs in the immediate area that could be affected by groundwater pumping and the pit lake groundwater sink. If these springs dry up or have diminished flows because of this project, then there should be mitigation for any loss of the springs and restoration for any lost riparian habitat. It would be better yet if the springs were prevented from drying up. They could be monitored and triggers could be established where pumping would stop if their flows drop.
Reclamation	Great Basin Resource Watch	5. Invasive species Per data cited in the listing rule for Tiehm's buckwheat,[57] surveys prior to Ioneer's activities did not detect invasive species within Tiehm's buckwheat's habitat. However, by the time the Center began investigating the site in 2019, Halogeton glomeratus had clearly established in the area disturbed by Ioneer's activities. Today, Halogeton has invaded all subpopulations of Tiehm's buckwheat and appears to be spreading rapidly.[58] Additionally, in the summer of 2021 it became apparent that Salsola tragus (prickly Russian thistle) had become established at the site. The spread of these invasive plant species constitutes a chief ongoing threat to Tiehm's buckwheat.

Issue Category	Organization	Comment[1]
Vegetation	Great Basin Resource Watch	Mineral exploration has already impacted Tiehm's buckwheat habitat by contributing to the spread of Halogeton glomeratus (salt lover), a nonnative, invasive plant species, that now occurs within all subpopulations of the species.[59] Ioneer claims that Halogeton glomeratus is the only invasive species currently known to occur within some of the Tiehm's buckwheat populations. However, on September 11, 2021, Salsola tragus (spiny Russian thistle) was documented within subpopulation 6B and near subpopulation 1.[60] Amaranthus albus (common tumbleweed) was also documented near subpopulations 1 and 2. Non-native plant cover appears to be increasing in areas where exploration activities took place in 2019, especially at the north end of subpopulation 6 near test wells, on the exploration road between subpopulations 4 and 5, and along the access road in between subpopulations 1 and 2.[61] Efforts to restore and mitigate the impacts of exploration activities have not been effective thus far. [57] 87 Fed. Reg. 77368. [58] Fraga, N. Non-native plant species observations impacting Tiehm's buckwheat (Eriogonum tiehmii) in the Rhyolite Ridge Area, Esmeralda County, Nevada. Dated November 30, 2021. [59] 87 Fed. Reg. 77368. [60] Fraga, 2021. [61] See map in Fraga, 2021.
Reclamation	Great Basin Resource Watch	Measures proposed in the Plan to mitigate for the control of non-native, invasive plant species include seeding with an interim seed mix developed in conjunction with BLM. The reclamation seed mix listed in the Rhyolite Ridge Noxious and Invasive Species plan includes two species that are native to Nevada, but not native to the site; Hilaria rigida (Poaceae) and Sphaeralcea coccinea (Malvaceae). These two species are **not** known to occur within the Rhyolite Ridge area, but two closely related species Hilaria jamesii and Sphaeralcea ambigua, co-occur with Tiehm's buckwheat.[62] Care and attention need to be taken when creating proposed species lists and identifying seed sources for seed mixes that will be broadcast within or adjacent to habitat for endemic species. Introduction of inappropriate seed sources could lead to hybridization at the site, or maladapted seed mixes that are ineffective for restoration because they do not result in germination and recruitment at the site. [62] SeiNET 2021. SeiNET Herbarium Data Portal. http://swbiodiversity.org
Vegetation, Threatened and Endangered Species	Great Basin Resource Watch	Invasive species are frequently cited as a threat to biodiversity, ranking second only to habitat loss.[63] The abundance of non-native species is often strongly influenced by factors such as habitat quality and disturbance. The abundance and distribution of invasive species within and surrounding the Tiehm's buckwheat habitat appears to be associated with disturbance from mining exploration activities, including the blading of roads, and placement of mining infrastructure. Prior studies have found that invasive species have a negative impact on rare plant populations and play an important role in population decline.[64] Further disturbance within and surrounding Tiehm's buckwheat habitat would likely increase the abundance, distribution, and diversity of non-native species. A substantial buffer is needed to reduce these impacts, especially considering that weed abatement and management within and surrounding the Tiehm's buckwheat population has not been addressed thus far. For further discussion of the situation with invasive species at Rhyolite Ridge, please see Fraga, N. Non-native plant species observations impacting Tiehm's buckwheat (Eriogonum tiehmii) in the Rhyolite Ridge Area, Esmeralda County, Nevada. Dated November 30, 2021, incorporated into these comments herein. [63] Levine JM, M. Vila, C.M. D'Antonio, J.S. Dukes, K. Grigulis and S. Lavorel S. 2003. Mechanisms underlying the impacts of exotic plant invasions. Proceedings of the Royal Society of London B 270: 775–781. [64] Thomson D. 2005. Measuring the effects of invasive species on the demography of a rare endemic plant. Biological Invasions. 7: 615–624.

Issue Category	Organization	Comment[1]
Geochemical	Great Basin Resource Watch	6. <u>The POO Lacks Sufficient Data to Analyze Risks from the Tailings Dump</u> Tailing drainage is likely to be highly toxic based on the Rhyolite Ridge Baseline Geochemical Characterization Report, Appendix F. The Meteoric Water Mobility Profile table shows some results for the three ore processing waste streams destined for the tailing dump. It is not clear from the application if the test results in Appendix F is the expected chemical profile of the drainage, nor how the chemical profile changes over time. The Mobility test shows extremely high levels of TDS, sulfate, boron, aluminum, magnesium, sodium, fluorine, and low pH for the Sulfate Salt Residue and Spent Ore (tailings). There are also high levels of a number of other metals such as arsenic, thallium, uranium, and chromium to name a few, especially in the Sulfate Salt Residue. Indeed if this is representative of drainage there there will need to be a plan for drainage management. There is also no estimated volumetric draindown profile provided in the application. Appendix J of the application only states, “It is anticipated that the operational draindown from the SOSF [Spent Ore Storage Facility] will be minimal.” (Newfields 2020) This is an inadequate description. The application needs to include a summary from the original source, and there needs to be a description of how the draindown is to be managed. Given the information in the application the toxicity of the tailings drainage could remain very toxic for a long time. Is Ioneer planning to treat this fluid after mining and processing is discontinued?
Financial Assurances, Reclamation	Great Basin Resource Watch	7. <u>Financial Assurances</u> In addition to the reclamation bond BLM should plan to establish a long-term finding mechanism for pollutant management well past the standard 30 year closure period outline by the state of Nevada. The acid leach operation alone is likely to need active management drainage fluids for many decades and potentially over a hundred years.
Air Quality	Great Basin Resource Watch	AIR AND DEPOSITION RELATED ASPECTS Analysis and mitigation plan of other gaseous emissions (such as sulfur oxides, nitrogen oxides, ozone, carbon dioxide, particulate matter, and lead) from any portions of the operation is also necessary. The expected amount of airborne particles as dust from all aspects of the project needs to be determined with concentrations for varying wind factors. Impacts of the “dust” should be evaluated for inhalation health impacts, visibility impairment, and resettling on surface water and vegetation. In the case of resettling on surface water there should be a chemical analysis of the dust to determine whether the dust could have an adverse effect on the chemistry of the water. In general, there needs to be a plan for dust control.

Issue Category	Organization	Comment[1]
Air Quality	Great Basin Resource Watch	1. Dust Dust deposition can impact plant health by limiting reproduction, reducing light availability, CO^2 assimilation, and thus reducing photosynthetic capacity.[65] It can also reduce transpiration leading to higher leaf temperatures and reduced water use efficiency.[66] Ambient dust has also been correlated with plant stress symptoms such as water stress, plant die-back, and smaller leaf size.[67] Dust deposition in the Mojave Desert of Nevada has been shown to cause plant defoliation and shoot death in the common shrub *Larrea tridentata* (creosote bush).[68] Local conditions can exacerbate dust deposition including precipitation, temperature, geologic substrate, and wind speed.[69] One study found plants growing within 400 m of mining disturbance, including unprotected stockpiles, occurred in habitats that were degraded due to dust deposition.[70] Plants further away, but in areas that are exposed to prevailing winds were also negatively impacted by dust deposition. [65] Wijayratne U.C., S.J. Scoles-Sciulla, and L.A. Defalco. 2009. Dust deposition effects on growth and physiology of the endangered *Astragalus jaegerianus* (Fabaceae). Madroño. 56L 81-88. *See also* Padgett, P.E., Dobrowolski, W.M., Arbaugh M.J., Eliason, S.A. 2007. Patterns of carbonate dust deposition: implications for four federally listed endangered plant species. Madroño. 54: 275-285. [66] Sharifi, M.R., A.C. Gibson and P.W. Rundel. 1997. Dust Impacts on Gas Exchange in Mojave Desert Shrubs. Journal of Applied Ecology. 34: 837-846. *See also* USFWS, 2022, Species Status Assessment for Tiehm's buckwheat *(Eriogonum Tiehmii*). [67] Talley, T.S., Holyoak, M., 2006. "The Effects of Dust on the Federally Threatened Valley Elderberry Longhorn Beetle." *Environmental Management* 37(5): 647-658. [68] Beatley, J. C. 1965. Effects of radioactive and non- radioactive dust upon Larrea divaricata Cav., Nevada Test Site. Health Physics 11:1621–1625. [69] Padgett, *et al.*, 2007. [70] *Id.*
Threatened and Endangered Species	Great Basin Resource Watch	The areas surrounding Tiehm's buckwheat habitat are known to be subject to high winds, with wind gusts of 40-50 mph regularly reported from the Tonopah, NV weather station.[71] The Project has the potential to greatly increase dust deposition on Tiehm's buckwheat plants from the construction of new facilities, use of access roads, excavation of the open pit, use of explosives, and the creation of overburden storage areas. The Project would also substantially increase daily road traffic at the site, likely by several orders of magnitude, increasing the potential for dust deposition on plants throughout the lifetime of the Project. [71] Data via wunderground.com.
Air Quality	Great Basin Resource Watch	Dust is a significant concern for Tiehm's buckwheat, particularly given that, in the latest iteration of the mine's plans described above, the proposed open pit would be within 13 feet of the plants. Ambient dust has been shown to negatively affect the ability of plants to set fruit, and also affects the number of seeds per plant and mean seed weight, meaning that dust has widespread effects on plant reproduction.[72] Ambient dust has also been correlated with plant stress symptoms such as water stress, plant die-back, and smaller leaf size.[73] Dust deposition at a different mine site had "a significant effect on photosynthesis and gas exchange," under both high and low dust deposition regimes.[74] Appreciable changes to the species composition of shrubland communities have been associated with significant dust deposition.[75] In short, dust can have effects on plant species and communities. [72] Lewis, M.B., Schupp, E.W., Monaco, T.A., 2017. "Road Dust Correlated with Decreased Reproduction of the Endangered Utah Shrub Hesperidanthus suffrutescens." Western North American Naturalist, 77(4):430-439. [73] T.S. Talley and M. Holyoak, 2006. The Effects of Dust on the Federally Threatened Valley Elderberry Longhorn Beetle, 37(5) Environmental Management 647-658 (2006). [74] P.E. Padgett et al., 2007. Patterns of Carbonate Dust Deposition: Implications for Four Federally Endangered Plant Species 54(4) Madroño 275-285. [75] Farmer, A.M., 1993. "The effects of dust on vegetation – a review." Environmental Pollution 79(1993): 63-75.

Issue Category	Organization	Comment[1]
Plan of Operations	Great Basin Resource Watch	Best management practices identified in the POO's "Buckwheat Protection Plan"[76] include measures that may prove detrimental to Tiehm's buckwheat plants and the surrounding habitat, or have no proven efficacy in reducing dust deposition. These include the use of chemical dust suppressants (e.g. MgCl mixed in water), and the use of seed mixes in disturbed areas. A prior study found that MgCl2 based products can migrate from treated roads into adjacent soils through precipitation.[77] Chloride (Cl–) and magnesium (Mg+2) are essential nutrients that are important for normal plant growth, but an excess of either nutrient could be toxic to plants or change water relations such that the plant cannot easily accumulate water and nutrients. This could have a significant impact on Tiehm's buckwheat and associated vegetation in and around the habitat. Regardless of the mitigation techniques employed, it's clear that there must be a significant distance between the source of dust pollution and Tiehm's buckwheat. The majority of particulate dust was deposited within 1 kilometer of the site producing the dust at a mining operation studied in the San Bernardino Mountains of California.[78] [76] Ioneer 2022, Appendix I. [77] Goodrich, B. A., Koski, R. D., & Jacobi, W. R., 2009. Monitoring Surface Water Chemistry Near Magnesium Chloride Dust Suppressant Treated Roads in Colorado. Journal of Environment Quality, 38(6), 2373. [78] Padgett et al., 2007.
Reclamation	Great Basin Resource Watch	BLM-approved seed mixes have not proven effective in increasing native plant cover and preventing dust deposition. Empirical evidence from the Rhyolite Ridge site reveals that sites disturbed during the exploration phase of the Project have not been effectively "reclaimed" or restored. The exploration road between subpopulations 4 and 5 of Tiehm's buckwheat serves as an example reclamation site that incorporated the use of seed mixes. The seeding activities employed to date have not proven successful, as evidenced by the lack of native cover. The seeding site is now dominated by Halogeton glomeratus, an invasive, exotic species that is cited as a threat to Tiehm's buckwheat. One of the few species that germinated from the seed mix in 2019 was common wheat (Triticum aestivum), an annual exotic species that does not contribute to soil conservation or dust prevention.[79] [79] N. Fraga, personal observation.

Air Quality, Threatened and Endangered Species	Great Basin Resource Watch	2. Air pollutants The proposed Rhyolite Ridge mine would emit numerous pollutants, including annual emissions of 43 tons PM2.5; 24 tons H2SO4; 78 tons SO2; 1 ton H2S; 92 tons NOx; 20 tons CO; and 4 tons VOCs.[80] While there are a number of factors influencing air quality, including hourly as opposed to annual emission rates, it's clear that the emissions from Rhyolite Ridge mine would be significant. These emissions could have a negative effect on Tiehm's buckwheat as described here. The 2018 EPA Integrated Science Assessment ("ISA") for Oxides of Nitrogen, Oxides of Sulfur and Particulate Matter- Ecological Criteria (2018 NOx/SOx/PM ISA) detail the effects of nitrogen and sulfur deposition and how it is related to PM. This 2018 ISA, along with other studies, show PM is a complex mixture of extremely small particles and liquid droplets.[81] These particles can be made up of a number of components including nitrogen and sulfur compounds, resulting in PM being a significant contributor to nitrogen and sulfur deposition.[82] The majority of PM2.5 mass in the United States is made up of nitrogen and sulfur compounds. The 2018 NOx/SOx/PM ISA found causal relationships between nitrogen deposition and the alteration of the physiology and growth of terrestrial organisms and the productivity of terrestrial ecosystems as well as changes in species richness, community composition and biodiversity in terrestrial ecosystems.[83] These findings were similar to the 2009 Integrated Science Assessment for PM, which found, "[e]cological effects of PM include direct effects to metabolic processes of plant foliage; to total metal loading resulting in alteration of soil biogeochemistry and microbiology, plant growth and animal growth and reproduction; and contribution to total organics loading resulting in bioaccumulation and biomagnification across trophic levels."[84] The 2018 NOx/SOx/PM ISA finding is supported by scientific literature which has found air pollution contributes to nitrogen and sulfur deposition, which are causing acidification, nitrogen enrichment, and sulfur induced mercury methylation in sensitive ecosystems throughout the U.S.[85] One study even concluded the current NAAQS are not set at a level which will protect ecosystems from the effects of nitrogen and sulfur deposition in many parts of the United States.[86] The US Fish and Wildlife Service has found that acid deposition and other impacts from NOx and SOx emissions are threats to plants listed under the Endangered Species Act, including for the Zuni fleabane (Erigeron rhizomaxs),[87] the Mancos milkvetch (Astragalus humillimus),[88] and Harperella (Ptilimnium nodosum).[89] Regardless of the location of the open pit relative to the buckwheat populations, the overall emissions, including NO-x and SOx and dust, from the proposed mine will have a negative impact on Tiehm's buckwheat. The 13 foot buffer proposed by Ioneer provides no substantive protections against impacts from dust or emissions and the 500m buffer designated as critical habitat is also insufficient for protection against the negative indirect effects of dust and emissions. The Center and Dr. Fraga proposed an Area of Critical Environmental Concern (ACEC) surrounding the Tiehm's buckwheat habitat (total of 4,015 acres) in 2021.[90] The proposed ACEC Included a one mile protective buffer (1609 meters) which is more likely to be successful to help ameliorate the negative effects caused by dust and pollution, as opposed to the 13 foot buffer proposed by Ioneer or the 500 meter buffer designated as critical habitat. [80] Nevada Division of Environmental Protection, 2021. Rhyolite Ridge Mine Class 2 Air Quality Operating Permit. [81] EPA, Particulate Matter (PM) Basics, available at https://www.epa.gov/pm-pollution/particulate-matter-pm- basics#PM, (last visited June 28, 2020). [82] Id.; EPA, Health and Environmental Effects of Particulate Matter (PM), available at https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm, (last visited June 28, 2020); EPA, Integrated Sciences Assessment for Particulate Matter, (December 2009) at 9-165; EPA, Integrated Science Assessment for Oxides of Nitrogen, Oxides of Sulfur and Particulate Matter Ecological Criteria, 2nd External Review Draft. (June 2018). [83] Id. [84] EPA, Integrated Sciences Assessment for Particulate Matter, (December 2009) at 2-29. [85] Greaver et al. 2012. Ecological effect of nitrogen and sulfur air pollution in the US: what do we know?, The Ecological Society of America, Front Ecol. Environ; 10(7): 365–372, doi: 10.1890/110049 [86] Id.

Issue Category	Organization	Comment[1]
		[87] Recovery Plan for Zuni fleabane (Erigeron rhizomaxs Cronquist) at 1, U.S. Fish and Wildlife Service (1988). [88] Mancos milkvetch (Astragalus humillimus) Recovery Plan at 13, U.S. Fish and Wildlife Service (1989). [89] Harperella (Ptilimnium nodosum) Recovery Plan at executive summary, U.S. Fish and Wildlife Service (1990). [90] Center for Biological Diversity and Fraga, N. 2021a. Rhyolite Ridge Area of Critical Environmental Concern petition.
Native American Concerns	Great Basin Resource Watch	INDIGENOUS CULTURAL VALUES AND TREATY CONCERNS The project area must be surveyed for historical and archeological artifacts, and mitigation plans must be developed for any of these sites. In the American Indian Religious Freedom Act (AIRFA), Congress stated that "[i]t shall be the policy of the United States to protect and preserve for American Indians their inherent freedom to believe, express, and exercise the traditional religions." 42 USC § 1996 (1982). The BLM must analyze the cumulative impact to the ability of Native Americans to fully practice the traditional religions within the study area. The analysis must include both known sacred and spiritual sites as well as traditional food and medicine gathering locations, which are important components of traditional practice. The project is within land outlined in the Treaty of Ruby Valley, between the United States and the Western Shoshone Nation, so mineral rights were reserved and therefore continue to belong to the Western Shoshone Nation. The use of "gradual encroachment" is not a legally valid method of title transfer or extinguishment under existing federal law or recognized standards of human rights. Between February 20 and March 10, 2006 the United Nations Committee for the Elimination of Racial Discrimination, issued a decision of an "Early Warning and Urgent Action Procedure" handed down to the United States of America. The decision pertains to US lands and therefore BLM or Forest Service public lands on which the project may in part be located. The relevant aspect of this decision is that the U.S. is to "freeze any plan to privatize Western Shoshone ancestral lands for transfer to multinational extractive industries and energy developers, and desist from all activities planned and/or conducted on the ancestral lands of Western Shoshone or in relation to their natural resources, which are being carried out without consultation with and despite protests of the Western Shoshone peoples." Thus, the project must seek consultation and permission from the Western Shoshone on their lands.
Law and Regulation	Great Basin Resource Watch	BLM MUST APPLY THE PROPER REGULATORY AUTHORITIES OVER THE PROJECT BLM must not base its review of the Project on the assumption that Ioneer has statutory rights to conduct all of their proposed operations, based on the mere staking of claims under the 1872 Mining Law, 30 U.S.C. §§21-43. This includes the permanent waste rock and tailings dumps, which cover thousands of acres. BLM's position has been wrong as demonstrated by the Ninth Circuit Court of Appeals Ninth Circuit Court of Appeals' Opinion issued on May 12, 2022, Center for Biological Diversity v. U.S. Fish and Wildlife Service, --- F.4th ---, 2022 WL 1495007 (9th Cir, May 12, 2022). The Court of Appeals affirmed the District of Arizona's decision in Center for Biological Diversity v. U.S. Fish and Wildlife Service, 409 F.Supp.3d 738 (D. Ariz. 2019). The case dealt with the federal government's approval of a large open pit copper mine on mostly federal land, known as the "Rosemont Mine." The court upheld the assertion of the plaintiffs that although the Mining Law gives miners some license to initially explore public lands for minerals, it restricts the right of occupancy of mining claims for permanent waste dumps to lands containing the discovery of a "valuable mineral deposit." 30 U.S.C. §§ 22, 26.

Issue Category	Organization	Comment[1]
Law and Regulation	Great Basin Resource Watch	Rights to mine and possess lands containing valuable minerals "under the mining laws of the United States" do not extend to lands that do not contain such valuable minerals: "A claimant may not use the deposit present in one location to lend validity to an adjacent location. See Waskey v. Hammer, 223 U.S. 85, 91 (1912) ('A discovery without the limits of the claim, no matter what its proximity, does not suffice.'); Lombardo Turquoise Milling & Mining Co. v. Hemanes, 430 F.Supp. 429, 443 (D. Nev. 1977)." Center for Biological Diversity v. U.S. Fish and Wildlife Service, ---F.Supp.3d---, 2019 WL3503330, *11 (D. Ariz. 2019). "The statute [1872 Mining Law] grants two rights, (1) the right to explore and purchase all valuable mineral deposits in lands belonging to the United States; and (2) the right to occupation and purchase of the lands in which valuable mineral deposits are found. … [I]t is clear under both the mining law and the regulations that a discovery of valuable mineral is the sine qua non of an entry to initiate vested rights against the United States." Davis v. Nelson, 329 F.2d 840, 844-45 (9th Cir. 1964). Thus, without the discovery of a valuable mineral deposit, the claimant does not have a statutory right to occupation of those lands. Such statutory rights can only accrue to the company if these claims satisfy the requirements of the 1872 Mining Law for possessory rights. "A mining claimant has the right to possession of a claim only if he has made a mineral discovery on the claim." Lara v. Secretary of the Interior, 820 F.2d 1535, 1537 (9th Cir. 1987). See also Davis v. Nelson, 329 F.2d at 845 (9th Cir. 1964)("right to occupation and purchase of the lands" is limited to only those lands "in which valuable mineral deposits are found."). The Mining Law limits the permanent use and development of mining claims on public lands to only those lands that contain a "valuable mineral deposit." "All valuable mineral deposits in lands belonging to the United States … shall be free and open to exploration and purchase, and the lands in which they are found to occupation and purchase." 30 U.S.C. § 22. Only upon the discovery of a "valuable mineral deposit," within the boundaries of each mining claim does the claimant have rights to permanently use and occupy those public lands. "Thus, although a claimant may explore for mineral deposits before perfecting a mining claim, without a discovery, the claimant has no right to the property against the United States or an intervenor. 30 U.S.C. § 23 (mining claim perfected when there is a 'discovery of the vein or lode'); see also Cole v. Ralph, 252 U.S. 286, 295–96 (1920)." Freeman v. Dept. of Interior, 37 F.Supp.3d 313, 319 (D.D.C. 2014). "If there is no valuable mineral deposit beneath the purported unpatented mining claims, the unpatented mining claims are completely invalid under the 1872 Mining Law, and no property rights attach to those invalid unpatented mining claims." Center for Biological Diversity v. U.S. Fish and Wildlife Service, ---F.Supp.3d ---, 2019 WL3503330, *5 (D. Ariz. 2019)(emphasis in original). To satisfy the discovery requirement necessary for a valid mining claim, "the discovered deposits must be of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success, in developing a valuable mine." U.S. v. Coleman, 390 U.S. 599, 602 (1968). This economic test for claim validity necessarily includes the consideration of all costs necessary to develop, process, transport, and market the mineral, including costs to protect public land and the environment. "[I]t must be shown that the mineral can be extracted, removed and marketed at a profit." Id. There is no evidence in the record that the mining claims covering the public lands proposed for the tailings, waste rock dumps, and other ancillary operations are valid under the Mining Law. BLM must inquire into whether the mining claims at the Project site are valid as a prerequisite for BLM to base its review/approval on any purported "rights" under the Mining Law.

Issue Category	Organization	Comment[1]
Law and Regulation	Great Basin Resource Watch	Based on the proposed P)O, there is no evidence that the claims to be used for waste rock dumps, tailings waste facilities, and other non-extraction operations away from the mine pit are valid under the Mining Law. Based on the available record, these lands contain common varieties of rock that are not considered locatable minerals under federal mining law. Under the Surface Resources and Multiple Use Act of 1955, "common varieties" of minerals are not locatable (i.e., cannot be legitimately claimed) under the Mining Law. 30 U.S.C. § 611. BLM must determine whether the lands to be used for the waste rock dumps, the tailings facilities, and other non-extractive operations contain locatable minerals or common variety minerals. Unless the company provides the necessary credible evidentiary support for the assertion of occupancy rights under the Mining Law on each claim, BLM must apply its special use permitting regulations. 43 C.F.R. Part 2900/2920 (Leases, Permits, Easements). Here, because the waste rock dumps, tailings facilities and other Project activities are not governed under any rights associated with the 1872 Mining Law as noted above, the agency must regulate all of these activities under Part 2900/2920, instead of Part 3809. FLPMA requires BLM to "by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the [public] lands." 43 U.S.C. § 1732(b). In addition, FLPMA mandates that: "the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." 43 U.S.C. § 1701(a)(8).
Law and Regulation	Great Basin Resource Watch	FLPMA does, however, contain some limits on DOI/BLM authority over operations authorized by the 1872 Mining Law: Except as provided in section 314, section 603, and subsection (f) of section 601 of this Act and in the last sentence of this paragraph, no provision of this section or any other section of this Act shall in any way amend the Mining Law of 1872 or **impair the rights of any locators or claims under that Act**, including, but not limited to, rights of ingress and egress. In managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands. 43 U.S.C. § 1732(b)(emphasis added). Under FLPMA, DOI/BLM has full discretion and authority over operations proposed on public lands, including hardrock mining operations such as the Project, to "protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." 43 U.S.C. § 1701(a)(8). However, such discretion/authority is limited to only "preventing unnecessary or undue degradation" of public resources if the application of that discretion/authority "impair[s] the rights of any locators or claims under that Act [the 1872 Mining Law]." 43 U.S.C. § 1732(b). Here, as detailed above, neither the company nor BLM have attempted to show that the company has met the legal prerequisites of the Mining Law to have "rights" to the use and possession of its mining claims (e.g., no evidence that the claims covering all of the waste/tailings facilities contain the requisite valuable deposit of a locatable mineral). As such, there are no "rights" that can be "impaired" by BLM's full discretionary authority over those aspects of the Project that do not have the necessary factual basis to support such rights.

Issue Category	Organization	Comment[1]
Law and Regulation	Great Basin Resource Watch	BLM's discretionary authority is implemented in part via BLM's special use FLPMA regulations, which apply whenever activities are not "authorized" by other laws. "Any use not specifically authorized under other laws or regulations and not specifically forbidden by law may be authorized under this part." 43 CFR § 2920.1-1. Thus, because the waste rock, tailings dump, and other ancillary facilities are not "authorized by the mining laws," absent verified evidence that these uses satisfy the Mining Law's prerequisite requirements, they are governed by Part 2900/2920, not Part 3809. The Part 2920 FLPMA regulations require that: (b) Each land use authorization shall contain terms and conditions which shall: (1) Carry out the purposes of applicable law and regulations issued thereunder; (2) Minimize damage to scenic, cultural and aesthetic values, fish and wildlife habitat and otherwise protect the environment; (3) Require compliance with air and water quality standards established pursuant to applicable Federal or State law; and (4) Require compliance with State standards for public health and safety, environmental protection, siting, construction, operation and maintenance of, or for, such use if those standards are more stringent than applicable Federal standards. (c) Land use authorizations shall also contain such other terms and conditions as the authorized officer considers necessary to: (1) Protect Federal property and economic interests; (2) Manage efficiently the public lands which are subject to the use or adjacent to or occupied by such use; (3) Protect lives and property; (4) Protect the interests of individuals living in the general area of the use who rely on the fish, wildlife and other biotic resources of the area for subsistence purposes; (5) Require the use to be located in an area which shall cause least damage to the environment, taking into consideration feasibility and other relevant factors; and (6) Otherwise protect the public interest. 43 C.F.R. § 2920.7(b).

Issue Category	Organization	Comment[1]
Law and Regulation	Great Basin Resource Watch	These FLPMA requirements – to "protect the public interest," to "Protect federal property," and to "minimize damage to scenic, cultural and aesthetic values, fish and wildlife habitat and otherwise protect the environment," are not found in the basic command to "prevent unnecessary or undue degradation" that applies to "operations authorized by the mining laws." 43 C.F.R. § 3809.1(a). Accordingly, BLM must fully consider the alternative of regulating (and/or potentially denying) these facilities under the Part 2920 regulations including any Environmentally Preferred Alternative and the No-Action Alternative. Similarly, BLM can only approve access and other public land uses such as pipelines, transmission lines, etc, under FLPMA's Title V Right-of-Way (ROW) provisions. Under FLPMA Title V, Section 504, the agency may grant a Right-of-Way (ROW) only if it "(4) will do no unnecessary damage to the environment." 43 U.S.C. § 1764(a). Rights of way "shall be granted, issued or renewed … consistent with … any other applicable laws." Id. § 1764(c). A right-of-way that "may have significant impact on the environment" requires submission of a plan of construction, operation, and rehabilitation of the right-of-way. Id. § 1764(d). A Title V SUP/ROW "shall contain terms and conditions which will …(ii) minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment." Id. § 1765(a). In addition, the ROW can only be issued if activities resulting from the ROW: (i) protect Federal property and economic interests; (ii) manage efficiently the lands which are subject to the right-of-way or adjacent thereto and protect the other lawful users of the lands adjacent to or traversed by such right-of-way; (iii) protect lives and property; (iv) protect the interests of individuals living in the general area traversed by the right-of-way who rely on the fish, wildlife, and other biotic resources of the area for subsistence purposes; (v) require location of the right-of-way along a route that will cause least damage to the environment, taking into consideration feasibility and other relevant factors; and (vi) otherwise protect the public interest in the lands traversed by the right-of-way or adjacent thereto. FLPMA, § 1765(b).

Issue Category	Organization	Comment[1]
Law and Regulation	Great Basin Resource Watch	At least three important potential substantive requirements flow from the FLPMA's ROW provisions. First, BLM has a mandatory duty under Section 505(a) to impose conditions that "will minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment." Id. §1765(a). The terms of this section do not limit "damage" specifically to the land within the ROW corridor. Rather, the repeated use of the expansive term "the environment" indicates that the overall effects of the ROW on cultural/historical, wildlife, environmental, scenic and aesthetic values must be evaluated and these resources protected. In addition, the obligation to impose terms and conditions that "protect Federal property and economic interests" in Section 505(b) requires that the USFS must impose conditions that protect not only the land crossed by the right-of-way, but **all** federal land affected by the approval of the ROW. This includes the federal waters and water rights that will be eliminated or significantly reduced by the project. The requirements in Section 505(b) mandate a USFS determination as to what conditions are "necessary" to protect federal property and economic interests, as well as "otherwise **protect[ing] the public interest in the lands traversed by the right-of-way or adjacent thereto."** (emphasis added). This means that the agency can only approve the ROW if it "protects the public interest in lands" not only upon which the road would traverse, but also lands and resources adjacent to and associated with the ROW. As noted herein, USFS would be unable to make a legitimate finding that industrial use of the lands served by the ROW, given the massive adverse impacts from the Mine, would "protect the public interest." Third, is the requirement that the right-of-way grants "do no unnecessary damage to the environment" and be "consistent with … any other applicable laws," id. §§ 1764(a)-(c). This means that a grant of a ROW supporting other activities must satisfy all applicable laws, regulations and policies, including FLPMA, the Endangered Species Act, Organic Act, NFMA, NHPA, Clean Water and Air Acts, all state and local laws, etc. The federal courts have repeatedly held that the federal land agency not only has the authority to consider the adverse impacts on lands and waters outside the immediate ROW corridor, it has an obligation to protect these resources under FLPMA. In County of Okanogan v. National Marine Fisheries Service, 347 F.3d 1081 (9th Cir. 2003), the court affirmed the agency's imposition of mandatory minimum stream flows as a condition of granting a ROW for a water pipeline across public land. This was true even when the condition/requirement restricted or denied vested property rights (in that case, water rights). Id. at 1085-86.
Law and Regulation	Great Basin Resource Watch	Similar to the County of Okanogan and Colorado Trout Unlimited federal court decisions noted above, the Interior Department has held that the fact that a ROW applicant has a property right that may be adversely affected by the denial of the ROW does not override the agency's duties to protect the "public interest." In Kenneth Knight, 129 IBLA 182, 185 (1994), the BLM's denial of the ROW was affirmed due not only to the direct impact of the water pipeline, but on the adverse effects of the removal of the water in the first place: [T]he granting of the right-of-way and concomitant reduction of that resource, would, in all likelihood, adversely affect public land values, including grazing, wildlife, and riparian vegetation and wildlife habitat. The record is clear that, while construction of the improvements associated with the proposed right-of-way would have minimal immediate physical impact on the public lands, the effect of removal of water from those lands would be environmental degradation. Prevention of that degradation, by itself, justified BLM's rejection of the application. 1994 WL 481924 at *3. The Interior Department has ruled that pipelines and associated infrastructure, including those across public land related to a mining operation, are not covered by statutory rights under the Mining Law. "[A] right-of-way must be obtained prior to transportation of water across Federal lands for mining." Far West Exploration, Inc., 100 IBLA 306, 308 n. 4 (1988) citing Desert Survivors, 96 IBLA 193 (1987). See also Alanco Environmental Resources Corp., 145 IBLA 289, 297 (1998) ("construction of a road, was subject not only to authorization under 43 C.F.R. Subpart 3809, but also to issuance of a right-of-way under 43 C.F.R. Part 2800."); Wayne D. Klump, 130 IBLA 98, 100 (1995) ("Regardless of his right of access across the public lands to his mining claims and of his prior water rights, use of the public lands must be in compliance with the requirements of the relevant statutes and regulations [FLPMA Title V and ROW regulations]..").

Issue Category	Organization	Comment[1]
Law and Regulation	Great Basin Resource Watch	The Interior Board of Land Appeals has expressly rejected the argument that rights under the mining laws apply to pipelines and roads associated with water delivery: Clearly, FLPMA repealed or amended previous acts and Title V now requires that BLM approve a right-of-way application prior to the transportation of water across public land for mining purposes. See 43 U.S.C. § 1761 (1982). As was the case prior to passage of Title V of FLPMA, however, approval of such an application remains a discretionary matter and the Secretary has broad discretion regarding the amount of information he may require from an applicant for a right-of-way grant prior to accepting the application for consideration. Bumble Bee Seafoods, Inc., 65 IBLA 391 (1982). A decision approving a right-of-way application must be made upon a reasoned analysis of the factors involved in the right-of-way, with due regard for the public interest. See East Canyon Irrigation Co., 47 IBLA 155 (1980). BLM apparently contends that a mining claimant does not need a right-of-way to convey water from land outside the claim for use on the claim. It asserts that such use is encompassed in the implied rights of access which a mining claimant possesses under the mining laws. Such an assertion cannot be credited. The implied right of access to mining claims never embraced the right to convey water from outside the claim for use on the claim. This latter right emanated from an express statutory grant in the 1866 mining act. See 30 U.S.C. § 51 (1970) and 43 U.S.C. § 661 (1970). In enacting FLPMA, Congress repealed the 1866 grant of a right-of-way for the construction of ditches and canals (see § 706(a) of FLPMA, 90 Stat. 2793) and provided, in section 501(a)(1), 43 U.S.C. § 1761(a)(1), for the grant of a right-of- way for the conveyance of water under new procedures. In effect, Congress substituted one statutory procedure for another. **There is simply no authority for the assertion that mining claimants need not obtain a right-of-way under Title V for conveyance of water from lands outside the claim onto the claim.**
Law and Regulation	Great Basin Resource Watch	Desert Survivors, 96 IBLA 193, 196 (1987)(emphasis added). See also Far West Exploration, 100 IBLA 306, 309, n. 4 (1988)("a right-of-way must be obtained prior to transportation of water across Federal lands for mining."). The same analysis applies to water, tailings, and power either delivered to, or conveyed from, the project sites. The leading treatise on federal natural resources law confirms this rule: "Rights-of-way must be explicitly applied for and granted; approvals of mining plans or other operational plans do not implicitly confer a right-of-way." Coggins and Glicksman, PUBLIC NATURAL RESOURCES LAW, §15.21. Lastly, BLM must comply with the financial requirements of the FLPMA regarding ROW applications and approvals, as well as for Special Use Permits. At a minimum, BLM must obtain "Fair Market Value" (FMV) for the use of federal land and resources. FLPMA requires that "the United States receive fair market value of the use of the public lands and their resources." 43 U.S.C. §1701(a)(9). "The holder of a right-of-way shall pay in advance the fair market value thereof, as determined by the Secretary granting, issuing, or renewing such right-of-way." 43 U.S.C. §1764(g). In addition, Nevada Lithium must fully "reimburse the United States for all reasonable administrative and other costs incurred in processing an application for such right-of-way and in inspection and monitoring of such construction, operation, and termination of the facility pursuant to such right-of- way." Id.
Law and Regulation	Great Basin Resource Watch	THE POO DOES NOT PREVENT UNNECESSARY AND UNDUE DEGRADATION (UUD). BLM regulations require that an operators' "plan of operations must demonstrate that the proposed operations would not result in unnecessary or undue degradation of public lands."[91] Yet, the POO demonstrates that it would result in UUD due to the substantial and significant negative impacts it would have on the highly imperiled Tiehm's buckwheat. As discussed in detail below, the POO will not pass Section 7 muster nor does it comply with the Tonopah Resource Management Plan and Sensitive Species policies. [91] 43 C.F.R. § 3809.401(a).

Issue Category	Organization	Comment[1]
Law and Regulation, Threatened and Endangered Species	Great Basin Resource Watch	1. The Mine Plan of Operations Must Comply With the Endangered Species Act and Prevent UUD The Plan of Operations (POO) presented to the public for this scoping period was submitted by Ioneer to BLM in July 2022. This POO is a significant reconfiguration of the mine plan from previous iterations, most notably changing the footprint of the mine and waste rock dump to allegedly "avoid direct effects" to Tiehm's buckwheat.[92] Avoiding "direct effects" is inaccurate nomenclature – avoiding direct, immediate removal of individual buckwheats would be more accurate. In reality, the July 2022 POO proposes a number of "Tiehm's Buckwheat Exclusion Areas" surrounding each subpopulation (with subpopulations 4, 6a-b, and 7 grouped together).[93] These exclusion areas would be fenced and the buffer between the fence and the buckwheat subpopulations would be between 13 and 127 feet.[94] Per the maps provided, mining activities, including an open pit quarry, a waste rock dump, haul roads, work yards, drainage ditches, and explosives storage, would occur directly adjacent to the exclusion fences. On December 16, 2022, the U.S. Fish and Wildlife Service listed Tiehm's buckwheat as an endangered species under the Endangered Species Act, and designated 910 acres of critical habitat to protect the buckwheat.[95] The critical habitat protects all of the buckwheat subpopulations, as well as a 500 meter buffer surrounding each subpopulation, which contains components of the physical and biological features necessary for the species' conservation, including "the pollinator community and its requisite native vegetation assembly."[96] The Service "used pollinator studies on pollinator efficiency and flight and foraging distances of bees, wasps, beetles, and flies, and concluded the 1,640-ft (500 meter) pollination area was sufficient to support the maximum foraging distance of pollinators and insect visitors.[97] The ESA defines "critical habitat" as the area that contains the physical or biological features essential to the "conservation" of the species and which may require special protection or management considerations.[98] The ESA lays out a specific process for the designation and revision of critical habitat.[99] Any designation of critical habitat must be based on the best scientific data available.[100] Section 7(a)(2) of the ESA requires each federal agency, in consultation with FWS, to ensure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any threatened or endangered species, or result in the destruction or adverse modification of the critical habitat of such species.[101] "Destruction or adverse modification" of critical habitat means "a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species."[102] [92] Bureau of Land Management. 2022a. Rhyolite Ridge Lithium-Boron Project Overview for Public Scoping, p. 9. [93] Ioneer. 2022. Mine Plan of Operations, Rhyolite Ridge Lithium-Boron Project, Rev. 6. Appendix I, p. 13. [94] BLM 2022a, p. 9. [95] 87 Fed. Reg. 77368. [96] 87 Fed. Reg. 77392. [97] 87 Fed. Reg. 77384. [98] 16 U.S.C. § 1532(5)(A). [99] Id., § 1533(a) & (b). [100] Id., § 1533(b)(2). [101] Id., § 1536(a)(2). [102] 50 C.F.R. § 402.02.

Issue Category	Organization	Comment[1]
Law and Regulation, Threatened and Endangered Species	Great Basin Resource Watch	The Service weighed in on the July 2022 POO proposal in its final listing determination for Tiehm's buckwheat: The 2022 revised PoO includes modifications such as relocating the quarry to avoid individual Tiehm's buckwheat plants and implementing 13-127 ft (4-39 m) buffers with fencing around each subpopulation (Ioneer 2022b, p. 14 and Appendix J). An explosives storage area is proposed adjacent to subpopulation 1 (Ioneer 2022b, Figure 4). To the east, subpopulations 3, 4, 5, 6, and 7 would be concerningly close to a 960-ft (293 m) deep open- pit quarry and when mining is complete, a terminal quarry lake (Ioneer 2022b, p. 24, 74). In addition, over-burden storage facilities are proposed on the west side of subpopulations 3, 4, 5, 6, and 7 (Ioneer 2022b, p. 25). The combination of the quarry development and over- burden storage facilities are projected to disturb and remove up to 38 percent of critical habitat for this species, impacting pollinator populations, altering hydrology, removing soil, and risking subsidence.[103] Plainly, the Service has grave concerns about the mine as proposed in the July 2022 POO. Indeed the very existence of the mine, as laid out in the most current POO, is a chief contributing factor for the listing of Tiehm's buckwheat: We have considered and incorporated the 2022 revised PoO, which includes indirect impacts to individual plants and proposed loss of 38 percent of critical habitat, into our analysis and we find that the threat of mining continues to be of such a magnitude that, taken in combination with other threats described in this rule, Tiehm's buckwheat is in danger of extinction throughout all of its range.[104] It is evident that the July 2022 POO will not pass muster with the Service during Section 7 consultation – the loss of 38% of the critical habitat would obviously constitute adverse modification of the habitat.[105] Put differently, implementing the POO without significant and fundamental modifications would violate the ESA.[106] And because it would violate the ESA, approving the POO without substantial and fundamental modifications would also constitute unnecessary and undue degradation (UUD) and violate FLPMA.[107] BLM's regulations make clear that in order to prevent UUD from mining operations, an operator must comply with all applicable federal laws, including the ESA.[108] BLM must deny approval of a POO that would cause UUD.[109] [103] 87 Fed. Reg. 77375. [104] 87 Fed. Reg. 77386. [105] Under current FWS regulations, adverse modification is defined as "a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species." 50 C.F.R. § 402.02. By any objective measure, the loss of 38% of the habitat area deemed by the Service to be "essential" to the survival and recovery of the species would meet this definition. [106] 16 U.S.C. § 1536(a)(2); Wild Fish Conservancy v. Salazar, 628 F.3d 513, 532 (9th Cir. 2010) (holding that the ultimate responsibility under the ESA to ensure against adverse modification and jeopardy lies with the "action" agency). [107] See 43 U.S.C. § 1732(b) ("In managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands."). [108] 43 C.F.R. §§ 3809.415, 3809.420; Mineral Policy Ctr. v. Norton, 292 F. Supp. 2d 30, 44 (D.D.C. 2003) ("Specifically, Interior argues that it will protect the public lands from any UUD by exercising case-by-case discretion to protect the environment through the process of: . . . linking performance standards to those set forth in existing laws and regulations. These existing laws and regulations include: the Endangered Species Act, 16 U.S.C. §§ 1531-1534 . . ."). [109] 43 C.F.R. § 3809.2-1(b); Nez Perce Tribal Executive Committee, 120 IBLA 34, 36 (1991); see also Mineral Policy Ctr., 292 F.Supp at 42 ("FLPMA, by its plain terms, vests the Secretary of the Interior with the authority-- and indeed the obligation--to disapprove of an otherwise permissible mining operation because the operation, though necessary for mining, would unduly harm or degrade the public land.").

Issue Category	Organization	Comment[1]
Law and Regulation, Land Use, Threatened and Endangered Species	Great Basin Resource Watch	2. The POO Violates the Tonopah Resource Management Plan and Sensitive Species Policies. The Tonopah Resource Management Plan (RMP) also requires BLM to "[p]rotect, restore enhance, or expand habitat for threatened, endangered, or Nevada BLM Sensitive Species."[111] The RMP further requires that "[h]abitat for all . . . Nevada BLM Sensitive Species (plant and animal) will be managed to maintain or increase current populations of these species."[112] The POO is not consistent with protecting, restoring or expanding Tiehm's buckwheat habitat nor increasing the population size. As noted above, the proposed operation's footprint surrounds Tiehm's buckwheat and occupies its critical habitat, isolating each subpopulation with massive industrial operations. The operations proposed in the POO are not consistent with maintaining, much less increasing current populations of the species given "mineral exploration and development" is a "primary" threat to the species.[113] Moreover, mining exploration operations that were substantially smaller, yet still incredibly impactful, have had serious impacts on Tiehm's buckwheat in a way that even those operations were not consistent with these requirements. [111] United States Dep't of Interior, BLM, Approved Tonopah Resource Mgmt. Plan and Record of Decision, 1, 9 (1997). [112] Id. at 9 (emphasis added). [113] 87 Fed. Reg. at 77378.
Law and Regulation, Threatened and Endangered Species, Vegetation	Great Basin Resource Watch	In the Final Listing Rule, the Service identified one of the "primary threats to the species to include . . . nonnative invasive plant species" because they can negatively affect Tiehm's buckwheat through "competition, displacement, and degradation of the quality and composition of its habitat."[114] Exploration operations have led to the invasive weed saltlover (Halogeton glomeratus) invading all, if not nearly all, previous drill sites and disturbance areas at Rhyolite Ridge. As also discussed further below, on September 11, 2021, Salsola tragus (spiny Russian thistle) was documented within subpopulation 6B and near subpopulation 1.[115] Amaranthus albus (common tumbleweed) was also documented near subpopulations 1 and 2. Non-native plant cover appears to be increasing in areas where exploration activities took place in 2019, especially at the north end of subpopulation 6 near test wells, on the exploration road between subpopulations 4 and 5, and along the access road in between subpopulations 1 and 2.[116] Efforts to restore and mitigate these and other impacts of exploration activities have not been effective to date. Accordingly, it is expected that non-native invasive plant species will continue to invade disturbance, including the areas that would be affected by the POO and areas that were recently affected by Ioneer's unauthorized use and occupancy within the species' critical habitat.[117] Notably, although BLM and the Service often proclaim that best management practices can help reduce the likelihood of nonnative, invasive plant species being introduced and spread, alleged best management practices for these very concerns were applied to the exploration activities,[118] and yet, an unacceptable spread of this invasive species has occurred across the disturbed areas. Accordingly, all areas that would be disturbed by the POO must be expected to result in the very same and unacceptable impacts to this highly imperiled species. Best management practices are not sufficient to prevent these impacts that are inconsistent with BLM's RMP and Sensitive Species policy, thus would result in UUD. [114] Id. [115] Fraga, N. 2021. Non-native plant species observations impacting Tiehm's buckwheat (Eriogonum tiehmii) in the Rhyolite Ridge Area, Esmeralda County, Nevada. Dated November 30, 2021. [116] See map in Fraga, 2021. [117] 87 Fed. Reg. at 77376 (since 2010 "saltlover (Halogeton glomeratus) has since become established to some degree and is part of the associated plant community in all subpopulations of Tiehm's buckwheat."); email from Ms. Sarah Kulpa to Brandon Crosby et al., Rhyolite Ridge 2920 (Oct. 18, 2022). [118] See e.g. Rhyolite Ridge Exploration Project, Notice NVN-097202, 5 (May 23, 2019) (stating reclamation would be completed to standards described in 43 C.F.R. § 4809.420). See also South Infill Exploration Project, Notice NVN-097262, 5 (same).

Issue Category	Organization	Comment[1]
Law and Regulation, Land Use	Great Basin Resource Watch	BLM MUST COMPLY WITH FLPMA, AND THE EIS MUST NOT ASSUME THAT BLM LACKS DISCRETION TO APPROVE THE PROPOSED ACTION. BLM's NEPA analysis must also be informed by the agency's substantive obligations under FLPMA. In enacting FLPMA, Congress declared that: [T]he public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values, that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use.[119] FLPMA requires that BLM "manage the public lands under principles of multiple use and sustained yield,"[120] and encourages the "harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment."[121] Mining operations on public lands are subject to BLM's obligation under FLPMA to "prevent unnecessary or undue degradation of the lands."[122] Under BLM regulations, failure to comply with applicable environmental protection statutes and regulations, or the performance standards located at 43 C.F.R. § 3809.420 automatically constitutes unnecessary or undue degradation.[123] If mining claims cannot be utilized without violating FLPMA's strict environmental requirements, then they cannot be developed. In addition, where there is a likelihood that a mining operation could not comply with environmental regulations in a cost-effective manner, this can call into question the validity of the claim itself.[124] "FLPMA, by its plain terms, vests the Secretary of the Interior with the authority—and indeed the obligation—to disapprove of an otherwise permissible mining operation because the operation, though necessary for mining, would unduly harm or degrade the public land."[125] FLPMA also requires that all resource management decisions "conform with the approved [land use] plan."[126] If a proposed action is not consistent with the land use plan, BLM must reject/disapprove the proposed action or amend the plan.[127] Also, BLM must apply the FLPMA Title V Right-of-Way (ROW) provisions, which govern the review and approval of the water pipeline and energy transmission lines. This is because there are no "rights" under the Mining Law that govern the review and approval of pipelines and transmission lines. Under the FLPMA ROW provisions, BLM cannot approve the project unless it is in the public interest and complies with detailed environmental protection provisions.[128] [119] 43 U.S.C. § 1701(a)(8). [120] 43 U.S.C. § 1732(a). [121] Id. § 1702(c). [122] 43 U.S.C. 1732(b). [123] 43 C.F.R. § 3809.415(a). [124] Clouser v. Espy, 42 F.3d 1522 (9th Cir. 1994); United States v. Kosanke Sand Corp., 12 IBLA 282, 546-547 (1973); United States v. Pittsburgh Pacific Co., 84 Interior Dec. 282, 290 (1977), aff'd sub nom. South Dakota v. Andrus, 614 F.2d 1190 (8th Cir. 1980). [125] Mineral Policy Ctr. v. Norton, 292 F.Supp.2d 30, 42 (D.D.C. 2003). [126] 43 U.S.C. § 1712; 43 C.F.R. § 1610.5-3(a). See also Norton v. S. Utah Wilderness Alliance, 542 U.S. 55, 69 (2004); Western Watersheds Project v. Bennett, 392 F.Supp.2d 1217, 1227 (D. Idaho 2005). [127] 43 C.F.R. §§ 1610.5-3, 1610.5-5. [128] See 43 U.S.C. Sec. 1761-1771, 43 C.F.R. Part 2920.

Issue Category	Organization	Comment[1]
NEPA Analysis, Law and Regulation	Great Basin Resource Watch	THE EIS MUST COMPLY WITH NEPA 1. Scoping Based on the Current POO Violates NEPA Because it Does Not Ensure Informed Agency Decision Making and Meaningful Public Participation. The July 2022 POO is clearly not going to be the mine's plan moving forward. Given that this was already a known fact as of December 20, 2022, when this scoping period began, it raises substantial questions as to the legitimacy of this NEPA proceeding. By proceeding with scoping on the basis of a POO that is obviously unlawful and cannot be approved, BLM is violating the fundamental purpose of NEPA, which is to "ensure that federal agencies are informed of environmental consequences before making decisions and that the information is available to the public."[129] NEPA requires federal agencies to "take a 'hard look' at the environmental consequences of their actions, early enough so that it can serve as an important contribution to the decisionmaking process."[130] Moreover, because this POO cannot be approved and thus a different POO is needed, the requirements of 43 C.F.R. § 3809.401(b) that set forth specific requirements for the contents of a POO have not been met. Indeed, these requirements cannot be met as this information is outstanding. The regulations require POOs to contain specific information about the proposed operations, including among other things detailed description of operations, reclamation plan, monitoring plan, interim management plan.[131] This includes maps showing (among other things) the location of all mining and drilling activities, processing facilities, waste rock and tailings disposal, support facilities and access routes.[132] Here, we know that the location of multiple activities and facilities will have to change to comply with the UUD mandate and other federal environmental laws. Because any project eventually approved by BLM will differ significantly from the current POO, it makes little sense to identify issues for analysis and areas of significant impact based on that document. Assuming the project is changed to comply with the ESA and FLPMA, any input received at this stage will be of extremely limited utility in assessing the final proposed plan for development. Scoping at this stage, before the POO has been changed to accommodate the recent endangered species listing, fails to provide the public with relevant information or ensure that the public plays a meaningful role in the decisionmaking process, as NEPA requires.[133] The public should be able to provide scoping comments on a mine plan which is, in the best faith of BLM and the project proponent, their actual plan to move forward with the mine. [129] Los Padres Forestwatch v. United States Forest Serv., 776 F. Supp. 2d 1042, 1050 (N.D. Cal. 2011). [130] Sierra Club v. Bosworth, 510 F.3d 1016, 1026 (9th Cir. Cal. 2007). [131] Id. at § 3809.401(b) [132] 43 C.F.R. 3809.401(b)(2). [133] See N. Plains Res. Council, Inc. v. Surface Transp. Bd., 668 F.3d 1067, 1085 (9th Cir. 2011); 40 C.F.R. § 1508.1(g).

Issue Category	Organization	Comment[1]
NEPA Analysis	Great Basin Resource Watch	2. The EIS Must Analyze All Direct, Indirect, and Cumulative Impacts of the Proposed Mining Operation NEPA requires BLM to consider all effects of a proposed action, including direct, indirect, and cumulative effects. "Effects" is generally defined to include "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial."[134] Direct effects "are caused by the action and occur at the same time and place."[135] Indirect effects "are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable."[136] "Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."[137] Cumulative effects are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions."[138] "Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time."[139] [134] Id. [135] 40 C.F.R § 1508.1(g) (effective May 20, 2022). [136] Id. [137] Id. [138] Id. [139] Id.

Issue Category	Organization	Comment[1]
NEPA Analysis	Great Basin Resource Watch	Recent changes in 2022 to the Council on Environmental Quality's (CEQ) NEPA implementing regulations confirm that NEPA requires a robust discussion of indirect and cumulative impacts.[140] The 2022 CEQ rule also eliminates restrictions (imposed by the prior 2020 rule) on consideration of temporally or geographically removed environmental effects, "but for" causal relationships, and "effects that the agency has no ability to prevent due to its limited statutory authority or would occur regardless of the proposed action." CEQ explained, "These qualifications may unduly limit agency discretion and stating them as categorical rules that limit effects analyses is in tension with NEPA's directives to produce a detailed statement on the 'environmental impact of [a] proposed action,' 'any adverse environmental effects which cannot be avoided,' and 'the relationship between local short- term uses of man's environment and the maintenance and enhancement of long-term productivity.'"[141] In restoring the regulatory requirement to consider cumulative impacts, CEQ has reaffirmed the importance of evaluating cumulative impacts, stating: [C]onsideration of reasonably foreseeable cumulative effects allows agencies and the public to understand the full scope of potential impacts from a proposed action, including how the incremental impacts of a proposed action contribute to cumulative environmental problems such as air pollution, water pollution, climate change, environmental injustice, and biodiversity loss. Science confirms that cumulative environmental harms, including repeated or frequent exposure to toxic air or water pollution, threaten human and environmental health and pose undue burdens on historically marginalized communities. CEQ does not consider such harms to be inconsequential or irrelevant, but rather critical to sound agency decision making.[142] CEQ further acknowledged that, absent any express regulatory mandate, the text of NEPA itself requires agencies to fully consider cumulative effects: Even before CEQ issued regulations defining "effects" to include cumulative effects, the U.S. Supreme Court had interpreted NEPA to require consideration of "cumulative or synergistic environmental impact." Kleppe v. Sierra Club, 427 U.S. 390, 410 (1976). Although this case focuses on programmatic review, the Court recognized the importance of considering the collective environmental effects of agency actions to inform the decision- making process. Id. ("Only through comprehensive consideration of pending proposals can the agency evaluate different courses of action.").[143] [140] See 87 Fed. Reg. at 23,466 (April 20, 2022) (explaining that "[a]gencies should treat cumulative effects under the final rule in the same fashion as they treated cumulative impacts under the 1978 regulations."). [141] 87 Fed. Reg. at 23,466 (quoting 42 U.S.C.§ 4332(2)(C)). [142] 87 Fed. Reg. at 23,467. [143] 87 Fed. Reg at 23,465.

Issue Category	Organization	Comment[1]
NEPA Analysis	Great Basin Resource Watch	And CEQ clarified in the 2022 rule that it "considers the disclosure of all reasonably foreseeable direct, indirect, and cumulative effects to be critical to the informed decision-making process required by NEPA, see, e.g., 42 U.S.C. 4332, such that the benefits of any such disclosure outweigh any potential for shorter NEPA documents or timeframes."[144] In addition, on April 16, 2021, Secretary of the Interior Deb Haaland issued Secretarial Order 3399 ("Department-Wide Approach to the Climate Crisis and Restoring Transparency and Integrity to the Decision-Making Process"). Section 5(a) states: Applying NEPA. Bureaus/Offices will not apply the 2020 [Council on Environmental Quality NEPA] Rule in a manner that would change the application or level of NEPA that would have been applied to a proposed action before the 2020 Rule went into effect on September 14, 2020. Bureaus/Offices will continue to follow the Department's NEPA regulations at 43 C.F.R. Part 46, Department Manual procedures (516 DM Ch. 1-15), and guidance and instruction from the Office of Environmental Policy and Compliance. If Bureaus/Offices believe that the Department's NEPA regulations irreconcilably conflict with the 2020 Rule, they will elevate issues to the relevant Assistant Secretary and to CEQ.[145] This is significant because the 2020 CEQ NEPA rule removed cumulative effects as an impact that must be analyzed during NEPA, but a detailed cumulative effects analysis is required under the prior CEQ NEPA rule. Omitting a robust cumulative effects analysis from the EIS would change the application of NEPA compared to how NEPA would have been applied to the proposed action before the 2020 CEQ NEPA Rule went into effect, which is contrary to the Secretarial Order. [144] 87 Fed. Reg. at 23,467. [145] Secretarial Order 3399 at unnumbered pages 3-4.
NEPA Analysis	Great Basin Resource Watch	Finally, on June 29, 2021, the Council on Environmental Quality (CEQ) published a notice in the Federal Register extending a deadline for revising agency NEPA procedures by two years, to September 14, 2023.[146] A June 21, 2021 court decision that dismissed litigation against the 2020 CEQ NEPA Rule states, "Before the 2020 [CEQ NEPA] Rule can be applied to any particular federal action, each federal agency must adopt its own NEPA procedures." Furthermore, the court decision states, "Defense counsel has represented that following the change in Administrations, CEQ has directed agencies not to devote resources to establishing their own NEPA procedures because it expects to provide further guidance on the 2020 Rule, which it is actively reconsidering."[147] To date, BLM has not revised its agency NEPA procedures to reflect the 2020 CEQ NEPA rule. BLM's existing NEPA handbook directs BLM offices to analyze cumulative effects.[148] Further, the Secretary of the Interior issued Order #3399, on April 16, 2021, which states that: "Bureaus/Offices will not apply the 2020 Rule in a manner that would change the application or level of NEPA that would have been applied to a proposed action before the 2020 Rule went into effect on September 14, 2020." Thus, either the 1978 NEPA rules, or the newly enacted 2022 rules apply to this action. An adequate cumulative effects analysis requires some "quantified or detailed" information.[149] Generalized, conclusory statements about the insignificance of cumulative effects or how they will be effectively mitigated will not suffice.[150] [146] 86 Fed. Reg. 34155. [147] Wild Va. v. Council on Envtl. Quality, No. 3:20-CV-00045, 2021 U.S. Dist. LEXIS 114616, at *31 (W.D. Va. June 21, 2021). [148] BLM NEPA Handbook at 57 to 61. [149] Klamath-Siskiyou Wildlands Ctr. v. BLM, 387 F.3d 989, 993 (9th Cir. 2004). Cf. Sierra Club v. Bosworth, 510 F.3d 1016, 1028-30 (9th Cir. 2007) (requiring consideration of cumulative impacts for activities covered by categorical exclusion for fuel reduction activities); Soda Mountain Wilderness Council v. Norton, 424 F. Supp. 2d 1241, 1266-67 (E.D. Cal. 2006) (finding one-page cumulative impact analysis inadequate). [150] Te-Moak Tribe of Western Shoshone of Nevada v. U.S. Dept. of Interior, 608 F.3d 592, 606 (9th Cir. 2010) (failure to include quantified or detailed information on cumulative effects of past, present, and reasonably foreseeable mining activities). See also Great Basin Mine Watch v. Hankins, 456 F.3d 955, 971-74 (9th Cir. 2006) (holding cumulative impact analysis for gold mining operations inadequate because it consisted of "vague and conclusory statements, without any supporting data" and lacked any explanation for why other mining projects were not explicitly discussed).

Issue Category	Organization	Comment[1]
NEPA Analysis	Great Basin Resource Watch	Subjects to be analyzed for cumulative impacts include air quality, climate change, geology and mineral resources, hazardous and solid wastes, lands and realty, migratory birds, Native American religious and cultural concerns, noxious weeds (invasive and non-native species), rangeland management/livestock grazing, recreation, soils, special-status species (including sage-grouse and golden eagles), surface and groundwater resources, vegetation, visual resources, and wildlife. Specific factors to be considered in the cumulative impacts analysis include: ● Groundwater pumping for agriculture in Fish Lake Valley; ● The Open Mountain Energy geothermal project near the Fish Lake Valley hot well, in addition to the proposed transmission line over Coyote Pass including through the Project area; ● Ormat's Lone Mountain geothermal exploration project; ● The Mineral Ridge gold mine operations; ● ACME lithium's mineral exploration and proposed mining in Fish Lake Valley; ● Lithium Corp's mineral exploration and proposed mining in Fish Lake Valley; ● Additional mining claims, exploration, and proposals for lithium both in Fish Lake Valley and in Clayton Valley; ● Greenlink West transmission line; ● Numerous proposed solar energy projects surrounding the Silver Peak Range for which BLM has received SF-299 forms; ● Any other pertinent projects.

Issue Category	Organization	Comment[1]
Alternatives; NEPA Analysis	Great Basin Resource Watch	3. <u>The EIS Must Include a Reasonable Range of Alternatives</u> NEPA requires BLM to examine a reasonable range of alternatives to the proposed action.[151] The 2020 CEQ Rule revises the definition of "reasonable alternatives" to mean "a reasonable range of alternatives that are technically and economically feasible, and meet the purpose and need for the proposed action."[152] As courts have observed since NEPA's enactment, the purpose of the EIS requirement is to "aid in the agencies' own decision making process and to advise other interested agencies and the public of the environmental consequences of planned federal action."[153] NEPA's mandate to examine reasonable alternatives fulfills this purpose by "ensur[ing] that each agency decision maker has before him and takes into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit balance."[154] Courts recognized early on that "[t]he requirement for a thorough study and a detailed description of alternatives . . . is the linchpin of the entire impact statement."[155] "By compelling a formal 'detailed statement' and a description of alternatives, NEPA provides evidence that the mandated decision making process has in fact taken place and, most importantly, allows those removed from the initial process to evaluate and balance the factors on their own."[156] The Project Overview does not discuss specific alternatives to the proposed action, but at minimum, BLM must include a range of alternatives that would include increased protection for Tiehm's buckwheat, including a one mile buffer. There should also be alternatives which specifically conserve groundwater resources including an alternative without dewatering. Alternatives should also address likely impacts to areas of cultural, religious and historical significance to Native American tribes, and an alternative that manages and protects public land without any assumed rights under the Mining Law unless Ioneer can provide sufficient evidence that the lands to be used for facilities have met the test for valid claims (i.e., discovery of a valuable mineral deposit on each mining claim). [151] See Kleppe v. Sierra Club, 427 U.S. 390, 401-02 (1976) (NEPA "requires that an [EIS] contain, in essence, a detailed statement of the expected adverse environmental consequences of an action, the resource commitments involved in it, and the alternatives to it"). [152] 50 C.F.R. § 1508.1(z) (May 20, 2022). [153] Calvert Cliffs Coordinating Committee v. United States Atomic Energy Commission, 449 F.2d 1109, 1113 (D.C. Cir. 1971). [154] Id. at 1114. [155] Monroe County Conservation Council, Inc. v. Volpe, 472 F.2d 693, 697-98 (2d Cir. 1972). [156] Calvert Cliffs Coordinating Committee, 449 F.2d at 1114.

Issue Category	Organization	Comment[1]
NEPA Analysis; Plan of Operations	Great Basin Resource Watch	4. <u>The EIS Must Examine The Full Impacts of the Build Out of Rhyolite Ridge Mine</u> Ioneer issued a feasibility study (or so-called "definitive feasibility study" ["DFS"]) for the Project in 2020, which reveals the extent of their plans for the Rhyolite Ridge Mine. The mine configuration described in the DFS envisions two separate open-pit mine projects.[157] The first is described as "Quarry Stage 1 - Starter Pit" and is said to supply ore for the first 4.5 years of the project. There is then a "Quarry Stage 2," which encompasses a much larger boundary including nearly the totality of Tiehm's buckwheat's habitat, and is said to extend the life of the mine by another 21 years. The DFS is the document that Ioneer is using to pitch to investors about the Rhyolite Ridge Mine - it is, in effect, a pledge the company is making about its plans for the future. Quarry Stage 2 is a reasonably foreseeable cumulative effect.[158] The Project in question here is merely the "starter pit" for the overall mine project, and the cumulative impacts of full development, including the Quarry Stage 2, must be analyzed in the EIS. Figure 2: Map excerpted from Ioneer's Definitive Feasibility Study, indicating that the Project currently being evaluated by BLM is considered by Ioneer to be stage 1 of a 2 stage open-pit mining complex.[159] [157] Ioneer. 2020. Rhyolite Ridge Lithium-Boron Project, Definitive Feasibility Study (DFS) Report, Executive Summary. 67 pp. p. 19. [158] 40 C.F.R. § 1508.1(g), (aa). [159] Ioneer 2020, p. 20.
Threatened and Endangered Species	Great Basin Resource Watch	5. <u>The Project Must Include a Minimum One Mile Buffer Around Tiehm's Buckwheat</u> Due to the impacts of dust and pollution deposition, disruption to pollinators and megafauna, noise and light pollution, and other factors, the impacts of the Rhyolite Ridge Mine will be most intense within one mile of mining operations. While the Service protected a 500 meter buffer around Tiehm's buckwheat as critical habitat, this does not mean that mining activities occurring directly outside the 500 meter buffer would not have impacts on the plant or its critical habitat. Indeed, it's very easy to envision a scenario where mining immediately outside the 500 meter buffer would cause impacts to the habitat within the 500 meter buffer that reach the level of adverse modification. Therefore, to reduce the possibility of adverse modification, we are calling for a minimum one mile buffer around Tiehm's buckwheat.
Out of Scope	Great Basin Resource Watch	DOE $70 0 MILLION LOAN- DUE DILIGENCE In January of 2023 the DOE's Advanced Technology Vehicles Manufacturing (ATVM) loan program announced a conditional agreement to provide a loan of $700 million to Ioneer for the development of the Rhyolite Ridge Mine. The DOE reports that the loan comes with due diligence including environmental review, finances, and technical due diligence.[160] ● Will (or did) the DOE as a cooperating agency conduct Tribal consultation as part of their due diligence process? [160] https://www.energy.gov/lpo/articles/lpo-announces-conditional-commitment-ioneer-rhyolite-ridge-advance- domestic-production
Cultural resources; Native American concerns	Great Basin Resource Watch	This mine would destroy cave springs, a nearby sacred site, and impact other cultural land values such as potentially denying water to pinyon trees. Pine nuts are an essential Indigenous food source and denying water to a local recovering Bighorn Sheep population. The project is sited with Western Shoshone treaty lands.

Issue Category	Organization	Comment[1]
Out of Scope	Great Basin Resource Watch	The DOE was one of 17 agencies at Biden's second Tribal Nations Summit in November 2022 to approve new best practices of integrating treaty rights into decision making.[161] ● How will the DOE incorporate Western Shoshone Treaty Rights as enshrined in the Treaty of Ruby Valley 1863 into decision making relating to due diligence? To meet expected due diligence standards the DOE should follow the UN Guiding Principles (UNGP's) on due diligence. The inclusion of Indigenous Human Rights in due diligence is required to meet the UNGPs and OECD guidance which say companies should commit to respecting Human Rights. In the context of Rhyolite Ridge, it is within the Western Shoshone treaty lands detailed in the Treaty of Ruby Valley 1863. The United Nations CERD committee found in 2006 that Western Shoshone treaty rights and thus human rights were being violated by the US federal government. This was upheld in 2022 through inclusion in the concluding observations of CERD's August convening. ● Will the DOE follow these international due diligence standards, and how will the violation of treaty rights be considered and mitigated through this due diligence process. Additional due diligence requirements to meet the standards set in UNGP and OECD are that the process is ongoing, and that there is public transparency. ● Will due diligence be an ongoing process? ● In what specific ways will the public have access to information and transparency regarding due diligence? Some essential components of public transparency are: ● What standards is this process being measured against (such as the UNGP's) ● What definition of human rights will be used? ● Who will be in leadership positions? ● How will resources and staff be allocated? ● How often will there be review of the process and who has oversight? ● What grievance mechanisms will be in place and how can the public access them? Furthermore, should the current Plan of Operations, dated May 2020, be found to provide undue risks to the Tiehm's Buckwheat or otherwise require updates to further avoid the endangered species, will DOE revisit due diligence in respect to the new plan or will the current conditional agreement carry over without additional approvals? [161] https://www.whitehouse.gov/briefing-room/statements-releases/2022/11/30/fact-sheet-biden-harris-administration-announces-new-actions-to-support-indian-country-and-native-communities-ahead-of-the-administrations-second- tribal-nations-summit/
NEPA Analysis	Great Basin Resource Watch	MISSING AND MURDERED INDIGENOUS PEOPLE (MMIP) According to the Plan of Operations, the Rhyolite Ridge mine would require 500 workers for construction and 350 for operations. The project site is in Fish Lake Valley which is a small rural community. It is expected that a majority of workers will have to come from outside of the community, and the plan of operations states that it is foreseeable that worker housing, also referred to as a mancamp in the context of extractive projects, will need to be built. The construction of the proposed man camp is a connected action that must be considered relevant to this NEPA analysis. The EIS must analyze the potential direct, indirect and cumulative effects of proposed man camps, including the potential increase of violence.

Issue Category	Organization	Comment[1]
Native American Conerns and Consultation; Socioeconomics and environmental justice	Great Basin Resource Watch	In February of 2019, the Department of Justice published a report titled, Violent Victimization Known to Law Enforcement in the Bakken Oil-Producing Region of Montana and North Dakota, 2006- 2012.[162] This report analyzed increases in violent crime as a result of mancamps, or worker housing, associated with extractive industry. The report found that, “From 2006 to 2012, the rate of violent victimization known to law enforcement in the Bakken oil-producing region of Montana and North Dakota increased, particularly the rate of aggravated assault, which increased 70%. There was no similar increase in rates of violent crime in the counties surrounding the Bakken oil region.” There is clear documentation from federal sources that a drastic increase in violence is to be expected based on objective evidence. Moreover, it is well understood through the issue of Missing and Murdured Indigenous People (MMIP) that this type of violence provides greater impacts Indigenous people as well has increase gender-based violence, such as rape, human trafficing, murder, and domestic assault. “I’m concerned because we have a lot of young girls. They aren't brought up in the city, they are raised in our cultural way where they are shielded from this kind of violence. Will it be up to us to teach our youth how to stay safe? I am also worried for non-native families in the area. What happens if they make the mancamp, how do we know whether or not the people who come in hold prejudice against brown people? It is a small community, we all know each other, and we live like one big family. When they come in, the community might change and start fighting each other.”- Janice Gonzales, Timbisha Shoshone Tribal Member, native cultural monitor, and resident of Fish Lake Valley It is part of the federal government's Trust Responsibility with Tribes to ensure the physical health and wellness of Indigenous Peoples. Therefore, given the available information, it is the role of the federal government to include an analysis of the effects of mancamps (or worker housing) on the local community with a specific focus on impacts to Indigenous Peoples ● As a part of this permitting, will there be consultation with relevant Tribes regarding the potential direct, indirect and cumulative impacts of mancamps and MMIP? ● Which Tribes will be consulted on these issues? ● What mitigation strategies are planned to address this foreseeable increase in violence? ● Will mitigation take into account the particular pattern of this violence disproportionately affecting Indigenous People’s and relating to gender-based violence? [162] https://www.ojp.gov/ncjrs/virtual-library/abstracts/violent-victimization-known-law-enforcement-bakken-oil- producing

Issue Category	Organization	Comment[1]
Native American Concerns and Consultation; NEPA Analysis	Great Basin Resource Watch	CULTURAL CONSULTATION *"Right here in Fish Lake Valley on first contact, it has been estimated that there may have been approximately 3000 Western Shoshone in Fish Lake Valley alone. Shoshone irrigation systems and agriculture were destroyed just as they were destroyed in the Owens valley and in other parts of the North American continent. This strategy was a way of dehumanizing Western Shoshone and Owens Valley Paiute/Shoshone by pushing the idea that Paiute and Shoshone peoples were nomadic hunter/gatherers wandering aimlessly in the pursuit of food.* *Between the 1840's and 1880's, extermination policies took place all across Nevada and California by Indian Hunters that were paid by the state(s) of California and Nevada and reimbursed by the federal government. Scalps, hands, heads and other body parts were taken for rewards paid by the government and taken as trophies by murderous Indian hunters. Stories of a man named Dyer was passed down through oral stories how this man, Dyer went around murdering men, women and children clearing the valley for Euroamerican use. What was told to me is horrifying that he and other Euroamericans burning villages and throwing babies and small children into these fires as a way to cover up the atrocities of sadistic cold-blooded murders."*- Joe Kennedy Timbisha Shoshone of the Western Shoshone Nation residing in Fish Lake Valley. The Plan of Operations contains some generalized commitments to follow the Native American Grave Protection and Repatriation Act (NAGPRA) should Indigenous bodies be inadvertently excavated through this proposal. Based on the history of US government extermination policy (detailed above) the process of adequate consulting with Tribes for both NAGPRA and as a NEPA requirement are complicated. Although there is not an IRA Tribe located in Fish Lake Valley, it is ancestral Western Shoshone land within the boundaries detailed in the Treaty of Ruby Valley 1863. Given the often overlapping boundaries of Indigenous cultures, and Fish Lake Valley's proximity to certain Paiute communities, the region should additionally be analyzed in terms of being ancestral Paiute lands. It is reasonable to understand that a diasporic spread currently exists of Indigenous Peoples with ancestral ties to the region who've been displaced against their will. Therefore, adequate consultation on both NEPA and NAGPRA would require casting a large net in outreach to Tribes. At a minimum, the Bishop, Lone Pine, and Big Pine Tribes to the West, the Timbisha tribe to the south, the Yomba Tribe to the East, and the Walker River Tribe to the North should be included in any consultation. ● Which of these communities will be party to consultation? ● For any of the communities listed above being excluded from consultation, what is the reason? ● Should human remains inadvertently be discovered, how will a determination be made regarding which of the listed Tribes to include in the subsequent NAGPRA process. In November of 2022, the White House hosted the second Tribal Nations Summit of Biden's Administration. At the summit, 17 federal agencies approved new best practices to integrate treaty rights into decision making. ● How will the BLM integrate these new best practices into permitting for the Rhyolite Ridge Project in regard to the Treaty of Ruby Valley 1863?
Plan of Operations	Great Basin Resource Watch	EXPLOSIVES The explosive storage facility is proposed to be sited on the edge of the primary Tiehm's Buckwheat population. The location adheres to MSHA, state, and federal requirements for safety by siting the facility 700 feet away from Cave Springs Road. ● Why was it determined that the facility provided too much risk to be near the road, yet the risk is acceptable to the endangered species? ● What alternative locations have been considered which could provide less risk to the endangered species, and if not why?

Issue Category	Organization	Comment[1]
NEPA Analysis	Great Basin Resource Watch	CUMULATIVE ANALYSIS The EIS should also examine how the various impacts of this mine will add to the collective impacts of other ecosystem disturbing projects in the region. For example, could mercury emissions from the mine when taken together with other mercury sources in the region result in mercury exceedance according to the Clean Air Act. Or, does the mine disturbance further impair the regional ecosystem resulting in seriously threatening fauna and/or flora. The cumulative impact analysis needs to address cultural traditions as well, such as the pine nut harvest. A cumulative impact is "the impact on the environment which results from incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR § 1508.7.) This definition is critical to determining the proper area to be studied in a cumulative impact assessment.
Mitigation	Great Basin Resource Watch	ADDITIONAL NEPA, FLPMA, AND OTHER REQUIREMENTS NEPA requires BLM to fully analyze all mitigation measures, their effectiveness, and any impacts that might result from their implementation. NEPA regulations require that an EIS: (1) "include appropriate mitigation measures not already included in the proposed action or alternatives," 40 CFR § 1502.14(f); and (2) "include discussions of: . . . Means to mitigate adverse environmental impacts (if not already covered under 1502.14(f))." 40 CFR § 1502.16(h). NEPA requires that BLM review mitigation measures as part of the NEPA process -- not in some future decision shielded from public review. 40 CFR § 1502.16(h). This includes mitigation for all potentially affected resources such as air and water quality, wildlife, cultural, recreation, visual, etc.
NEPA Analysis	Great Basin Resource Watch	Under NEPA, the DEIS must also fully review all direct, indirect, and cumulative environmental impacts of the Project. 40 C.F.R. §§ 1502.16, 1508.8, 1508.25(c). Direct effects are caused by the action and occur at the same time and place as the proposed project. Id. § 1508.8(a). Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Id. § 1508.8(b). Types of impacts include "effects on natural resources and on the components, structures, and functioning of affected ecosystems," as well as "aesthetic, historic, cultural, economic, social or health [effects]." Id. Cumulative effects are defined as: [T]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. 40 C.F.R. § 1508.7.

Issue Category	Organization	Comment[1]
NEPA Analysis	Great Basin Resource Watch	The DEIS must provide any meaningful analysis of the cumulative impacts of all past, present, and reasonably foreseeable future activities/actions. In its cumulative impact analysis, an agency must take a "hard look" at all actions: [A]nalysis of cumulative impacts must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment. Without such information, neither the courts nor the public can be assured that the [agency] provided the hard look that it is required to provide. Te-Moak Tribe of Western Shoshone v. U.S. Dep't of Interior, 608 F.3d 592, 603 (9th Cir. 2010) (rejecting EA for mineral exploration that had failed to include detailed analysis of impacts from nearby proposed mining operations). The Ninth Circuit has repeatedly faulted the federal land agencies' failures to fully review the cumulative impacts of mining projects. In the most recent case, vacating BLM's approval of a mine, the court stated that "'in a cumulative impact analysis, an agency must take a 'hard look' at all actions that may combine with the action under consideration to affect the environment.'" Great Basin Resource Watch v. BLM, 844 F.3d 1095, 1104 (9th Cir. 2016) (emphasis in original) (quoting Te- Moak Tribe). BLM violated NEPA because it "did not 'identify and discuss the impacts that will be caused by each successive project, including how the combination of those various impacts is expected to affect the environment.'" Id. at 1105, quoting Great Basin Mine Watch, 456 F.3d 973-74. In Great Basin Mine Watch, the Ninth Circuit required "mine-specific . . . cumulative data," a "quantified assessment of their [other projects] combined environmental impacts," and "objective quantification of the impacts" from other existing and proposed mining operations in the region. Id. at 972-74. The agency cannot "merely list other [projects] in the area without detailing impacts from each one." Id. at 972. See also ONRC v. Goodman, 505 F.3d 884, 893 (9th Cir. 2007).
NEPA Analysis	Great Basin Resource Watch	In addition to the fundamental cumulative impacts review requirements noted above, NEPA regulations also require that the agency obtain the missing "quantitative assessment" information. 40 C.F.R. § 1502.22. "If there is 'essential' information at the plan- or site-specific development and production stage, [the agency] will be required to perform the analysis under § 1502.22(b)." Native Village of Point Hope v. Jewell, 740 F.3d 489, 499 (9th Cir. 2014). Here, the adverse impacts from the Project when added to other past, present, or reasonably foreseeable future actions is clearly essential to BLM's determination (and duty to ensure) that the projects comply with all legal requirements and minimizes all adverse environmental impacts.
NEPA Analysis	Great Basin Resource Watch	Under NEPA, BLM must also fully analyze the baseline conditions of all potentially affected resources. BLM is required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 CFR § 1502.15. The establishment of the baseline conditions of the affected environment is a fundamental requirement of the NEPA process. "Without establishing the baseline conditions which exist ... before a project begins, there is simply no way to determine what effect the project will have on the environment, and consequently, no way to comply with NEPA." Great Basin Resource Watch, 844 F.3d at 1101, quoting Half Moon Bay Fisherman's Mktg. Ass'n. v. Carlucci, 857 F.2d 505, 510 (9th Cir.1988). "[W]ithout [baseline] data, an agency cannot carefully consider information about significant environment impacts. Thus, the agency fails to consider an important aspect of the problem, resulting in an arbitrary and capricious decision." N. Plains Resource Council, Inc. v. Surface Transp. Bd., 668 F.3d 1067, 1085 (9th Cir.2011). This includes the requirement to fully analyze for public review the quality and quantity of ground and surface waters, wildlife, recreation, cultural, air quality, and all potentially affected resources.

Issue Category	Organization	Comment[1]
Law and Regulation	Great Basin Resource Watch	FLPMA and BLM mining regulations require that all activities on public land comply with all environmental protection standards, including air and water quality standards. See, e.g., 43 CFR § 3809.5 (definition of "Unnecessary of Undue Degradation" prohibited under FLPMA includes "fail[ure] to comply with one or more of the following: … Federal and state laws related to environmental protection."); § 3809.420(b)(4) (listing Performance Standards that must be met, including the requirement that "All operators shall comply with applicable Federal and state air quality standards, including the Clean Air Act (42 U.S.C. 1857 et seq.)." The same is true for operations that are not specifically authorized by the 1872 Mining Law (such as the waste and tailings facilities discussed above) which are properly governed by DOI/BLM's FLPMA special use regulations : "(b) Each land use authorization shall contain terms and conditions which shall: … (3) Require compliance with air and water quality standards established pursuant to applicable Federal or State law." 43 C.F.R. §2920.7(b)(3). NEPA requires that: "Environmental impact statements shall state how alternatives considered in it and decisions based on it will or will not achieve the requirements of sections 101 and 102(1) of the Act [NEPA] and other environmental laws and policies." 40 C.F.R. § 1502.2(d).
Threatened and Endangered Species; Plan of Operations	Great Basin Resource Watch	CONCLUSION The Project poses an acute risk of extinction to the federally listed endangered plant Tiehm's buckwheat, and the current POO likely would be in violation of the Endangered Species Act if approved as is. Due to the significant overlap between the proposed mining pit and waste rock dumps and the Tiehm's buckwheat designated critical habitat, the POO likely needs to be completely overhauled to avoid the critical habitat. Additionally, due to the high likelihood of significant indirect impacts such as dust, pollution deposition, air quality declines, disturbance of pollinators, introduction of invasive species, and disturbance of megafauna and other biological processes, we believe that mining activities need to be kept at least one mile away from the Tiehm's buckwheat population to ensure there is no adverse modification of the critical habitat. We find the existing POO and supporting analysis contains numerous errors and conceptual flaws and needs to be independently reviewed. The current plan would also likely require perpetual management of water pollution involving the mining pit lake (quarry) and the tailings (spent ore) waste facility. Therefore, Commenters are very concerned about the development of this mine. Thank you for your consideration of these scoping comments. Thank you for the opportunity to submit these comments. Please feel free to contact any of the Commenters if you have any questions or concerns. Sincerely, John Hadder Great Basin Resource Watch Kevin Emmerich Basin and Range Watch Ian Bigley Earthworks Sarah Wochele Progressive Leadership Alliance of Nevada

Issue Category	Organization	Comment[1]
Public involvement	USEPA	The U.S. Environmental Protection Agency has reviewed the Bureau of Land Management's Notice of Intent to prepare an Environmental Impact Statement for the Rhyolite Ridge Lithium-Boron Project. Our comments are provided pursuant to the National Environmental Policy Act, the Council on Environmental Quality's implementing regulations (40 CFR Parts 1500-1508), and our review authority under Section 309 of the Clean Air Act. The EPA is also a Cooperating Agency for the EIS under our *Memorandum of Understanding for Mining Environmental Impact Statements within the State of Nevada*. In advance of the BLM's Notice of Intent, we have been participating with the BLM and the project team in periodic meetings and coordinating on background materials, including resource reports that will inform the EIS. In addition to the input and recommendations we have provided to-date, please consider the attached detailed comments for the preparation of the Draft EIS. The topics include water resources, geochemistry, air quality, biological resources, reclamation, closure, post-closure management, and financial assurances, among others. We appreciate the opportunity to provide these scoping comments and look forward to continued coordination during preparation of the Draft EIS. Sincerely, Hugo Hoffman Environmental Review Branch Enclosure: Detailed Comments
Alternatives, NEPA analysis	USEPA	**U.S. EPA DETAILED COMMENTS ON PROPOSED RHYOLITE RIDGE LITHIUM-BORON PROJECT, ESMERALDA COUNTY, NEVADA – FEBRUARY 3, 2023** **General Comments** ***Scope*** Analyze project alternatives, environmental setting, and potential impacts as a whole. Discuss impacts from the proposed project and alternatives both during operations and through post-closure. For each alternative, describe all potential impacts, which include "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative." (40 CFR 1508.1(g)(4)) Address all potential environmental impacts connected to mine construction, operations (including ore transport and processing), closure and post-closure, including all interdependent parts of the mine (40 CFR 1501.9(e)).
Alternatives, Law and regulation	USEPA	***Alternatives*** Evaluate in detail all reasonable alternatives that fulfill the proposed action's purpose and need. Reasonable alternatives could include, but are not necessarily limited to, alternative designs or configurations for major mining facilities and transportation networks, or modifications to the proposed closure methodologies and timelines. Discuss the alternatives in the context of the BLM's authorities under the Mining Act of 1872, the Federal Land Policy and Management Act, and other relevant statutes and regulations..
Alternatives	USEPA	We recommend that the BLM identify alternatives that avoid, minimize, and compensate for significant impacts to water, air, wildlife, and other resources. Identify project design options that avoid significant environmental impacts and clearly describe the rationale used to determine whether impacts of an alternative are significant. Provide a clear discussion of the reasons for elimination of alternatives that are not evaluated in detail. Quantify and present the environmental impacts of all alternatives in comparative form, thus sharply defining the issues among the options for decision makers and the public (40 CFR 1502.14 (b)). Please consider alternative locations for supplemental water wells to prevent or delay impacts to geothermal resources and/or springs.

Issue Category	Organization	Comment[1]
NEPA analysis, Laws and regulations	USEPA	***Cumulative Impacts*** According to the Council on Environmental Quality (CEQ) regulations implementing NEPA, a cumulative impacts/effects "...are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR 1508.1(g)(3)).
NEPA analysis	USEPA	Cumulative impacts analyses are important to the Draft EIS as they describe the threats to resources as a whole. Understanding cumulative impacts can illuminate opportunities for minimizing those threats. Describe the potential cumulative impacts associated with the proposed project and alternatives, as well as the methodology used to assess them. This would include consideration of impacts in the cumulative context of all impacts associated with the project, including impacts related to other mines in the hydrographic area.
NEPA analysis	USEPA	Guidance on how to analyze cumulative impacts has been published by the CEQ2 and EPA.3 In addition, you may also wish to refer to http://www.dot.ca.gov/ser/cumulative_guidance/purpose.htm. This cumulative impact guidance was prepared by the California Department of Transportation, the Federal Highway Administration, and EPA Region 9 for transportation projects in California. However, the principles and the 8-step process in this guidance can be applied to other types of projects, and outside of California. We recommend the principles and steps in this guidance to other agencies as a systematic way to analyze cumulative impacts for their projects. The EPA offers the following recommendations for structuring cumulative impacts analyses: • Include a description of the affected environment that focuses on each affected resource or ecosystem. Identify the affected environment through meaningful impacts and natural boundaries rather than predetermined geographic areas; • Focus on resources of concern, i.e., those resources that are "at risk" and/or are significantly affected by the proposed project, before mitigation. Identify which resources are analyzed, which ones are not, and why; • Identify all other on-going, planned, and reasonably foreseeable projects in the study area. Where studies exist on the environmental impacts of these other projects, use these studies as sources for quantifying impacts; • Include a description of existing and anticipated future conditions in the project area to demonstrate how environmental conditions, such as temperature and precipitation regimes, are expected to change in the hydrographic area through the anticipated life of the project, including post-closure activities; • Include appropriate baselines for the resources of concern with an explanation as to why those baselines were selected; and • When impacts occur in combination with other trends and reasonably foreseeable effects, discuss what mitigation may be implemented. Clearly state who would be responsible for mitigation measures and how mitigation implementation would be ensured.
NEPA analysis	USEPA	Identify the future condition of the resource based on an analysis of the cumulative impacts of reasonably foreseeable projects or actions added to existing conditions and current trends. If cumulatively significant impacts could occur in combination with effects from the project, we recommend that the Draft EIS consider reasonable alternatives that include adaptive management objectives to account for future projected changes.
Mitigation	USEPA	***Mitigation*** Identify and describe appropriate mitigation measures associated with the proposed action, specifying which ones would be committed to by the mine operator and/or required by the BLM or another federal, state, or local agency. Discuss all feasible mitigation measures which are not already part of the proposed action or alternatives. Explain how each measure would specifically mitigate the targeted impact, provide substantial detail on the means of implementing each mitigation measure. Identify who would be responsible for implementing the mitigation measure, indicate whether it is enforceable, and describe its anticipated effectiveness. We recommend that for each impact area, the Draft EIS describe the specific mitigation implementation thresholds, any mitigation implementation and effectiveness monitoring that may be necessary, and the criteria by which success would be determined once mitigation is fully implemented. Furthermore, for some mitigation measures, it may be necessary to describe the contingency planning and adaptive management options should mitigation be found to be less than fully successful.
Mitigation	USEPA	***Monitoring and Adaptive Management*** We recommend that a monitoring and mitigation plan be required to ensure compliance with all mitigation measures and applicant committed protection measures and to assess their effectiveness over time. In the Draft EIS, describe the monitoring program and how it will be used as an effective feedback mechanism (i.e., adaptive management) so that any needed adjustments can be made to the project to meet environmental objectives throughout the life of the project.

Issue Category	Organization	Comment[1]
Mitigation	USEPA	The EPA supports the use of adaptive management for decision-making where there is uncertainty about the level of impact, the ability of a resource to respond to change, or the effectiveness of mitigation. We recommend the impact assessment discuss the following necessary elements of an adaptive management plan, if one is used: • Identify specific resource value goals and management objectives; • Discuss the modeling efforts used to predict impacts and identification of data gaps • Discuss assumptions about expected outcomes and the level of impact that would be deemed acceptable; • Create a specific monitoring plan that can accurately measure the impacts and the effectiveness of mitigation; • Discuss the level of impact that would trigger action, including additional mitigation measures that would be implemented should a threshold be exceeded; • Identify funding sources for long-term mitigation and monitoring, if applicable; and Identify mechanisms for public disclosure of the monitoring results and adaptive management decisions.
Mitigation	USEPA	Monitoring is a key provision of adaptive management. Where there is insufficient information available about the resource or the effectiveness of a mitigation measures, we recommend studies be included as condition of the authorization to address information gaps and advance the adaptive management strategy.
Water resources	USEPA	**Water Resources** ***Site Characterization*** Provide a complete hydrologic characterization of the project vicinity and the affected area. Describe all existing water resources and baseline surface water and groundwater quality, quantity, and flow regimes in the project vicinity and the impact area. Information on groundwater properties and interconnectivity of groundwater/surface water (e.g., seeps, springs) is needed to identify and assess potential impacts to water resources, as well as the risks to receptors from contaminants. Provide past and current monitoring results and trends for surface water and groundwater quantity and quality in the proposed mine areas.
Water resources, Hazardous materials and waste	USEPA	***Water Quality*** Discuss all impacts to surface water and groundwater quality from the proposed project and alternatives during operations, closure, and post-closure. Describe all potential project discharges, seepage, temporary ponding, diversions, and groundwater pumping, as well as the effects of these activities on water rights, quality, flow, beneficial uses, and wildlife. We recommend the Draft EIS: • Discuss the potential for contamination of meteoric water that contacts proposed overburden storage facilities, spent ore, pit wall rock, stockpiles, roads, and other mine facilities. Analyze the fate and transport of any such water and discuss the possibility for wildlife exposure to mine-influenced waters. • Discuss the potential for and effects of movement of any contaminated surface water to the subsurface, including through the pit bottom and through faults and fractures. • Describe the projected chemical compostition of water in open ponds that would be located at the site, including spent ore ponds and evapotranspiration cells. Describe the potential for such waters to enter external surface water features. Evaluate the ecological risk of exposure to any open water over the life-cycle of the mine. • Describe the designs of the proposed run-on/run-off channels, seepage collection systems, collection and sedimentation ponds, pump back systems, and any necessary treatment or disposal of these solutions. Depict these facilities on a map and describe all required monitoring/maintenance necessary to ensure proper functioning. • Describe all other mitigation measures to prevent contamination of water and sediments. • Discuss how accidental releases of hazardous materials would be handled. • Identify the potential impacts of failure of the containment systems, methods for discovering such failures, and the degree to which impacts would be reversible. • Describe the mine's petroleum-contaminated soil management plan. • Describe the potential impacts to surface water, groundwater, and wildlife from any open solution, sludge or evaporation pits, ponds or disposal areas, as well as the measures that would be taken to prevent these impacts during operations and post closure. Indicate what bond or long-term funding may be required to cover long-term monitoring and mitigation for these areas.

Issue Category	Organization	Comment[1]
Water resources	USEPA	***Water Quantity*** Provide an estimate of the quantity of water the project will require during operations, closure, and post-closure. Identify the source of this water, the affected hydrologic basins, and the potential effects on other water users in the project vicinity.
Water resources	USEPA	Include hydrogeologic modeling and include a map of drawdown contours during operations, closure, and post-closure periods, as well as identify the maximum extent of groundwater drawdown resulting from the proposed project. On the drawdown maps, include a depiction of the smallest increment of groundwater drawdown contour that can be projected by the model and is likely to occur from supply and dewatering activities for the proposed project. Identify the year and acreage of the maximum extent of the drawdown contour. Discuss potential impacts to groundwater-dependent surface water resources within and outside the project area from pumping activities.
Water resources, Wetlands and riparian areas	USEPA	Identify impacts to surface water flow, water supply wells, wetlands, seeps and springs, vegetation, wildlife, and other groundwater dependent ecosystems that could occur as a result of groundwater pumping associated with the proposed project. Describe and include maps of the post-closure groundwater recovery.
Water resources, Mitigation	USEPA	Assess, monitor, and, if appropriate, mitigate for impacts to groundwater-dependent surface water resources within a reasonable buffer outside of the smallest drawdown projected from the groundwater model to account for impacts from drawdown less than can be projected with confidence, but can reasonably be expected to occur.
Water resources	USEPA	***Drainages and Floodplains*** Describe how drainage patterns would change (including post-closure drainage patterns) under each alternative. Include hydrologic and topographic maps of the project area and affected area. Identify any components of the proposed project that would fall within 25- and 100-year floodplains, as well as any facilities that would pose a risk within the 500-year floodplain. Discuss the potential for runoff to transport sediment or contaminants from disturbed areas at the mine to any surface waters, as well as any potential receptors outside the mine boundaries.
Water resources	USEPA	***Sizing Stormwater Management Infrastructure*** Consider the impacts of changing precipitation patterns on the project as part of its analysis of impacts to water resources, and commit to designing all erosion control, bypass and diversion features to withstand longer precipitation frequency/duration models. Government agencies like the Federal Energy Regulatory Commission and the U.S. Army Corps of Engineers are increasingly relying on 200-year and 500-year levels to simulate rainfall amounts and intensity to standardize dam safety and levee design. Additionally, the U.S. Geological Survey is testing 500-year levels on various soils to estimate infiltration/runoff rates and reduce erosion risks at hazardous waste dumps. In the Draft EIS, identify which design considerations would be needed to accommodate future anticipated effects from storms of increased intensity and severity and consider upsizing the stormwater management channels and retention systems beyond the 100-year, 24-hour precipitation event.
Water resources, Project description	USEPA	***Monitoring*** Provide past and current monitoring results and trends for surface water and groundwater quantity and quality in the mine area. Discuss all ongoing and proposed monitoring plans and their relevance in predicting the potential for, and protecting against, contaminated drainage from mine operations. Describe procedures for water quality and quantity monitoring and reporting procedures, including procedures for monitoring the function of the rock disposal areas for controlling contact between this material and surface or meteoric water (e.g., maintenance of run on/runoff channels, liners, underdrains, seepage collection areas, growth medium covers, ponding on top of facilities). Identify all monitoring locations for surface water, ponded water, and collected seepage; groundwater monitoring wells; and points of compliance on the site. In the Draft EIS, discuss monitoring frequencies, screening intervals, and parameters to be monitored during all phases of the project, including post-closure.

Issue Category	Organization	Comment[1]
Water resources	USEPA	***Permitting*** The EPA recommends that the Draft EIS identify all permits and standards that apply to the project, including beneficial use water quality standards, and discuss each alternative's compliance with the standards and permits. Discuss the applicability of the State's Mining Stormwater General Permit to this project. Include a stormwater pollution prevention plan and discuss specific mitigation measures that may be necessary during operations, closure, and post-closure. Describe the measures that would be employed to ensure the mine achieves and maintains a zero-discharge status to surface waters and groundwater for all phases of the project.
Water resources, NEPA analysis	USEPA	Even if required permits are not obtained during the NEPA process, the EPA recommends that the analysis include a description of anticipated or reasonably foreseeable permit requirements and how such permit requirements would be protective of human health and the environment. For example, include detail about the measures that would likely be required in the Water Pollution Control Permit and explain how the requirements would be met. If meeting permit requirements may still result in residual impacts to the environment, consider additional measures to mitigate remaining impacts.
Water resources	USEPA	***Clean Water Action Section 404 Applicability*** Describe the status of the BLM's coordination with the U.S. Army Corps of Engineers to obtain a jurisdictional determination and determine Clean Water Act Section 404 permit requirements for discharge of dredged or fill material into waters of the United States, including wetlands and other "special aquatic sites." Please note that the EPA and Army Corps of Engineers recently announced the final "Revised Definition of 'Waters of the United States'" rule (40 C.F.R. Part 120) which will go into effect March 20, 2023. We encourage the BLM to require use of an updated delineation for this project, verified by the Corps under the new definition.
Geochemistry	USEPA	**Geochemistry** Accurate characterization of the geochemistry at the proposed Rhyolite Ridge Project site is critical for properly identifying the project's potential impacts and addressing them through facility design and mitigation measures. Discuss the mineralogy and acid generation/neutralization potential of overburden, spent ore, and pit walls in the project area. Describe the static and kinetic tests that have been conducted on these materials and provide the results for each test. Discuss the potential for neutral mine drainage and metals leaching regardless of the potential for acid generating conditions. Include cross-sections showing locations of static and kinetic test samples and describe and discuss their representativeness.
Geochemistry, Water resources, Mitigation	USEPA	Describe the current quality of waters at the site. Discuss whether there are adequate materials available to neutralize all acid-generating waste rock that might occur and identify a source of neutralizing material on- or off-site, if needed. Describe and commit to measures to ensure isolation of potentially acid generating waste rock, prevention of acid generation from mine waste and pit walls, and any additional mitigation measures that may be necessary if prevention measures fail.
Geochemistry, Project description	USEPA	In addition to characterization, describe how waste rock would be handled, disposed, and reclaimed at the mine. Discuss facility designs and control measures that would be implemented to ensure against leaching and release of contaminants under both acidic and non-acidic conditions, and degradation of surface water and groundwater quality. Support this discussion with both geochemical testing data and on-site current or historic monitoring data (e.g., recent monitoring results, pan evaporation rates, etc.).
Air quality	USEPA	**Air Quality** Include a complete analysis of the project's potential to affect air quality. Describe existing air quality in the project vicinity and discuss the National Ambient Air Quality Standards (NAAQS) and Prevention of Significant Deterioration (PSD) increments applicable to air quality in the project area. Explain potential impacts to the NAAQS and PSD increments from projected emissions of the project and alternatives by considering the effects from all aspects of mine exploration, excavation, construction, operation, and support activities, such as vehicle traffic, as well as emissions from other sources in the project area. Coordinate with Nevada Department of Environmental Protection regarding regulatory requirements and controls.

Issue Category	Organization	Comment[1]
Air quality	USEPA	Summarize air pollutant emissions for each alternative, including criteria pollutants and hazardous air pollutants (HAPs). Estimate emissions from all mine operations and facilities, such as roads, construction, blasting, excavation, and processing. Emissions sources also include any off-site processing and support activities, such as direct emissions from vehicle traffic and delivery trucks for fuels, maintenance supplies, and other materials; indirect emissions from power plants supplying power to the mine; as well as emissions from other sources in the project area. Conduct modeling to determine concentrations of criteria air pollutants for an accurate comparison with the NAAQS and State standards. Air Quality Impact Analysis Reports have typically used Statewide average silt contents for estimating the particulate matter emissions from unpaved roads. This may result in underestimating modelled PM10 and PM2.5 concentrations. Per AP-42, 13.2.2 Unpaved Roads, we recommend sampling to determine the site-specific silt content and use that to model the PM air quality impacts.
Air quality	USEPA	Discuss whether and how air quality monitoring would be implemented to ensure project compliance with all applicable air quality standards and permits.
Air quality, Mitigation	USEPA	Discuss mitigation measures to minimize air pollutant emissions from the mine and include measures to address potential impacts to nearby residents, including sensitive receptors. Diesel particulate matter (DPM) and other criteria pollutants from fugitive sources at the mine can be reduced by implementing appropriate mitigation measures, such as the following: • Implement idling best management practices (BMPs) to limit truck and equipment idling on site, including strict enforcement of idling limits. At the same time, the practice will result in fuel savings. • Require advanced pollution controls and clean fuels for new equipment, and for older equipment to be retrofitted. Use particle traps and other appropriate controls to reduce emissions of diesel particulate matter (DPM) and other air pollutants. Traps control approximately 80 percent of DPM, and specialized catalytic converters (oxidation catalysts) control approximately 20 percent of DPM, 40 percent of carbon monoxide emissions, and 50 percent of hydrocarbon emissions. • Minimize construction-related trips of workers and equipment, including trucks and heavy equipment. • Lease or buy newer, cleaner equipment (1996 or newer model). Employ periodic, unscheduled inspections to ensure that construction equipment is always properly maintained and does not unnecessarily idle, is tuned to manufacturer's specifications, and is not modified to increase horsepower except in accordance with established specifications.
Air quality, Mitigation, Project description	USEPA	We recommend that any sustainable design and operation measures that could minimize air pollutant emissions be included in the Draft EIS with an estimate of the emissions that would be avoided if these measures were implemented. In the Draft EIS, clearly indicate whether these measures would be required, and for each measure discuss its permanence, verifiability, and enforceability. We offer the following potential measures for the BLM's consideration: • Use conveyors rather than haul trucks where possible, e.g., for transporting ore to processing areas and the leach facility. • Incorporate alternative energy components into the project, such as on-site solar and/or geothermal power generation. • Offer ride sharing or shuttle opportunities for mine employees commuting to the site from both nearby and distant communities. • Commit to using high efficiency diesel particulate filters on new and existing diesel engines to reduce of black carbon emissions.
Air quality	USEPA	***Hazardous Air Pollutants*** Include estimated releases of HAPs, including mercury, lead, and arsenic, from the proposed project to air, soil, and water resources, including any off-site facilities instrumental to mine operations (i.e., any offsite ore processing, smelting). Present in table form the amounts and sources of HAPs and the unit processes that generate this material, including major/thermal processing equipment.
Air quality	USEPA	Discuss how all HAPs would be controlled to reduce their emissions as much as possible. Identify measures and equipment that would be utilized to condense, capture, and/or treat HAPs, including mercury, lead, and arsenic. Explain how these measures are effective in removing HAPs and limited release into the environment and indicate how any captured HAPs would be disposed of. Describe the HAPs monitoring that would be conducted, including locations and reporting requirements. Discuss the likely fate and transport of mercury, lead, and arsenic air emissions from the proposed project and describe the total amount of these metals that is annually emitted to the air in Nevada. Describe the HAPs monitoring that would be conducted, including locations and reporting requirements.

Issue Category	Organization	Comment[1]
Air quality	USEPA	**Sulfuric Acid Plant** Include a discussion of the potential permits which may be required from Nevada Department of Environmental Protection under the Clean Air Act for the Sulfuric Acid Plant (SAP). Include estimates of the facility's potential to emit for all relevant pollutants pursuant to 40 CFR 52.21, discuss whether the facility would require New Source Review or Title V permits. For emissions estimates, include estimates of fugitive emissions related to the SAP, such as those from roads within the Plan of Operations boundary that are used for the delivery of sulfur to the plant. Include details on measures which could control direct, indirect, stack, and fugitive emissions.
Air quality, Climate change	USEPA	**Greenhouse Gases and Climate Change** The EPA recommends that the impacts from greenhouse gas emissions and the impacts from climate change on the project and project's impacts be considered in the Draft EIS. Overarching guidance can be found in Executive Order (EO) 13990, Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis (January 20, 2021), which urges agencies to "consider all available tools and resources in assessing GHG emissions and climate change effects of their proposed actions, including as appropriate and relevant, the [CEQ's] 2016 GHG Guidance." In January 2023, CEQ updated its 2016 guidance and issued interim guidance to assist agencies in analyzing GHG and climate change effects of their proposed actions under NEPA.4 We recommend utilizing this guidance for the Draft EIS.
Air quality, Climate change	USEPA	We offer the following recommendations for structuring the EIS analysis: ***Quantify GHG emissions*** Quantify GHG emissions and include estimates of the direct and indirect, annual and total, GHG emissions for each alternative, for major the major GHGs (e.g. CO2, N2O, methane). ***Provide context for the impacts of emissions*** Discuss how emissions are or are not consistent with local policies or goal and compare project emission in the regional context. For example, discuss how emissions help or hinder meeting GHG reduction targets set at the federal, state or local level (40 § 1506.2(d)). Discuss how project emissions and other operational elements interact with the goals of the State of Nevada Climate Initiative (https://climateaction.nv.gov/our-goals/) and national and international GHG emissions reduction goals, including the U.S. 2030 Paris GHG reduction target and 2050 net-zero pathway (https://www.whitehouse.gov/briefing-room/statements-releases/2021/04/22/fact-sheet-president-biden-sets-2030-greenhouse-gas-pollution-reduction-target-aimed-at-creating-good-paying-union-jobs-and-securing-u-s-leadership-on-clean-energy-technologies/). This discussion should address the increasing conflict over time between continued GHG emissions and GHG emissions reduction goals over the project lifetime, and ways to avoid or mitigate that conflict.
Air quality, Climate change	USEPA	Consider including the Social Cost of GHG to aid in the disclosure of impacts. A discussion of the SC-GHG estimates used in recent federal benefit cost analysis (BCA) can be found in EPA's supporting documents for the Revised Cross-State Air Pollution Rule (CSAPR) Update Rule. Specifically, the estimates used in the BCA of the Revised CSAPR rule are the interim SC-GHG estimates that EPA and other members of the IWG developed under E.O. 13990 for use in BCA until an improved estimate of the impacts of climate change can be developed based on the best available science and economics taking into consideration recommendations from the National Academies of Sciences, Engineering, and Medicine (National Academies, 2017). Additional information on the SC-GHG, including interim cost estimates, can be found at https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf. Even absent a full benefit-cost analysis, where it is possible to develop a reasonable estimate of the net changes in direct and indirect GHG emissions resulting from a proposed project (i.e., relative to a no action alternative), the use of SC-GHG estimates can provide useful information in the environmental review to help interpret GHG emissions results for the public.
Air quality, Climate change	USEPA	Consider comparison to other emissions, such as "annual emissions of x cars." One online tool that can help with comparison can be found here: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

Issue Category	Organization	Comment[1]
Air quality, Mitigation	USEPA	Include measures to mitigate GHG emissions Identify and include measures to avoid, reduce and minimize GHG emissions. Many air quality mitigation measures for criteria pollutants have the co-benefits of reducing GHGs. For the Juniper Project, practicable measures to reduce mobile sources could include: • Idling best management practices (BMPs) to limit truck and equipment idling on site, including strict enforcement of idling limits. At the same time, the practice will result in fuel savings. • Require advanced pollution controls and clean fuels for new equipment, and for older equipment to be retrofitted. Use particle traps and other appropriate controls to reduce emissions of DPM and other air pollutants. Traps control approximately 80 percent of DPM, and specialized catalytic converters (oxidation catalysts) control approximately 20 percent of DPM, 40 percent of carbon monoxide emissions, and 50 percent of hydrocarbon emissions. • Minimize construction-related trips of workers and equipment, including trucks and heavy equipment. • Lease or buy newer, cleaner equipment (1996 or newer model). • Employ periodic, unscheduled inspections to ensure that construction equipment is properly maintained at all times and does not unnecessarily idle, is tuned to manufacturer's specifications, and is not modified to increase horsepower except in accordance with established specifications. Design and operational elements that could minimize air pollutant emissions could include. • Use conveyors rather than haul trucks where possible, e.g., for transporting ore or placing materials • Incorporate alternative energy components into the project, such as on-site solar • Offer ride sharing or shuttle opportunities for mine employees commuting to the site from both nearby and distant communities. Consider estimating the emissions reduction from these measures. For unavoidable emissions, consider including project elements to offset carbon (carbon offsets) or the voluntary purchase of carbon offset credits.
Air quality, Mitigation	USEPA	***Assess Climate Risk and Incorporate Mitigation*** Describe the affected environment under Climate Change over the time period of the project's impacts. Include bracketing climate scenarios in describing the affected environment to explain the reasonably foreseeable effects of climate change in the area. Use the National Climate Assessment as an initial resource for identifying potential risks. See https://nca2018.globalchange.gov/. EPA's EnviroAtlas can also aid in identifying local climate change effects. See https://enviroatlas.epa.gov/enviroatlas/interactivemap/. Consider whether the proposal, its purpose and need, or alternatives may be affected by those changes. Consider the context of local vulnerability analyses, if available. Consider the interaction between impacts from the project and those due to climate change. Climate change can make the environment more susceptible to many types of impacts, which can exacerbate the impacts from the proposed project or alternatives. Incorporate practicable measures to address risks in the proposal's design or alternatives. Consider project design elements to make the project resilient to climate change effects on the project.

Issue Category	Organization	Comment[1]
Wildlife and special status species, Mitigation	USEPA	**Biological Resources** ***Sensitive, Threatened, and Endangered Species*** The BLM should work closely with the U.S. Fish and Wildlife Service, the Nevada Department of Wildlife, and the Nevada Division of Forestry to determine potential impacts of the project on species classified sensitive, threatened, or endangered on either federal or state Endangered Species Act lists, including Tiehm's buckwheat. Consider sharing survey information with the Nevada Division of Natural Heritage. We recommend the Draft EIS: • Identify all petitioned and listed, threatened and endangered species and critical habitat that might occur within the project area. Identify and quantify which species and/or critical habitat might be affected by each alternative and mitigate impacts to these species; place emphasis on the protection and recovery of species due to their status or potential status under the federal ESA and state protections. • Include general locations of rare or special status plants and disclose how these sites would be managed to avoid impacts on the plants. • Discuss the project's consistency with federal or state species' protections. • Summarize, or include as an appendix in the Draft EIS, the Biological Evaluation/Biological Assessment. Discuss mitigation measures to minimize impacts to special status species, describe the effectiveness of such measures to protect wildlife, and indicate how they would be implemented and enforced.
Threatened and Endangered Species	USEPA	***Tiehm's buckwheat*** Tiehm's buckwheat became listed and protected under the Endangered Species Act on January 17, 2023. The plan boundary includes all known populations of the plant including all 910 acres of critical habitat. To ensure that the project is fully protective of Tiehm's buckwheat, we recommend inspection and enforcement of any conditions included in the USFWS's biological opinion and applicant committed environmental protection measures. We recommend outlining an inspection and enforcement plan in Ioneer's Buckwheat Protection Plan and appending this document to the Draft EIS. Further, the USFWS final rule states that the plant's locations, including 1,640 ft (500 m) in all directions from them, is necessary for the conservation of Tiehm's buckwheat (p. 24). We recommend addressing these surrounding area requirements in the Draft EIS and Buckwheat Protection Plan, and how they are consistent with the "the proposed primary exclosure fence line [which] will range from 12 and 305 feet." Include a draft of Biological Evaluation/Assessment in the Draft EIS, or as an appendix, and identify and describe appropriate mitigation measures, specifying which ones would be committed to by the mine operator and/or required by the USFWS, the BLM, or another federal, state, or local agency.
Wildlife and special status species	USEPA	***Golden Eagles*** We recommend that the BLM coordinate with the USFWS to include a discussion of permits that may be needed under the Bald and Golden Eagle Act, if "incidental take" cannot be avoided. In the EIS, explain the permitting requirements under the Bald and Golden Eagle Protection Act and, if applicable, include a draft of the applicant's incidental take permit and Eagle Conservation Plan (ECP) reviewed by the USFWS. Assess risk of take and demonstrate how a project would comply with the Bald and Golden Eagle Protection Act.

Issue Category	Organization	Comment[1]
Wildlife and special status species, Mitigation	USEPA	If an ECP will be needed, we recommend that draft ECP and Draft EIS include the following: • A description of eagle population and habitats; • Avoidance and Minimization Measures (e.g., nest buffers, Avian Power Line Interaction Committee suggested practices, hazardous substance BMPs); • Assessment of direct take (morality) and indirect take (loss of productivity from disturbance, habitat loss, and potential for territory loss); • Quantification of all sources of take at all stages of the proposed mining project, including in the operational, closure, and post-closure stages; • Compensatory Mitigation; • Other Mitigation (e.g., if requesting nest removals); • Explanation of how the population and specific age classes are expected to benefit from the various types of compensation considered in the EIS and explain the compensation ratios used in determining the required compensation; • Monitoring (for impacts and effectiveness of mitigation); and • Adaptive Management (e.g., if monitoring or other information indicate risk is greater than expected, what steps would be implemented to evaluate and/or reduce impacts to remain in compliance with Eagle Act or authorized level of impacts or take). • If retrofitting power lines would be a part of the mitigation strategy, include an estimate of how many miles of the lines could be retrofired. Include maps of locations where retrofits would be expected to be performed in context with the territories and local populations expected to benefit from this mitigation.
Wildlife and special status species, Law and regulation	USEPA	***Other Wildlife Species*** Identify and quantify other wildlife species might be directly, indirectly, or cumulatively affected by each alternative and mitigate impacts to these species. Discuss the project's consistency with existing laws and regulations, including the Migratory Bird Treaty Act. To protect migratory birds, the EPA recommends that a qualified biologist conduct clearance survey following BLM's survey protocols no more than 14 days prior to surface disturbance. We also recommend restricting avian access to all process ponds by installing bird balls, floating pond covers, or another wildlife compatible methods, as determined in consultation with the Nevada Department of Wildlife (in addition to exclusionary fencing).
Vegetation	USEPA	***Invasive Species*** In Draft EIS, include measures that are consistent with Executive Order 13112 on Invasive Species. We suggest including any existing BLM direction for noxious weed management, a description of current conditions, and BMPs, which will be utilized to prevent, detect, and control invasives in the project area. Discuss measures that would be implemented to reduce the likelihood of introduction and spread of invasive species within the proposed project area. We encourage the BLM to promote integrated weed management, with prioritization of management techniques that focus on non-chemical treatments first, and mitigation to avoid herbicide transport to surface or ground waters. Early recognition and control of new infestations is critical to stop the spread of the infestation and avoid wider future use of herbicides, which could correspondingly have more adverse impacts.

Issue Category	Organization	Comment[1]
Reclamation	USEPA	**Mine Reclamation, Closure and Post-Closure** The EPA recommends the Draft EIS analysis describe in detail the reclamation, closure and post-closure management of the proposed project, including the following: • A detailed account of measures that would be taken to decommission mine operations and stabilize and revegetate slopes, waste rock facilities, roads and other areas; • Identification (including estimated acreage) of the areas targeted for reclamation, and description of the intended degree of treatment in each area; • Timing of reclamation relative to mining operations, procedures for concurrent reclamation activities, and duration of reclamation treatment; • Standards for determining, and means of assuring, reclamation success; and • Means of assuring that all maintenance required for reclaimed areas would continue after operations cease or while operations are suspended.
Reclamation	USEPA	Spent Ore Storage Facility Describe the reclamation and closure of the Spent Ore Storage Facility (SOSF), including capping/covers, draindown facilities, chemistry and fate of drain down fluids, and projected drain down times. The Draft EIS should assess the effectiveness of various cap/cover systems in reducing meteoric water flow through the spent ore. Discuss in detail how draindown fluids from the facilities would be captured, treated and controlled over the closure and post-closure period. Include a description of the capacity of evapotranspiration (ET) cells, the likelihood that this capacity will be sufficient, and the contingency in the event of ET cell overflow. Discuss the implementation, performance, and effectiveness monitoring, and follow up actions that would be taken should destabilization or leaks be detected.
Reclamation	USEPA	Quarry Pit Describe the expected pit lake's water quality over time through comparison with the Nevada Department of Environmental Protection reference levels and a description of ecological risk. For each alternative, discuss if treatment would be necessary to meet standards/reference levels or to reduce ecological risk. Provide a description of the infrastructure and material quantities that would be needed and for how long. EPA acknowledges that there is substantial uncertainty inherent in future pit lake water quality modeling. Regardless of whether treatment requirements are expected at this time, describe monitoring that would be required by the BLM and/or NDEP, and the thresholds for treatment actions based on Constituents of Potential Ecological Concern identified during the modeling to date and/or modeled constituents' concentrations sensitive to water quality and ecological risk assumptions. Identify and use monitoring thresholds based on trends in water quality monitoring which would trigger treatment or other mitigation actions that can be implemented proactively to avoid unnecessary, yet foreseeable, temporary impacts. Discuss specific uncertainties for the current groundwater and pit lake model, as well as information that could reduce uncertainty and how it might be gathered to update the model during operations, closure, and post-closure.
Reclamation	USEPA	Overburden Storage Facilities Include the Overburden Management Plan, or an appropriate summary, that describes how overburden (i.e., waste rock) will be characterized, handled, and disposed. Describe procedures for water quality monitoring and reporting as well as monitoring the functioning of the facilities in controlling contact between overburden and surface or meteoric water (e.g., maintenance of run on/runoff channels, underdrains, and collection areas; ponding; etc.). Describe the BLM's implementation monitoring procedures and enforcement mechanisms should the mine operator fail to properly follow the plan. Describe all closure and post-closure activities associated with the overburden. Describe implementation, performance, and effectiveness monitoring, and follow-up actions that would be taken if destabilization or contamination are detected.
Reclamation, Vegetation	USEPA	***Growth Media and Covers*** Reclamation and closure of the spent ore storage facility, overburden storage facility, and other facilities typically involves placing growth media over rock material to provide cover for the purpose of reducing infiltration of meteoric water. Describe the availability, properties, and sources of cover material and/or growth media, discuss how it would be applied to disturbed areas, and identify any additional measures (e.g., soil amendments) that may be needed to ensure successful reclamation and revegetation of the project site.

Issue Category	Organization	Comment[1]
Reclamation, Vegetation	USEPA	Describe the cover design in detail with supporting data to demonstrate anticipated effectiveness. Identify the permeability standard that growth media or other cover material would be designed to achieve, provide the basis for infiltration rates and cover/growth media thickness estimates, and discuss their effectiveness in minimizing exposure of mined material, or operational waters to meteoric water that could mobilize contaminants.
Reclamation, Vegetation	USEPA	***Revegetation*** The EPA recommends that revegetation be accomplished with native species, sourced from the site before disturbance, to restore the ecosystem to as natural a state as possible after mine closure. We also recommend that revegetation success be monitored and enforced for at least five years following revegetation efforts of each reclamation phase.
Reclamation, Financial assurances	USEPA	***Reclamation and Closure Bonding*** The viability of the reclamation/closure bond can be an important factor in whether a project is environmentally acceptable. As such, we recommend the Draft EIS sufficiently describe the reclamation bonding requirements and amounts for the proposed project and alternatives. Discuss how the BLM could modify the bond during operations if temporary, long-term, or perpetual treatment and/or remediation needs are discovered. Describe bonding requirements and other measures that the BLM and State regulators have in place to ensure funds would be immediately available if the mine operator or its insurer be unable to fund the required reclamation or closure activities.
Reclamation, Financial assurances	USEPA	***Long-Term Management and Financial Assurance*** If long-term management is found to be unavoidable, the EIS should describe all necessary long-term monitoring and management of the mine, as well as the enforcement mechanisms by either BLM or other regulators should the mine operator fail to properly follow the long-term post-closure plan. The EIS should describe the time frame over which long-term management activities would occur or if they might be necessary into perpetuity.
Reclamation, Financial assurances	USEPA	Include projected costs for any post-closure activities and discuss whether the BLM would impose on the mine operator a requirement to establish a trust fund or other funding mechanism to ensure post-closure care, in accordance with 43 CFR 3809 and BLM's H-3809-1 Surface Management Handbook. Explain those areas of the mine, and activities within the overall mine, that would or would not be considered under these regulations and policies.
Reclamation, Financial assurances, Water resources	USEPA	Describe any long-term water management that may be needed at the mine after mine closure, including any lands not managed by the BLM. If a long-term funding mechanism is deemed necessary, EPA recommends that the Draft EIS include a description of the proposed funding mechanism. Any financial assurance must be kept current as conditions change at the mine. The terms of the fund are critical to determining whether sufficient funds would be available to implement the post-closure plan and reduce the possibility of long-term contamination problems. We recommend that the discussion include the following information: • Requirements for timing of payments into the trust fund; • How to ensure the trust fund would be bankruptcy remote; • Acceptable financial instruments; • Tax status of the trust fund; • Identity of the trust fund beneficiaries; and • Identity of the operator with responsibility/liability for financial assurance at this site. This information would be essential to include in the Draft EIS if the potential impacts of the project would necessitate a long-term trust fund; such information could make the difference between a project sufficiently managed over the long-term by the site operator, or an unfunded/under-funded contaminated site that becomes a liability for taxpayers.

Issue Category	Organization	Comment[1]
Socioeconomics and environmental justice, NEPA analysis	USEPA	**Environmental Justice** Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (February 16, 1994), directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations. It further directs agencies to develop a strategy for implementing environmental justice and providing minority and low-income communities access to public information and public participation. As such, we recommend that the BLM address adverse environmental effects of the proposed project on these communities and outline measures to mitigate for impacts. "Promising Practices for Environmental Justice Methodologies in NEPA Reviews"[5] may also serve as a useful resource during the environmental review process. This document is a compilation of methodologies from current agency practices identified by the NEPA Committee of the Federal Interagency Working Group on Environmental Justice. The document focuses on the interface of Environmental Justice considerations through NEPA processes and provides recommendations on applying Environmental Justice methodologies that have been established in federal NEPA practice. We encourage the BLM to use EPA's EJSCREEN and/or the most recent American Community Survey from the U.S. Census Bureau for the Draft EIS to determine the presence of minority and low-income populations. However, it is important to note that minority and low-income can be measures in various ways. A minority population does not need to meet a 50 percent standard if "the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis."[6] To best illustrate the presence of a minority population, we recommend that the BLM analyze block groups, the smallest geographical unit for which the U.S. Census Bureau publishes data. We caution using larger tracts in the analysis, such as counties or cities, as these may dilute the presence of minority populations. The NEPA Committee of the Federal Interagency Working Group on Environmental Justice has noted that, in some cases, it may be appropriate to use a threshold for identifying low-income populations that exceeds the poverty level.[7] [5]Federal Interagency Working Group on Environmental Justice & NEPA Committee. Promising Practices for EJ Methodologies in NEPA Reviews. March 2016. Available at: https://www.epa.gov/sites/production/files/2016-08/documents/nepa_promising_practices_document_2016.pdf. [6]Council on Environmental Quality. Environmental Justice: Guidance Under the National Environmental Policy At. December 1997. Available at https://www.epa.gov/sites/production/files/2015-02/documents/ej_guidance_nepa_ceq1297.pdf [7]Federal Interagency Working Group on Environmental Justice & NEPA Committee. Promising Practices for EJ Methodologies in NEPA Reviews. March 2016. Available at: https://www.epa.gov/sites/production/files/2016-08/documents/nepa_promising_practices_document_2016.pdf.

Issue Category	Organization	Comment[1]
Socioeconomics and environmental justice, NEPA analysis	USEPA	After the BLM has determined if minority and low-income populations exist in the project area, we recommend that the Draft EIS discuss whether these communities would be potentially affected by individual or cumulative actions of the proposed action. We also recommend addressing whether any of the alternatives would cause any disproportionate and high adverse impacts, such as higher exposure to toxins; changes in existing ecological, cultural, economic, or social resources or access; cumulative or multiple adverse exposures from environmental hazards; or community disruption. Specify whether the Draft EIS meets requirements of the U.S. Department of the Interior Environmental Justice Strategic Plan.[8] If it is determined that minority and low-income populations may be disproportionately impacted, describe in the Draft EIS the measures taken by the BLM to fully analyze the environmental effects of the action on minority communities and low-income populations and identify potential mitigation measures. Clearly identify a monitoring and adaptive management plan to ensure that mitigation is effective and successful. [8]U.S. Department of the Interior. November 2016. Environmental Justice Strategic Plan. https://www.doi.gov/sites/doi.gov/files/uploads/doi_ej_strategic_plan_final_nov2016.pdf.
Socioeconomics and environmental justice, Public involvement	USEPA	Present opportunities for affected communities to provide input into the NEPA process. In the Draft EIS, include information describing what was done to inform these communities about the project and the potential impacts it will have on their communities (e.g., notices, mailings, fact sheets, briefings, presentations, translations, newsletters, reports, community interviews, surveys, canvassing, telephone hotlines, question and answer sessions, stakeholder meetings, and on-scene information), what input was received from the communities, and how that input was utilized in the decisions that were made regarding the project.
Socioeconomics and environmental justice	USEPA	**Socioeconomics** The project may be a source of employment for those living within Esmeralda County. Consider hiring practices and training programs that could benefit disadvantaged populations (e.g., jobs, direct and indirect economic benefits, etc.), and discuss those who may be disproportionally affected by the closure of the proposed project.
Native American concerns and consultation	USEPA	**Consultation with Tribal Governments** It is important that formal government-to-government consultation take place early in the scoping phase of the project to ensure that all issues are adequately addressed in the Draft EIS. We recommend that the EIS discuss the BLM's (and other agencies with decisions on the project) consultation with all Native American tribal governments that could be potentially affected by the proposed project or may have resources (e.g., traditional cultural properties, groundwater resources) that could be affected. The principles for interactions with tribal governments are outlined in the presidential Memorandum on Government-to Government Relations with Native American Tribal Governments (April 29, 1994), Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (November 6, 2000), and the recent "Memorandum on Uniform Standards for Tribal Consultation"[9] (November 30, 2022). In the Draft EIS, summarize the results of tribal consultation and identify the main concerns expressed by tribes and how those concerns were addressed. As a resource, we recommend the document Tribal Consultation: Best Practices in Historic Preservation,[10] published by the National Association of Tribal Historic Preservation Officers. In addition, the Advisory Council on Historic Preservation (ACHP) considers that "[c]onsultation is more than simply notifying an Indian tribe about a planned undertaking."[11] While consultation should begin with a formal letter, the ACHP advises that "[f]ace-to-face meetings or on-site visits may be the most practical way to conduct consultation." If the BLM needs assistance with consultation or updated tribal contacts, EPA Region 9 has a robust tribal program. [9] https://www.whitehouse.gov/briefing-room/presidential-actions/2022/11/30/memorandum-on-uniform-standards-for-tribal-consultation/ [10] National Association of Tribal Historic Preservation Officers. May 2005. Tribal Consultation: Best Practices in Historic Preservation. Available at http://www.nathpo.org/PDF/Tribal_Consultation.pdf. [11] Advisory Council on Historic Preservation. June 2021. Consultation with Indian Tribes in the Section 106 Review Process: The Handbook. Available at https://www.achp.gov/sites/default/files/2021-06/ConsultationwithIndianTribesHandbook6-11-21Final.pdf.

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Native American concerns and consultation, Cultural resources, Mitigation	USEPA	**National Historic Preservation Act** Consultation for tribal cultural resources is required under Section 106 of the National Historic Preservation Act. Historic properties under the NHPA are properties that are included in the National Register of Historic Places or that meet the criteria for the NRHP. Section 106 of the NHPA requires a federal agency, upon determining that activities under its control could affect historic properties, to consult with the appropriate State Historic Preservation Office/Tribal Historic Preservation Office. Under NEPA, any impacts to tribal, cultural, or other treaty resources must be disclosed in the Draft EIS. Section 106 of the NHPA requires that federal agencies consider the effects of their actions on cultural resources, following the regulation at 36 CFR 800. In the Draft EIS, discuss how the BLM would avoid or minimize adverse effects on the physical integrity, accessibility, or use of cultural resources or archaeological sites, including traditional cultural properties, throughout the project area. Clearly discuss mitigation measures for archaeological sites and TCPs. We encourage BLM to append any Memoranda of Agreements to the Draft EIS, after redacting specific information about these sites that is sensitive and protected under Section 304 of the NHPA. We also recommend providing a summary of all coordination with Tribes and with the State and Tribal Historic Preservation Offices, including identification of NRHP eligible sites and development of a Cultural Resource Management Plan.
Cultural resources, Native American concerns and consultation, Mitigation	USEPA	**Executive Order 13007** Executive Order 13007, "Indian Sacred Sites" (May 24, 1996), requires federal land managing agencies to accommodate access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners, and to avoid adversely affecting the physical integrity, accessibility, or use of sacred sites. It is important to note that a sacred site may not meet the NRHP criteria for a historic property and that, conversely, a historic property may not meet the criteria for a sacred site. It is also important to note that sacred sites may not be identified solely in consulting with tribes located within geographic proximity of the project. Tribes located outside the direct impact area the plan area may also have religiously significant ties to lands within the plan area and should be included in the consultation process. In the Draft EIS, address the existence of Indian sacred sites in the project area, including seeps and springs, that may be considered spiritual sites by regional tribal nations. Discuss how the BLM would ensure that the proposed action would avoid or mitigate for the impacts to the physical integrity, accessibility, or use of sacred sites.
Cultural resources, impacts, Alternatives, NEPA analysis	USEPA	**Traditional Ecological Knowledge** We recommend the identification, inclusion, and integration of traditional ecological knowledge into the EIS analysis, as appropriate. Such anthropological work can include the collection of local and traditional knowledge concerning the affected environment, anticipated impacts from the project, and traditional hunting and land use patterns in the area. We recommend that, in addition to reviewing any pertinent traditional ecological knowledge currently available, additional studies be conducted as necessary to clearly identify concerns and potential impacts, including cumulative impacts, from the proposed project and project alternatives. This information should be reviewed and included in the EIS to the extent possible and utilized in the analysis of potential impacts.

[1]The text of comments is presented as received by the BLM in each comment letter.