

## **Appendix D: Alternatives Considered but Eliminated**

**Table D-1 Rhyolite Ridge Lithium-Boron Project Preliminary Alternatives and Screening Criteria**

Group	Preliminary Alternatives	Consistent with Purpose and Need	Technically Practical and Feasible	Environmentally Reasonable	Economically Practical and Feasible	Alternative to Be Considered for Detailed Study in EIS?
Alternatives Considered for Detailed Analysis						
Alternative A – Proposed Action		Yes	Yes	Yes	Yes	Yes
Alternative B – North and South OSF Alternative		Yes	Yes	Yes	Yes	Yes
Alternative C – No Action Alternative		The No Action Alternative is required to be evaluated per CEQ regulations.				Yes
Alternatives Considered but Dismissed from Detailed Analysis						
Quarry Footprint Alternatives	Larger Quarry	Yes	No	No	Not Evaluated	No
	Quarry North of Cave Springs Road	No	Yes	No	Not Evaluated	No
	Quarry Avoids All Tiehm’s Buckwheat Designated Critical Habitat	No	Yes	Yes	No	No
	Quarry Avoids All Tiehm’s Buckwheat Subpopulations	Yes	Yes	Yes	Yes	This has been incorporated in the Proposed Action
	Quarry Depth Avoids Groundwater Interception	No	No	Yes	No	No
Quarry Backfill/Infill Alternatives	In-Quarry Base Case Storage	Yes	No	No	Not Evaluated	No
	In-Quarry Alternative Storage	Yes	No	No	Not Evaluated	No
	Partial Backfill to Prevent Post-quarrying Quarry Lake	Yes	Yes	Yes (prevent post Project quarry lake); No (potential for groundwater quality issues from flow-through)	No	No
	Backfill of Quarry to Create Post-quarrying Flow-through Conditions	Yes	No (NDEP would not permit flow-through)	No	No	No
	Rapid Infilling of the Post-quarrying Quarry with Water.	Yes	Yes	No	Not Evaluated	No

Group	Preliminary Alternatives	Consistent with Purpose and Need	Technically Practical and Feasible	Environmentally Reasonable	Economically Practical and Feasible	Alternative to Be Considered for Detailed Study in EIS?
Facilities Placement Alternatives	Adit Avoidance Alternative	Yes	Yes	No	Yes	No
	Moving Crushing Plant and Truck Facilities East closer to the Quarry	Yes	Yes	No	Not Evaluated	No
	Separate Stockpiles North-Northwest of the Quarry	Yes	Yes	No	Not Evaluated	No
	North OSF	Yes	Yes	Yes	Yes	This has been incorporated in the North and South OSF Alternative.
	Reduced Quarry Plan	Yes	Yes	No	Yes	No
	North and Southwest OSF	Yes	Yes	Yes	Yes	This has been incorporated in the North and South OSF Alternative.
	Comingled Stockpile West of the Quarry	Yes	Yes	No	Not Evaluated	No
	Processing Plant in Sparks, Nevada	Yes	Yes	No	No	No
	Spent Ore Storage, Separate Facilities at Siting Area 1 (South of Cave Springs Road)	Yes	Yes	No	Not Evaluated	No
	Spent Ore Storage, Comingled Facility at Siting Area 2 (North of Cave Springs Road)	Yes	Yes	No	Not Evaluated	No
	Cultural Resource Site Avoidance	Yes	Yes	Yes	Yes	This has been incorporated in the Proposed Action
	Surface Disturbance Avoids All Tiehm's Buckwheat Designated Critical Habitat	No	No	Yes	No	No
	Surface Disturbance Avoids All Tiehm's Buckwheat Designated Critical Habitat and its One Mile Buffer	No	No	Yes	No	No
Ore Conveyance Alternatives	Conveyor	Yes	No	No	Not Evaluated	No
	Autonomous Haul Trucks	Yes	Yes	Yes	Yes	This has been included in the Proposed Action
	Electric Vehicle (EV) Fleet	Yes	No	Not Evaluated	Not Evaluated	No

Group	Preliminary Alternatives	Consistent with Purpose and Need	Technically Practical and Feasible	Environmentally Reasonable	Economically Practical and Feasible	Alternative to Be Considered for Detailed Study in EIS?
Sulfuric Acid Plant Design Alternatives	Importing Sulfuric Acid (vs having a Sulfuric Acid Plant on site)	Yes	Yes	No	Not Evaluated	No
	Single absorption with a tail gas scrubber (with caustic reagent)	Yes	Yes	No	Not Evaluated	No
	Single absorption with MAX3™ (with solvent scrubber)	Yes	Yes	No	Not Evaluated	No
	Double absorption with heat recovery system and tail gas scrubber (with caustic reagent)	Yes	Yes	No	Not Evaluated	No
Leaching Alternatives	Heap Leach Facility	Yes	Yes	No	Not Evaluated	No
	Agitated Tank Tailings Storage Facility	Yes	Yes	No	Not Evaluated	No
Power Supply and Infrastructure Alternatives	55 kV and 120 kV Transmission Line and a 15 MW Service from NV Energy	Yes	Yes	No	Not Evaluated	No
	15 MW Prime Power Diesel Generation	Yes	Yes	No	Not Evaluated	No
	Grid Connection	Yes	Yes	No	Not Evaluated	No
	Diesel Internal Combustion Engine Alternative	Yes	Yes	No	Not Evaluated	No
	Natural Gas	Yes	Yes	No	Not Evaluated	No
	CNG/LNG/Propane Fuel	Yes	Yes	No	Not Evaluated	No
Aggregate Sourcing Alternatives	Near-Site Source	Yes	No	Not Evaluated	Not Evaluated	No
	Existing Commercial Sources	Yes	Yes	Yes	Yes	No – Under 40 CFR 1501.9, this is not considered a connected action.



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Haul Road From Quarry Road Alignment and Traffic Control Alternatives	Utilize Existing Road Where Possible	Yes	No	No	Not Evaluated	No
	Maximize Road Separation	Yes	Yes	Yes	Yes	This has been incorporated in the Proposed Action
	Overpass to Avoid Intersection	Yes	No	No	Not Evaluated	No
	Re-Route Road North of Processing Plant to Avoid Intersection	Yes	Yes	No	Not Evaluated	No
	Four-Way Stop	Yes	Yes	No	Not Evaluated	No
	Manned Guard Booth	Yes	Yes	Yes	Yes	This has been incorporated in the Proposed Action
Access Road Alternatives	Slowing of Quarrying Rate	Yes	No	No	Not Evaluated	No
	Silver Peak Access Road	Yes	No	Not Evaluated	Not Evaluated	No
	Gap Springs Access Road	Yes	Yes	No	Not Evaluated	No
	Alternate Adjacent Access Road	Yes	Yes	No	Not Evaluated	No
	Partial Paving	Yes	Yes	No	No	No
	Group Lithium-Boron trucks in Units From Mine Site (compared to free flow)	Yes	Yes	No	Not Evaluated	No
	Conveyor vs Truck Traffic	Yes	No	No	Not Evaluated	No
	Traffic Control Devices to Manage Traffic	Yes	Yes	Yes	Yes	This has been incorporated in the Proposed Action
	Cave Springs Road Revised Reroute Alternative	Yes	No	No	No	No
Water Use Alternatives	Pumping from Fish Lake Valley	Yes	No	No	Not Evaluated	No
Mine Law	Permit the Project Under 2920 Regulations	No	Not Evaluated	Not Evaluated	Not Evaluated	No