Silver Peak Lithium Mine
Developer: Albemarle Corporation
Location: Esmeralda County, Nevada
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Background
Opening in 1864, the Silver Peak Mine was initially a silver mine. However, a century later, miners discovered lithium in the water and it was in this way that the Silver Peak Mine became the lithium mine that we know currently. Today, the Silver Peak Mine produces 3,500 metric tons of lithium carbonate per year with the capacity to produce 6,000. The mine, after many changes in ownership, is now owned by Albemarle Corporation, a mining company based in Charlottesville, NC that is one of four global mining conglomerates that control the majority of the world’s lithium supply. The mine employs 80 full time workers and about 20 more contractors.

In 2010, the then owner of the Silver Peak Mine, Rockwood Lithium, announced a doubling of their capacity. This expansion was made possible in part by a $28.4 million grant from the US Department of Energy with the expressed purpose to “expand and upgrade the production of lithium materials for advanced transportation batteries.” Albemarle believes that the Silver Creek expansion is an ‘investment’ into Esmeralda County. (Albemarle, 2016)

The word “mine” is a bit misleading when referring to Silver Peak. This operation is not extracting rock or ore from the ground to be processed. Rather the “mine” withdraws subsurface brine from an old lake bed that is then evaporated in large, shallow ponds to expose the lithium. These evaporation ponds take up thousands of acres and 12 to 18 months of evaporation are required before the lithium is concentrated enough for offsite factory processing (Walker, 2017).

The mine receives its name from the town nearest to it, Silver Peak. Silver Peak is just four miles away from the mine and is 215 miles northwest of Las Vegas. As of 2010, only 107 people resided in the town. Founded in 1863 as an outpost for silver and gold miners, Silver Peak is one of Nevada’s oldest mining communities. The Environmental Assessment for the mine’s proposed expansion describes the area around Silver Peak as “sparsely populated with between 0 to 40 people per square mile, within at least an 80-mile radius...” (DOE, 2010)

Policy Context
The Silver Peak Mine is a part of a growing lithium industry that produced 175,000 metric tons of lithium carbonate in 2015 globally. According to Cormark Securities, global lithium consumption is projected to increase 100% by 2020. This increase in demand and consumption is mainly due to use of lithium-ion batteries for electric and hybrid vehicles. Citi Research reports that the global market for lithium-ion batteries in 2015 was $24 billion, and is predicted to be $40 billion by 2020 (Fehrenbacher, 2016).

The expansion of the Silver Peak Mine is connected to the construction of the “Gigafactory,” a $5 billion lithium-ion battery factory co-owned by the electric vehicle-manufacturer, Tesla, and Japanese technology giant, Panasonic. The gigafactory is currently being built only three and a half hours away from the Silver Peak Mine near the town Sparks. The goal of the Gigafactory is to vertically integrate the battery-making process in order to cut down on costs. This means that the
Gigafactory will take raw materials, such as lithium, nickel and cobalt, and turn them into batteries, all under one roof. Once completed and operating at full capacity the gigafactory will be able to turn 15,000-25,000 tons of lithium carbonate into lithium ion-batteries every year. That is 17% of current global lithium output. Batteries produced in the factory will be installed in Tesla’s electric vehicles as well as in a product that Tesla calls the “PowerPack” which is used to charge Tesla vehicles. Silver Peak Mine’s proximity to the Gigafactory makes it an attractive potential supplier to Tesla and Panasonic (Nanalyze, 2015).

The Silver Peak Mine expansion has the support of state-level policymakers. Brian Sandoval, the current Governor of Nevada has said that “[t]he key to growing our mining industry is the continued opposition to restrictive federal rules related to public lands.” The Governor would like President Trump to ease regulations for mining companies so that they might more easily develop more mines. Additionally, early in 2017, State Senator Pat Spearman and State Assemblyman Jim Wheeler began drafting legislation that would promote the development of lithium mining in Nevada by removing sales taxes on equipment needed for lithium exploration and development within the state (Walker, 2017).

Public Response and EA Process

The Environmental Assessment process concluded in 2010 with a Finding of No Significant Impact statement released by the Department of Energy (DOE, Sept 2010). Since the mine was already in operation, the approval process for the expansion was relatively easy and simple. The largest consideration seemed to be potential harm to migratory waterfowl, which can be harmed or killed by the high-concentration brine in the evaporation ponds. The expansion would require more evaporation ponds meaning that there is an increased risk of birds landing in the ponds (DOE, 2010).

There appears to have been little to no public opposition to the proposed expansion of the Silver Peak mine. This could be due to two different reasons. First, the opportunities for public response to the expansion might not have been easily accessible to the public, resulting in low participation. Second, and perhaps more likely, is that the residents of the Silver Peak area are in support of the mine and felt no reason to participate in any opportunities for public response. Silver Peak’s entire existence has been centered around mining in the region. It is no coincidence that the mine and town share the same name. In 2017, the mine’s Plant Manager, John Mayes, stated that the operation is “pretty important” to Silver Peak because of all the jobs that it provides to the small town (Nelson, 2017). It is likely that the expansion of the Silver Peak was a welcome development for the small town.

Conclusion

The rise of electric vehicles and the construction of Tesla and Panasonic’s Gigafactory has given the Silver Peak Mine new life. The mine has the general favorability of global markets as well as local and state politics. Lithium mining at the Silver Peak Mine is contributing to a transition to a world with more sustainable energy, however the mine is still inherently degrading the surrounding environment. Rather than being an open-pit mine or one that is associated with radioactive thorium production like other REE mines, the Silver Peak Mine requires tremendous amounts of land for evaporation ponds, which also are toxic to plants and wildlife in the area. Although the environmental impacts may differ, the Silver Peak Mine should adhere to the same environmental rigor applied to every other REE mine.
Works Cited


Photo Sources
1http://www.lithium-x.com/clayton_valley/