September 13, 2020

Ken Loda
Bureau of Land Management
Winnemucca District
5100 E. Winnemucca Blvd.
Winnemucca, Nevada 89445

Re: DEIS Comments: Thacker Pass Plan of Operations and Reclamation Plan (BLM Casefile NVN-098586) and the Thacker North-South Exploration Plan of Operations and Reclamation Plan (NVN-098582)

Dear Mr. Loda

Great Basin Resource Watch (GBRW), and the Progressive Leadership Alliance of Nevada (PLAN) submits the following comments and attached documents for the proposed thacker Pass Lithium Mine. We also incorporate in these comments by reference the DEIS comments of Western Watersheds Project.

Public Engagement Process

The public engagement process around Thacker Pass must more adequately align with the National Environmental Policy Act (NEPA) than it has so far, and more time must be allotted to ensure the public is able to properly understand the proposed actions and have their concerns fully taken into account. A more thorough and transparent public engagement process is needed, particularly considering the local community’s many articulated concerns and mistrust, as well as the fact that a great deal of the public process has occurred under extenuating circumstances of the pandemic. In addition, community members are currently still waiting for requested documents. The comment period must be extended due to the fact that these community members have still not been given access to the information they need in order to make meaningful comments at the DEIS stage.

The Bureau of Land Management (BLM) needs to address the problematic nature of streamlining a project in the midst of a pandemic where there is no clear community consent or an adequate means of engaging the public virtually to obtain it. Adequate public engagement should be prioritized and the community adequately met, consistent with the spirit of NEPA, in the unique challenges presented by the pandemic. Increased measures should be taken currently to address
the challenges presented by the pandemic to ensure that the community is able to understand and engage with the project still. However, there were intentionally less measures taken to ensure this during the Thacker Pass DEIS virtual meeting. For example, there were no resource specialists at the August 9th, 2020, meeting. It was also stated during this virtual meeting that “in this format, we’re hoping not to get into that,” and that “we can’t get into the specifics today in this [virtual] format.” The virtual format should not be used as a justification for eliminating typical components of the public engagement project, and instead, extra means of engaging the public should be incorporated into the virtual process to compensate for the inability to meet in person. To sufficiently add these components and meet the spirit of NEPA, more time should be devoted to the permitting process, not less. Lithium Nevada’s plan for an expedited permitting for Thacker Pass needs to be critically evaluated in light of this, and the comment deadline for the Draft Environmental Impact Statement (DEIS) needs to be extended at least through the end of September.

The Structure of the DEIS makes Review Onerous
The “streamlining” process the BLM has used to craft the DEIS does a disservice to the public. The main body of the DEIS (Chapters 1-6) does not describe the project and its consequences, and how negative effects of the project are to be mitigated sufficiently. Therefore, it is necessary to review all the appendices as well. It is far more efficient for anyone reviewing the DEIS to be able to see all aspects in the same section of the document. By splitting out key aspects the reader is constantly going between various documents in a cumbersome process that actually requires more time. This conspires with the shorter timeframe to review (45 days is an absurdly short period of time for a new and complex mine plan) the DEIS to seriously undermine the ability of the public and in particular the affected community to fully understand and comment on the consequences of the proposed mine. BLM needs to return to its previous approach to the structure of the DEIS, which is more self contained and actually simpler for the public to review.

The Review Period for the DEIS was Much too Short
GBRW/BRW/PLAN has requested a delay in the release of the DEIS, which did occur, but we also asked for a much longer period. We never received a response to the request dated May 2020. Many the affected community struggled to fully review the DEIS and requested comment period extensions as well. In addition requested additional information was slow to be honored and there is still outstanding information. It is clear that this administration does not care about the people in the community that will host this mine. As a result people continue lose respect for federal agencies as BLM, which further erodes the NEPA process. Ultimately, the behavior of the agency sets up a dynamic that fosters distrust and often results in increasing litigation, which ironically is in opposition to the goal of the administration to see mines permitted faster.

Purpose and Need
As stated in the DEIS:

“The purpose of the action is to approve a LNC’s proposed MPO to construct and operate a lithium mine, lithium processing plant, and related facilities reasonably incident to mining operations on public lands within the Project area. The need for the Proposed Action is established by the BLM’s responsibility under the Federal Land Policy and Management Act of 1976 (FLPMA) and the BLM’s Surface Management Regulations at 43 CFR 3809 to ensure that operations under the Mining Law of 1872 prevent unnecessary or undue degradation.”

(DEIS p 1-3)

This is incorrect. BLM’s Purpose is to respond to LNC’s submittal of a proposed Plan of Operations for the Thacker Pass Lithium Mine by determining whether BLM can approve it in its current form and still meet BLM’s obligations under federal laws and regulations. By describing
BLM’s purpose solely as approving the mine, the DEIS omits BLM’s obligations to protect wildlife, habitat, and scenic landscape.

Under NEPA, the BLM is required to CONSIDER a No Action Alternative. The DEIS has been written to review a full range of proposed alternatives including No Action. Writing that the purpose is to “approve” the project at this stage predetermines the outcome. A new Purpose and Need Statement should be written that is not so biased to the applicant.

1.3.1 Decision To Be Made by the BLM: “The BLM will decide whether the proposed Mine and Exploration Plans cause unnecessary or undue degradation and, consequently, whether to approve the Plans as proposed, approve with modifications, or deny the proposed Plans.” (DEIS p 1-4)

**Water Quantity Aspects**

1. Mining water availability is highly uncertain

Assess to water for the project is unresolved in the DEIS. There will be considerable water extraction with a consumptive use of 2,600 AF per year during Phase 1, and 5,200 AF per year during Phase 2. According to the DEIS Lithium Nevada Corporation (LNC) has 980 AFA (acre-feet annual) water rights and an option to purchase an additional 2,717 AFA. It is not clear how certain the option is and there is no discussion of what is the meaning of the “option to allow” for the public to evaluate the certainty of access to the 2,717 AFA. There is also no discussion of how the project is to acquire the additional, 1,503 AFA annual for Phase II assuming that the 2,717 AFA is obtained. This leaves the possibility that Phase II may not proceed as planned or at all if the water rights are not obtained. Given this uncertainty, BLM must in the Final EIS (FEIS) analyze the affect of the project becoming stalled due to lack of sufficient water for Phase II, and have a plan for reclamation assuming the project becomes indefinitely stalled. BLM must in the FEIS require LNC to show how the additional water is to be obtained.

BLM needs to consider that the source of water for the mine, Quinn River Valley Oravada hydrographic basin, is already over allocated as stated in the DEIS, “The Orovada Subarea is currently overallocated by approximately 30,271 AFA” (DEIS p 2-12). Thus, water extraction is hovering near the maximum sustainable volume in the basin. BLM needs to evaluate the increased consumptive water use with respect to a basin at or near its perennial yield. Keeping in mind that perennial yields are also and estimate it would be prudent to avoid water use right up to the perennial yield.

According to the Plan of Operations (PoO)\(^1\) Lithium Nevada acquired water rights totaling 995.5 acre-feet annual (AFA). Of this only 15.5 are for mining and milling. The PoO also mentions an option to acquire an additional 2,717 AFA. Thus, Lithium Nevada is anticipating that there will be sufficient water rights to develop Phase 1 assuming that the unsecured rights are not protested. Phase 2 of the PoO requires an additional 2,600 AFA, for which no option to acquire is mentioned. BLM needs to evaluate the possibility that the additional water rights are not available for Phase 2 and any environmental or socioeconomic consequences that may occur if Lithium Nevada has to suspend operations or close operations? BLM, should determine the needed bond in the case that Phase 2 is not implemented and the company abandons the site at that point.

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2. **DEIS Unreasonably Only Considers the Ten-foot Drawdown**

The DEIS provided no justification for the following, “EIS analysis conservatively assumes that there is a potential risk that drawdown associated with the mine could reduce baseflow to perennial springs located within (or within one mile of) the maximum extent of the 10-foot drawdown contour” (DEIS 4-10). The effects of drawdown on surface water resources are commonly shown as a risk to resources within a certain drawdown. In this DEIS, that is the ten-foot drawdown. Once the water table is drawn beneath a surface water resource dependent on the water table, it does not affect the surface resource any more to draw the water table down further. Therefore, it is reasonable to consider that a small drawdown can affect surface resources. A spring or seep that depends on the water table will go dry if the water table drops below that intersection of the water table with the surface. Therefore, it is unreasonable for the DEIS to only consider the ten-foot drawdown for its consideration of effects (Figures 4.3-3 to 4.3-21, Appendix A, DEIS); a spring is just as dry for a one-foot drawdown as for a ten-foot drawdown. Additionally, the discharge from a spring would be reduced if the gradient controlling the discharge reduces without regard to there being any actual drawdown at the spring.

The one-mile buffer zone around the 10-foot drawdown is meaningless without knowing what drawdown occurs in that area. The DEIS only states, “The 1-mile buffer was selected based on review of the hydrographs showing the simulated changes in groundwater elevation at spring locations located outside the 10-foot drawdown contour (Appendix E, Piteau 2020a).” (DEIS 4-8). Appendix E is not provided by BLM for analysis. There is no discussion of how the threshold for changes in groundwater elevation. Review of this approach is not possible and the effectiveness of the use of the one-mile buffer zone is impossible to determine including in mitigation analysis.

Many other EISs for mining projects have used a much lower drawdown for the consideration of impacts. The following is a small sample of those documents drawn from different states:

- **Copper Flat Copper Mine: Draft Environmental Impact Statement, Sierra County, New Mexico, BLM/NM/ES-16-02-1793 – 2015.** The DEIS considers drawdown to 1 foot. [https://eplanning.blm.gov/eplanning-ui/project/75353/570](https://eplanning.blm.gov/eplanning-ui/project/75353/570)

- **Donlin Gold Project, Final Environmental Impact Statement, Alaska, 2015.** This EIS considers drawdown to 0.1 feet due to the nearby wetlands that could be dried. [https://cdxnodengn.epa.gov/cdx-enepa-II/public/action/eis/details?eisId=247774](https://cdxnodengn.epa.gov/cdx-enepa-II/public/action/eis/details?eisId=247774)

The FEIS considers drawdown to 1 foot. [http://www.hailegoldmineseis.com/feis.html](http://www.hailegoldmineseis.com/feis.html)

The DEIS therefore errs in not considering drawdown less than ten feet. Consideration of drawdown to one-foot would account for some variability in the estimate intended to be accommodated by the one-mile buffer zone. The DEIS clearly underestimates the potential effects of drawdown on surface water resources.

3. **Draft Environmental Impact Statement (DEIS) Arbitrarily Eliminates Certain Surface Water from Affects of Drawdown.**

According to the DEIS, “A less than 5 percent reduction of flow would be difficult to accurately measure or distinguish from natural fluctuations and is presumed to be within the model uncertainty. For these reasons, for the purposes of this analysis, a flow reduction of 5 percent or greater is used to identify model-simulated springs and streams with the potential to experience..."
measurable flow reductions." (DEIS 4-9). While the DEIS is correct that there are natural fluctuations, drawdown caused by dewatering is simply imposed on top of the natural water table and its fluctuations. In areas with significant natural fluctuation, drawdown may simply increase the time that the stream or spring is dry, which is just as important as causing a perennial source to go dry. Even with natural fluctuations time series plots can reveal if springs and surface waters are being affected. Therefore, the DEIS incorrectly concludes, mine related drawdown is not expected to result in a measurable effect to flows in the perennial stream reaches in the Project area including Thacker Creek (or flows into Thacker Pond), Crowley Creek and Pole Creek.” (DEIS 4-9).

4. The water resources monitoring and mitigation plan fails to meet NEPA requirements.

The DEIS fails to fully analyze the mitigation, and its effectiveness, of the purported plan to replace the waters lost at the various springs that will be adversely affected by the Project’s pumping and dewatering. There is no estimation of the amount of “supplemental” water expected for mitigation of affected surface water and springs and existing water rights. It is also not established what will be the source of replacement water. The amount of water for phase I and then phase II (2,600 and 5,200 AFY respectively) is discussed as consumptive use for the project. (DEIS, APP B p 59). However, there is no breakdown as to where the water is to used, and specifically indication of how much water, if any, is available for the supplementation plan. Therefore, it is unclear whether LNC will have secured the needed water right for the supplementation plan. This calls into question the effectiveness of the mitigation plan, required by NEPA.

The fact that the amount of replacement waters may be small, as compared to the Project’s pumping rates, however, does not excuse this failure, especially when the replacement waters would be needed in perpetuity, as compared to the pumping which will only last during the active mining period. BLM still has not fully analyzed the source of, or impacts from, using the unknown gallons per year of supplemental water. BLM has not even shown where the needed water it would come from, and without an analysis of the actual source and impacts, does not satisfy BLM’s duty to take the required “hard look” at these issues/impacts. BLM needs to fully analyze the effectiveness of each mitigation for all the springs and streams and existing water rights. In the case of springs and streams, piping water to the spring or stream location does not address the need to protect the riparian area that has formed as a result of the spring. As water reaches the surface a mini wetland is created with all of the wildlife associated with that moist zone. Supplying water by way of piping is not adequate to simulate the surface expression of a spring. In addition, given the long time frame that the spring will be naturally dry, the effect to the riparian area is likely to be permanent. BLM needs to evaluate the long-term effect of permanent losses of riparian areas for all the springs expected to be affected by dewatering including all of the PWRs.

5. DEIS is Incomplete in Analysis for Specific Impacts to Springs and Surface Waters

The DEIS does not analyze much of the surface waters, especially springs, that might be affected indicating that;

“actual effects on an individual perennial seep or springs would depend on the source of groundwater that sustains the perennial flow (perched or hydraulically isolated aquifer versus regional groundwater system) and the actual extent of mine-induced groundwater drawdown that would occur in the area. The interconnection (or lack of interconnection) between the perennial surface waters and deeper groundwater sources is largely controlled by the specific hydrogeologic conditions that occur at each site. Considering the uncertainty between the actual groundwater elevations and model-simulated groundwater elevations in this area, and the absence of data to define if these springs are perched or connected to the
deeper groundwater aquifer system, the EIS analysis conservatively assumes that there is a potential risk that drawdown associated with the mine could reduce baseflow to perennial springs located within (or within one mile of) the maximum extent of the 10-foot drawdown contour.” (DEIS 4-10)

As a result the general approach to surface waters is a “wait and see” method, which does not attempt to prevent negative effects.

Commenters recognize the difficulty in predicting specific affects on surface waters, but the law requires that BLM attempt this task. As previously found by the Ninth Circuit, the 2008 FEIS for the Cortez Hills Expansion Project contained an “inadequate study of the serious effects of ... exhausting water resources.” South Fork Band Council, 588 F.3d at 728. “The Tribes contend the BLM failed to conduct an appropriate mitigation analysis with respect to the environmental consequences of mine dewatering.” South Fork Band Council, 588 F.3d at 726-27. The Ninth Circuit agreed with the Tribes. Id. at 727. The appeals court also held that the Final SEIS for the Cortez Hills Expansion Project (For the Co failed to “adequately consider[] ... mitigation of the adverse impact on local springs and streams.” Id. at 722.

The court also rejected BLM’s contention that it was “impossible to conclusively identify specific springs and seeps that would or would not be impacted.” Id. at 727:

That these individual harms are somewhat uncertain due to BLM’s limited understanding of the hydrologic features of the area does not relieve BLM of the responsibility to discuss mitigation of reasonably likely impacts at the outset. See National Parks [Conservation Assoc. v. Babbitt], 241 F.3d at 733 (“lack of knowledge does not excuse the preparation of an EIS; rather it requires [the agency] to do the necessary work to obtain it.”). 588 F.3d at 727.

The blanket statement in the DEIS parallels the FEIS for Cortez Hills for which the appeals court found that: “Nothing whatsoever is said [in the FEIS] about whether the anticipated harms [to surface and ground waters] could be avoided by any of the listed mitigation measures. This discussion is inadequate.” Id. (emphasis in original). “NEPA requires that the agency give some sense of whether the drying up of these water resources could be avoided.” Id. The appeals court also found that the FEIS “does not in fact assess the effectiveness of the mitigation measures related to groundwater,” as required by NEPA. Id.

The Ninth Circuit further required BLM to “do the necessary work to obtain” the necessary underlying information regarding the “hydrologic features” that will be adversely affected by the Project as part of an adequate mitigation plan and EIS, as well as conducting an adequate “study of the serious effects of exhausting water resources.” Id. at 727-28.

The DEIS repeats the same error is not completely applying the available science to determine which surface waters are likely to be affected and how to avoid that impact.

7. Incomplete documentation and unclear designation of springs and surface waters violates the public’s ability to fully analyze impacts.

Surface waters and spring are identified in Figure 2.2 in Appendix A, part 2. There are several listed using a black diamond symbol, and in the key identifies these as developed/no spring observed. If there is no spring then why are they listed in the springs part of the legend. Alternatively, Figure 1.2 in Appendix A, part two, which is the “Thacker Pass Hydrographic Baseline” illustrates these same locations as spring with no other designation. In one figure these locations
are clearly springs in the other figure maybe there is water but no spring. BLM provides no documentation to clarify whether spring do exist at the black diamond locations in Figure 2.2.

It is impossible to fully understand the affects of the mine on the springs and surface waters unless it is clear what are the water resource that could be affected. BLM needs to provide in the FEIS full documentation of all springs and surface waters.


The company’s Plan of Operations acknowledges that the dewatering of the aquifer and substantial lowering of the water table may cause loss and/or elimination of springs and streams, which would violate BLM’s duties to protect these resources under FLPMA and Presidential Order. Water flows in springs and waterholes on public land in the West are reserved for public use by Public Water Reserve # 107 (“PWR 107”), which was created by Executive Order by President Calvin Coolidge in 1926. The reservation of federal water rights also included a withdrawal from entry of public lands ¼ mile around each spring/waterhole. PWR 107 provides:

[I]t is hereby ordered that every smallest legal subdivision of public land surveys which is vacant, unappropriated, unreserved public land and contains a spring or water hole, and all land within one quarter of a mile of every spring or water hole located on unsurveyed public land, be, and the same is hereby, withdrawn from settlement, location, sale, or entry, and reserved for public use in accordance with the provisions of Section 10 of the Act of December 29, 1916.

Executive Order of Apr. 17, 1926, previously codified at 43 C.F.R. § 292.1 (1938). See also GENERAL LAND OFFICE, DEPARTMENT OF INTERIOR, CIRCULAR 1066, 51 I.D. 457-58 (1926) (“[t]he above order [PWR #107] was designed to preserve for general public use and benefit unreserved public lands containing water holes or other bodies of water needed or used by the public for watering purposes.”). 1926 I.D. LEXIS 45.

The 1926 Executive Order and withdrawal were promulgated under the authority of Section 10 of the Stock-Raising Homestead Act of Dec. 29, 1916, 39 Stat. 862, 865, 43 U.S.C. § 300 (SRHA), which provided that withdrawn “lands containing water holes or other bodies of water needed or used by the public for watering purposes … shall, while so reserved, be kept and held open to the public use for such purposes….” Although the Stock-Raising Homestead Act and the underlying authority of the President to withdraw such lands pursuant to the Pickett Act of 1910, 36 Stat. 847, was repealed by FLPMA in 1976, withdrawals (such as the 1926 Executive Order) made pursuant to those authorities remain in force today. 43 U.S.C. § 1701 note (FLPMA).

The Project’s ground water pumping/dewatering cannot cause springs/waterholes established under PWR 107 in 1926 to be eliminated or have substantially reduced flows. Under the PWR 107 Executive Order and related laws, BLM cannot authorize activities that will impair the public use of any reserved waters and/or lands. BLM’s approval of pumping/dewatering, and other activities associated with the Project, which could dry up or materially reduce springs and waterholes protected by PWR 107, would not be in compliance with these requirements.

BLM cannot cause the loss of federal property such as PWR 107 reserved water rights and lands without congressional or Presidential authorization.
Destruction or loss of the reserved waters and withdrawn lands under PWR 107, including the location of Project facilities within the withdrawn lands, and/or the preclusion of public access via fencing, is prohibited under PWR 107, FLPMA, and the SRHA.

Failure to review and fully protect the reserved water rights, waters, springs and water holes, related withdrawn lands, and public uses of these lands and waters, violates PWR 107, the SHRA, and BLM’s duty under FLPMA 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).

BLM must also review and fully protect these resources pursuant to FLPMA’s mandate 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).

In addition, BLM must ensure that the Project will not disturb public lands withdrawn by the 1926 Executive Order in contravention of the purposes for which the land was withdrawn. Any mining claims filed or located on lands withdrawn by PWR 107 are null and void unless they meet the requirements under the Mining Law for the discovery of a valuable mineral deposit. “Mining claims located on lands not open to appropriation are null and void ab initio.” Mount Royal Joint Venture v. Kempthorne, 477 F.3d 745, 756 (D.C. Cir. 2007), citing Shiny Rock Mining Corp. v. United States, 825 F.2d 216, 219 (9th Cir. 1987) (same).

BLM must also keep the withdrawn lands “held open to the public use” as required by the SRHA, PWR 107, and FLPMA. Two springs, BLM-05 and BLM-06, and within the Plan of Operations boundary, which could restrict access.

BLM must consider, and can only approve, an alternative of locating/constructing Project facilities away from the lands withdrawn around the PWR 107 springs, and consider an alternative of not allowing the flows in these Springs to be diminished, in order to comply with PWR 107. The consideration of alternatives is “the heart of the environmental impact statement.” 40 CFR § 1502.14. DOI/BLM has a duty to take a “hard look” at all reasonable alternatives to, and the environmental impacts from, Project operations. The agency must also adequately analyze mitigation measures to protect ground and surface water, and to adequately analyze the direct, indirect, and cumulative impacts to these resources.

Regarding PWR 107, the DEIS shows the springs labeled BLM-01, BLM-02, BLM-03, BLM-05, and BLM-06 could be affected, but have yet to be quantified or analyzed. Appendix E within Appendix P of the DEIS, “Spring Location Hydrographs” shows expected drops in groundwater elevation for all of these springs as a result of the proposed mine, which groundwater levels not recovering in all of the springs except BLM-01 for at least 300 years. For example, BLM-03, a listed BLM reserved water right would be expected to drop 2-3 feet permanently (extend of the 300 years analysis), and as stated above even a one foot drawdown could affect springflow and even eliminate springflow. In addition there are numerous springs located on BLM lands within the project boundary and within the 5 mile Area Of Influence (AOI). Any spring on BLM is eligible for protection under PWR 107. BLM must determined which of the springs on BLM managed lands satisfy as PWR 107 springs. BLM thus failed its duty to analyze these public rights under NEPA and FLMPA, and failed to protect them under its PWR 107 duties.
9. **The Baseline Surface Water Hydrology Contained within the DEIS is Incorrect and Incomplete**

The following accounting and detailing of the hydrographic baseline and critique from Orovada resident and rancher Edward Bartell and hydrology consultant Dr. Erick Powell:

Upper Pole Creek is considered to be a Lahontan Cutthroat Trout occupied stream. Incredibly despite the sensitive nature of this stream; LNC failed to conduct any long term flow monitoring of Pole Creek. Instead they relied upon 4 one day measurements on two side channel springs and ignored the numerous springs that feed the main channel. LNC relied upon a spring in the upper reaches SP-050 which they recorded an average flow of 3.5 gpm and a spring lower down SP-036 with a recorded flow of 1.15gpm. For reference purposes the above flow amounts are roughly equivalent to the amount of water you would get out of your kitchen faucet.

I have visited Upper Pole Creek on numerous occasions including several occasions in 2018. From my personal knowledge I know LNC’s flow amounts do not accurately reflect Pole Creek flow. In fact in 2018 flow in the main channel was many fold greater than those LNC recorded. While I had no reason to measure the flow of Pole Creek in 2018, I am familiar with how to measure flow and have measured flow on other occasions. Therefore I can distinguish the difference between a creek flowing a few hundred gallons a minute, and the tiny amounts of water LNC documented.

The figure below that I marked up is an excerpt out of the draft EIS Appendix P part 8 Figure 3.13. This marked up figure shows springs LAC presented in their Baseline Report, including upper Pole Creek.

In June of 2009, Nevada Department of Wildlife conducted flow measurements of Upper Pole Creek (the same stretch of stream discussed above). NDOW’s 2009 GAWS report documented average flow in 2009.
The above figure is an excerpt out of the NDOW 2009 GAWS report showing the various stations on Upper Pole Creek and an average 2 CFS (898 gpm). These flows documented by NDOW are over 100 fold greater than the flows recorded by LNC on the same reach. Clearly LNC’s flow numbers do not accurately reflect flow on Upper Pole Creek and are in fact off by an order of magnitude. Data that is off by an order of magnitude has no scientific value and must be rejected in its entirety. BLM must address these massive inaccuracies in LNC’s data and conduct independent research.

LNC’s consultants are in serious error in representing data. On the above mentioned Pole Creek spring SP-036. According to Seeps and Springs reports (Piteau 2018b, Piteau 2018c, Piteau 2018d, and Piteau 2019a). LNC’s consultants reported four visits to SP-036 in 2018 the first quarter of the year they measured 4.6 gpm, on the second quarter it was too much water to measure, and quarter three and four it was dry.

The above figure is an excerpt out of Piteau 2018c, documenting the Upper Pole Creek Spring SP-036 in May of 2018. The site description says “Flow [significantly] higher than
during [previous] visit, unable to [acquire] an accurate [measurement]"). Of particular note is the “surveyor” is the senior hydrologist. This same hydrologist is the primary author of both the Baseline Data report, and the Impacts Report that form the central foundation of the entire DEIS. This senior hydrologist would have been capable of measuring large flow amounts, but failed to do so when there was significant flow.

Also of particular note, flow in the above photograph in the flow in the main channel is quite significant and appears to be in excess of 500 gpm. Ignoring this large flow volume creates a grossly inaccurate picture of total flow in Pole Creek. For reference purposes in May 2020 Dr. Powell measured 1.75 cfs (785 gpm) flowing in the main channel below Sp-036. The flows Dr. Powell and NDOW documented are vastly greater than flows reported by LNC. The above photographs shows the senior hydrologist was aware of very significant flows in Pole Creek but simply failed to report them in the data.

How did the senior hydrologist account for too much water to obtain an accurate long term measurement in SP-036 in the second quarter of 2018?

The above graph is included in appendix C of the Thacker Pass Project Baseline Hydrologic Data Collection Report (I obtained Appendix C via a data request to the BLM). The first quarter flow measurements are accurately reflected as 4.6 gpm, on the graph. But incredibly the second data report of too much water to obtain an accurate measurement is recorded as ZERO GPM! The baseline report also includes the incorrect average for SP-036 of 1.1 gpm for this spring (See DEIS Appendix P page 388 numbered page 20). Recording “too much flow to measure” as “zero” flow is a misrepresentation and raises serious credibility issues and highly biases the entire report.
Given this demonstrable misreporting of data the entire report must be rejected and redone by independent 3rd parties hired by BLM and funded by LNC.

LNC incorrectly reports SP-055 as ephemeral and provides highly inaccurate flow measurements. We hold water rights to SP-055 (Calvera Spring), this spring is highly reliable, never goes dry, and is critically important to our operation. This spring feeds water to about 10 miles of pipeline. Therefore it is very important that flows be accurately documented. Below is an aerial photo of SP-055 from Google Earth.

![Aerial photo of SP-055](image)

The dirt stock tank LNC has identified as the spring, is in fact a sink for water flowing out of SP-055 not a spring. When Dr. Powell and I visited the SP-055 in August of 2020 we observed water flowing out of the lower overflow pipe and into the dirt stock tank, yet no water was flowing out of the dirt tank. I visit SP-055 several times a year every year, I have never ever observed any spring upwelling in the dirt stock tank. Early in the season water routinely flows out of the overflow pipelines from SP-055 though the dirt tank and over the mini waterfall, where LNC measured flow. When all overflow pipelines are flowing I have measured flow of 60 gpm at the mini waterfall. In August 2020 Dr. Powell Measured the flow in the overflow pipeline at 3.5 gpm and the delivery pipeline of 12.7 gpm for a total flow of 16.2 gpm out of SP-055.

LNC’s consultants substantially misrepresent the hydrology of Rock Creek. The surface flow of Rock Creek doesn’t originate in the Montana Mountains. Rock Creek originates about 2.25 miles above the confluence with Crowley Creek in a series of big springs. The various so-called “headwaters” springs of Rock Creek identified by LNC’s consultants, don’t have any surface water connection with rock creek. Rock creek is made up of course cobb and surface flow rapidly infiltrates into the groundwater. I have never seen rock creek flow out of the mouth of Rock Creek canyon (it likely flows briefly in extreme flood events).
While focusing on the various “headwater springs” of Rock Creek; LNC totally ignored the major springs of Rock Creek which output very large volumes of water. Not one of these springs were identified or measured in any of LNC’s reports despite the fact the combined flow of these springs is hundreds of gallons a minute in a typical year. In May of 2020 Dr. Powell estimated the flow of Rock Creek at the Crowley Creek road as 0.87 CFS (390 GPM). Concurrent with Dr. Powell’s May visit I personally verified and observed the source of this Rock Creek flow was originating in a series of springs starting about 2.25 miles above the confluence with Crowley Creek.

The above photograph was taken where the Crowley Creek Road crosses Rock Creek on 6/20/2020. Flow at this point in time was originating in springs about 100 feet above the road. Even though these springs are merely feet above the main road LNC’s consultants failed to document them.

According to LNC’s model that they provided us, the above springs within Rock Creek are in the zone of greater than a 1 foot of water table drawdown, caused by groundwater pumping. Given that these spring are fed by raising groundwater, any drawdown of the water table will affect flow. These springs must be documented and measured with a long term gauging station in order to establish flow patterns, to document impacts, and properly calibrate the model.

LNC incorrectly asserts that Pole Creek is ephemeral. In all figures and maps presented in LNC’s Baseline Data Report, the entire reach of Pole Creek is labeled as ephemeral. According to the DEIS after the baseline data report was complete “A supplemental field investigation conducted on February 19, 2020, delineated three flowing reaches of Pole Creek (characterized as likely perennial reaches) separated by dry reaches (characterized as ephemeral reaches) (Piteau 2020b).” Nowhere in any of the documentation included with the DEIS is there any measurement of the main channel of these 3 flowing reaches. Given that LNC’s consultants documented a vastly different view of Pole Creek than they had earlier reported. Both LNC and BLM have a duty to conduct vast amounts of additional measurements (including long term gauging stations on Upper Pole Creek) when LNC finally dis-
covered the obvious perennial reaches (that are Lahontan Cutthroat Trout habitat). Instead BLM proposes to plow ahead with the grossly inaccurate data in the Baseline Data Report.

From my personal knowledge Pole Creek has reaches that never go dry. LNC should have been aware of this fact. NDOW has documented Lahontan Cutthroat trout (LCT) in Pole Creek. The multi-year presence of LCT is obviously widely inconsistent with an ephemeral stream. The fact that Upper Pole Creek was initially labeled as ephemeral raises serious credibility issues about LNC’s data and data collection methods.

Lower Pole Creek is also currently falsely labeled as ephemeral in the Draft EIS, and all associated documentation. Merriam Webster’s dictionary defines an ephemeral stream as “a stream that flows only briefly during and following a period of rainfall in the immediate locality”. Ephemeral streams by very definition don’t have any meaningful groundwater storage. Excluding periods of extreme drought Lower Pole Creek flows much of the year and several months after major rainfall/snowmelt events. This false labeling of Lower Pole Creek must be corrected in the final EIS.

On September 2\textsuperscript{nd} of 2020 I observed Lower Pole Creek was still flowing and flowing a substantial distance. I traveled the entire flowing length of Lower Pole Creek on this date. Lower Pole Creek began flowing from the spring system in the vicinity of SP-039 all the way to the confluence with Crowley Creek a distance of 1.75 miles.

The above photograph is where the Pole Creek is flowing across the main Crowley Creek road on Sept 2, 2020. Anybody driving on the Crowley Creek road can observe this late season flow, which is entirely inconsistent with an “ephemeral stream”. Clearly both BLM and LAC could have made casual observances driving down the road and should have been aware this is not an ephemeral stream. Despite this, the report contains demonstrably incorrect statements about Pole Creek “Pole Creek seasonally peaks in April and May and is dry by midsummer.” (See DEIS Appendix P part 1 Pdf pg 28 numbered pg 12)
Likewise the reports contain incorrect statements about the flow of Crowley creek “The stream [Crowley Creek] goes dry south of the confluence with Rock Creek during July to November, indicating there is no baseflow component of streamflow that far south.” (See DEIS Appendix P part 1 numbered pg 8). This statement is also important because LNC’s consultants are making an incorrect scientific judgement about baseflow in Crowley Creek.

The above photograph was take on September 2\textsuperscript{nd}, 2020 showing baseflow low down on Crowley Creek. This photograph was taken a short distance above the large diversion pipes on Crowley Creek, near Sentinel Rock, showing flowing water in Crowley Creek.

This perennial flow of Crowley Creek was not documented in any of Lithium Nevada’s reports. In fact the Baseline Report incorrectly states “Thacker Creek is the only perennial stream near the Thacker Pass Project. All other creeks have ephemeral flow near the Thacker Pass Project, although the upper reaches of Crowley are likely perennial.” Draft EIS Appendix P part 7 pg 69). From my personal knowledge this section of Crowley Creek has year around flow in normal and wet years. Prior to the drought of 2012 I had never seen these springs dry. When Dr. Powell and I visited this site in August, Pole Creek was combining with the flowing reach of Crowley Creek. By September 2 when I visited this reach again there was a dry gap between the water coming into Crowley Creek from Pole Creek and the baseflow lower down in Crowley Creek, clearly showing this is baseflow in Crowley Creek.

Accurate long term gauging stations must be established on Lower Pole Creek and Crowley Creek near the historic corals (by Sentinel Rock), in order to obtain accurate baseline flow patterns for these reaches.

All the flow amounts we documented this year are less than what one would see in a normal year. We are in a drought year. These are abnormally low flows.
On the left above is the Nevada US drought monitor, showing we are in a “moderate drought”. On the right is the NRCS Snowtel and precipitation report for the Northern Great Basin, showing year to date precipitation is at 80% of normal.

LNC’s Crowley Creek gauge is not accurately recording flow.

Above photograph is of the LAC’s Crowley Creek gauging station, were taken on July 3rd of 2020. As one can see from the above photographs there is significant flow in Crowley Creek on this date but this flow is going underneath the gauging station, whereas this gauging has not been installed in the lowest portion of the stream.

LNC’s Upper Thacker Creek gauging station is not accurately recording flow. The Upper Crowley Creek gauging station is installed in a poor location consisting of course cobble this allows water to run underneath the station.

On LNC’s Lower Thacker Creek gauging station, we have requested and have yet to be provided sufficient data to ascertain whether this station is accurate or not. The DEIS fails to contain such data. This station relies on rocks that were manually placed to increase water levels, if these rock have moved or water has eroded sediments around these rocks the station is likely inaccurate as well.
When gathering data it is critical to gather multiple year types, 2018 was a very dry year. On top of the data gathering inaccuracies noted above data is highly prejudiced by year type, and thus it doesn’t accurately reflect flow on a normal year.

According to email conversations I have had with LNC representatives they have not been processing flow data from surface monitoring stations since April 2019. Roughly one year’s worth of data is not adequate to establish flow trends or calibrate models.

LNC’s consultants failed to document in reports how they arrived a flow amount when they measured flow (i.e. flume, bucket, flow meter, etc.). And there are conflicting flow amounts between various documents for the same measurement point. I have listed the most egregious errors in data that I located above but there are several additional errors. Given these extensive errors, a complete audit is necessary to determine how LNC’s consultants arrived at their data.

I have also been told by longtime local residents that historical exploration activities have dried up springs in the Montana Mountains (by drilling unsealed boreholes too close to springs and allowing the water table to drop to a lower aquifer). These concerns are supported by Lithium Nevada’s own research. According to Lithium Nevada’s Water Quantity and Quality Impacts Assessment Report page 11 (DEIS Appendix P part1):

“Likewise, the continuous drainage of WSH-17 [a test well] suggests the borehole intercepted the fault barrier and is slowly re-equilibrating to the downgradient hydrologic block.”

Current and historical exploration have clearly altered the hydrology as is noted above, the DEIS fails to address historical or future impact to springs by exploration and monitoring activities. The baseline spring data is also inadequate to document impacts. This must be corrected in the Final EIS.

According to Appendix P part 7 WSH-17 was 103.6 feet below ground surface (bgs), when this well was fist drilled, but has now dropped to 196 feet below ground surface. It appears that LNC’s exploration activities have dropped the water table in the location of this well over 90 feet. By monitoring LNC is in fact altering the hydrology. The final EIS must address the current and potential future impacts of exploration activities, and monitoring wells.

The Final EIS must address and examine the extent other boreholes may have drained aquifers within the pit area. Exploration has occurred over several years, and it is unclear how well water levels were recorded in core excavation and test wells. If earlier exploration drained the aquifer as has occurred with WSH-17, then a new test well has been drilled a few years later, test wells will be monitoring hydrology that has been artificially altered. Given the critical nature of pit lake drainage, BLM must obtain independent research to obtain a second expert opinion, in the Final EIS.

WSH-17 shows the potential to encounter water in much higher zones and much earlier in pit life. In reality the pit is not a monolithic lump of clay, rather the clay, contains sections of basalt and other materials that could transmit large volumes of water if fractured and tied to other water sources. Given the extensive volcanism, and complex geology there is a high probability of isolated small narrow features that will transmit water
at higher rates, than the main body of clay. As clay is removed more and more of these features will be exposed. The final EIS must analyse the potential existence of features imbedded within the clay that may be small (and not detected by current exploration) but have the potential to transmit larger volumes of water once the sealing layer of clay is removed; including but not limited to a)ash layers b)narrow gravel layers b)lava tubes c)old buried stream beds, d)fissures e)faults d)steam vents e)lava flows.

Given that LNC’s baseline data is highly inaccurate both the BLM and ourselves will be powerless to determine if flows are being depleted by the project. BLM has a duty to protect the public resource.

These inaccurate flow amount were also used to calibrate the model. Given that the model has been calibrated to data that is inaccurate by an order of magnitude. The entire project has no scientific basis.

Given the extensive and very large errors in data, these errors must be corrected. BLM has a duty to conduct research independent of LNC obtained data to ensure that the hydrographic baseline is correct as required by NEPA and FLPMA.

10. The Thacker Pass Project will Dry Up Springs, Wetlands, Meadows, and Lower Water Levels In the Wells of Water Rights Holders Causing UUD

The following accounting and detailing of the hydrographic baseline and critique from Orovida resident and rancher Edward Bartell and hydrology consultant Dr. Erick Powell:

LNC proposes to use 2 production wells, one of which has already been drilled. The second one has yet to be drilled. These wells are approximately 8 miles away from the open pit and production facilities. The water will be pumped to the mine site via a pipeline. After Crowley Creek exits the gap by Sentinel Rock, it enters an old alluvial fan. This old alluvial fan is characterized by extensive gravel deposits and contains at least 4 gravel pits.
The above aerial photograph is from apple maps and was selected because it was taken prior to significant haying and clearly shows wet areas. As Crowley Creek exits the gap by Sentinel Rock it is diverted into irrigation ditches. On most years the majority of Crowley Creek water is lost to groundwater prior to reaching private lands for irrigation. As water flows sub surface across this old alluvial fan, water reaches the clay barrier west of the Quinn River and is forced to the surface, forming a vast sub-irrigated meadow and wetlands on the lower end of the alluvial fan.

LNC production wells are on the North end of this old alluvial fan. As these wells create a cone of depression water will be directed toward the wells and away from the wetlands and sub irrigated meadows, this will cause us massive financial damages.

LNC has provided us documentation specific to our private lands and BLM well, LNC’s own documentation clearly shows that water tables will drop significantly on our Private land as well as BLM lands.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Critical drawdown and differences</th>
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<tbody>
<tr>
<td>Well ID</td>
<td>Predicted Drawdown (ft)</td>
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<tr>
<td>--------</td>
<td>----------------</td>
</tr>
<tr>
<td>North BLM</td>
<td>13.6</td>
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<tr>
<td>Windmill Well</td>
<td>19.5</td>
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<tr>
<td>North Burns Well</td>
<td>12.3</td>
</tr>
<tr>
<td>South Burns Well</td>
<td>12.2</td>
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</tbody>
</table>
The above table is an excerpt of a Technical Memorandum (FILE: 3898 TM20-01) that LNC prepared that is specific to our ranch (The full report is attached as exhibit XX). As one can see from the above table LNC is predicting very significant drawdowns on our private lands the “Burns” field. These are “predicted drawdowns” in our 4 stockwater wells. The “critical drawdown” levels are the levels the well would be going dry. Lithium Nevada is trying to define “impact” as the well going dry, which is not consistent with BLM practice or NEPA. As I note later if certain assumptions are changed in the model, wells may dry up too.

Keep in mind these are LNC’s own numbers, clearly showing dramatic drops in water tables miles away from the production wells. If water levels in wells drop so will water levels under the surrounding vegetation.

The below photographs shows existing conditions in August of this year.

Photo at left is on our 960 acres of private lands, center photo is on our BLM Grazing Permit, photograph at right is nearby BLM uplands outside of the high water table. None of this land was irrigated this year. This is a low precipitation zone. In the drought beginning in 2012 most of the sagebrush died in the uplands here from a lack of water. This is what we have to look forward to when Lithium Nevada devastates our livelihood when they drop our water table. All photographs taken 8/9/2020.

The green grass in the two photos above on the left are the result of a naturally high water table. The water table is so high on the BLM lands in the center photo there is often visible water on the surface early in the year. On our private land the water table is further down but deep rooted vegetation can reach the wetted zone above the water table. Any dropping of the water table will have impacts on vegetation. Clearly LNC’s own research shows that water tables will drop significantly in this area. These impacts must be addressed in the Final EIS.

The final EIS must include mitigation for damages to vegetation on our property and BLM lands as a result of dropping water tables. Transforming sub-irrigated lands into barren desert will result in hundreds of thousands of dollars of lost property values, and lost grazing value.
As I have made it clear to both BLM and LNC these damages are very real and must be mitigated.

As I have also pointed out to both BLM and LNC in writing damages related to the production wells can be entirely mitigated by simply leaving the points of diversion where they currently are and piping the water an additional distance to the mine site. This mitigation must be implemented if LNC is unwilling to provide other forms of mitigation.

As I have also pointed out to both BLM and LNC in writing damages related to the production wells can be entirely mitigated by simply leaving the points of diversion where they currently are and piping the water an additional distance to the mine site. This mitigation must be implemented, if LNC is unwilling to provide other forms of mitigation.

As I also noted in my scoping comments given that the BLM has been made aware of the obvious damages to our property, if BLM authorizes this project without mandating requisite mitigation, BLM will be authorizing a constitutional taking of our property.

In addition to the project taking our property BLM is unlawfully authorizing the destruction of wetlands, without mitigation. In addition to robust meadow grass, there is obvious wetlands vegetation, this will be impacted by dropping water tables.

The above photograph was taken on 9/2/2020 showing tules growing within the above mentioned wetlands, this area also contains rushes and sedges that are typical of wetlands.

The EIS must consider impacts on wetlands. Wetlands are highly sensitive to water level drawdowns. While the Draft EIS considered impacts to wetlands that may be dug up by actual mining, the Draft EIS failed to consider the impacts to wetlands by drawing down of the water table.
The above photograph is wetlands on Lower Pole Creek, these wetlands have lower pole creek flowing through them as well as slight groundwater upwelling. The Draft EIS is projecting water table drawdowns of roughly 4 feet in this area. Clearly these wetlands would be destroyed if these projected impacts come to fruition. (See Draft EIS Appendix P part 5).

In addition to affecting wetlands and sub-irrigated meadows near our private lands (the Burns Field), LNC’s own modeling data shows that water levels will drop significantly below springs in Pole Creek. The graph below is spring on Pole Creek that is near the confluence with Crowley Creek.

![Graph showing significant drawdown to Pole Creek spring](image)

This graph shows there will be a very significant drawdown to this spring (See Draft EIS Appendix P part 5). This spring flows down into Crowley Creek providing late season stockwater for us in Crowley Creek. In addition there are springs in Crowley Creek that are even closer LNC’s production well, LNC failed to identify these Crowley Creek Springs. LNC’s own modeling data (noted above) shows very significant drawdowns, which will dry up these springs. These impacts must be mitigated.

Below is another spring on Pole Creek showing a significant impact from mining activities (See Draft EIS Appendix P part 5).
We have a stock watering water gap right below this spring that will be impacted when the Thacker Pass Project dries up this spring. In actuality there are additional springs slightly above this area in the main channel, that LNC failed to identify, which will likely be impacted as well. These impacts must be mitigated.

Intermittent stream reaches that are improperly labeled as ephemeral provide critical water supplies for stockwater, wildlife, and even fish migration. Intermittent stream reaches are often highly reliable (i.e. a reach may always have water in June, but not September). Wildlife and Stock use have become adjusted to these seasonal patterns. Dropping of water tables will have devastating impacts on stock and wildlife. With intermittent streams dropping of the water table is what causes them to go dry. Any additional drops caused by the Thacker Pass Project will have devastating impacts that must be mitigated.

The Draft EIS omitted most of our water rights. The following water rights should be included in the Final EIS analysis V00707, V01464, V11843, V11844, V11845, V11866, V11867, V11868, V11785, V11786, V11787, V11788, V11789, V11790, V11791, V11792, V11793, V11794, V11795, V11796, V11798, V11799, and V11800.

For each of the above water rights in the Final EIS should provide modeled drawdown levels, so an analysis of impacts can be made.

Many of the water rights noted above are springs that should have been included in the baseline seeps and spring report but were not.

The EIS Fails to Model the Backup Well

LNC has filed for two production wells that they plan on using to pump water the Quinn River Production well and the Quinn River backup well. The water rights are filed such that they can use either well 100% of the time. Given the Quinn River Backup well could and likely will be used, the Final EIS must model and evaluate all potential impacts of this well. The Quinn River backup well is mentioned in the DEIS, but there doesn’t appear to be any evaluation of the impacts.
Water Quality Aspects

1. DEIS Does Not Completely Address Sulfide Oxidation that Could Cause UUD

The model of arsenic and antimony release from backfilled waste rock does not account for the amount of sulfide sulfur that oxidizes rock prior to flooding, and the associated amount of solutes that will be released by this oxidation process.

The waste rock that will be produced at the Thacker Pass mine was determined by Piteau as not acid generating, and so acidic drainage is not considered to be a significant source of pollutant release. Instead, the water quality study states that several solutes of concern (antimony, arsenic, fluoride, and molybdenum) are probably released “through the process of ion-exchange and the mechanical increase of reactive areas through milling and mining”. But the Thacker Pass waste rock does have appreciable sulfide S. Ten of the 20 rock samples subjected to humidity cell tests contained over 1% sulfide sulfur (i.e., acid generating potential greater than 31 kg CaCO₃/tonne rock; Piteau 2020, Table 5.9, “HCT Sample Summary”). The effect of the sulfide sulfur in the waste rock can be seen in the initial sulfate concentrations in humidity cell effluents, some of which contain several thousand mg/l SO₄ (see BLM 2020, Apx P, Part 6, various figures for sulfate in humidity cell effluent).

In fact, several of these pollutants of concern, in particular arsenic and antimony, are frequently found in sulfide phases, and these solutes can be released by the oxidation of sulfide minerals, even when the conditions are not acidic. Thus while it is entirely possible that the pollutants of concern are being released by surface reactions such as desorption of ion exchange, BLM must confirm this.

In response, the water quality study supporting the effects of the open pits and backfill on groundwater quality (i.e., Piteau 2020) should be refined with two actions.

1) Estimate the cumulative amount of sulfide S mineral oxidation that will occur in the pit backfill, and use this in the groundwater model to indicate the amount of sulfate that will be released to groundwater when the backfill is flooded.

2) Identify more reliably the source of the pollutants of concern, particularly arsenic and antimony, to confirm or alter the assumption that pollutants are not being released in proportion to the amount of sulfide mineral oxidation that occurs in the waste rock. One option would be mineralogic analysis (x-ray diffraction, electron microprobe, or other suitable spectroscopic method) to identify the specific phases containing arsenic and antimony. Another option would be statistical and chemical analysis using effluent from the humidity cell tests to determine whether pollutants of concern were released in proportion to sulfate.

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2. **Groundwater Contamination is Underestimated**

The model of pollutant dissolution from waste rock appears to underestimate the concentration of antimony in groundwater flowing through the backfill, and the duration over which antimony and other pollutants in the backfill will exceed the drinking water standard.

The water quality model supporting the Thacker Pass DEIS predicts that pore water in the backfilled pits will exceed the maximum contaminant level (MCL) for antimony during the entire 300-year model simulation period (DEIS, Apx P, Part 3). But in the South and North sub pits, the model shows the concentration of antimony in the backfill pore decreasing by a factor of ~5 to 10 over the first 100 years after mine closure (see below, Piteau 2020, Figure 5.9b).

![Graph showing Sb concentrations over time](source: Piteau 2020, Figure 5.9b, “Backfilled pit proposed action: As, Sb, F, Fe plots through time; also found in BLM 2020, Apx P, Part 3)

But the desorption of antimony from waste rock samples, as estimated from the humidity cell tests, indicate that the pore-water concentrations in backfill may release antimony at higher concentrations and for a longer duration than indicated in the model by Piteau 2020.

Assuming that antimony and other solutes of concern are release from waste rock by the process of ion exchange and not sulfide mineral oxidation (Piteau 2020), the humidity cell tests are essentially acting as sequential batch desorption reactors. The relevant chemical reaction is the desorption of solutes from mineral surfaces in the waste rock as the rock equilibrates with the water added on the last day of each humidity-cell-test cycle. In these tests, the duration between the humidity cell samples (these typically vary between 1 and 5 weeks for the Thacker Pass samples) is not relevant. What is relevant, however, is how the concentrations change between successive rinse cycles—this indicates how the pollutants of concern partition between the solid and dissolved phases over a range of concentrations. Also important is the ratio of water: rock in the lab test, which can be used to scale up to field conditions based on the water: rock ratio in saturated pit backfill, and thus estimate how the concentration of solutes will decrease when backfilled rock is rinsed under field conditions.
Scaling from laboratory humidity cell tests to field scale backfill can be estimated from the water:rock ratio under each set of conditions.

- **In the humidity cell tests, the ratio of water: rock ratio is 0.47 L water/Kg rock** (i.e., in each leach cycle, 1.5 Kg of rock is rinsed with 0.7 L of water, so 0.7 L water / 1.5 Kg rock = 0.47 L water/Kg rock; Table 5.3 in Piteau 2020).

- **In the flooded waste rock backfill under field conditions, the water: rock ratio will be 0.14 L water/ Kg rock** (i.e., in the backfill, the rock bulk density is 2.1 kg/L and porosity is 0.3, so when saturated, the water: rock ratio will be 0.3 L water/ 2.1 Kg rock, or 0.14 L water/Kg rock; Table 5.3 in Piteau 2020).

- Thus the water: rock ratio in the **humidity cell tests is 3.3 times higher than in backfilled waste rock** (i.e., [0.47 L water/Kg-rock (lab)] / [0.14 L water/ Kg-rock (field)] = 3.3; Table 5.3 in Piteau 2020).

In scaling from lab to field, one rinse cycle in the humidity-cell lab test is approximately equivalent to flushing the backfill with 3.3 pore volumes of water.

Because desorption is the transfer of a solute from a surface to a solution, the amount of solute available for desorption is proportional to the waste-rock surface area. For the Thacker Pass waste rock, **the ratio of field-to-lab mineral surface areas is estimated to be 0.4** (i.e., 17.7 m²/kg in field waste rock and 43.8 m²/kg in lab samples, so [17.7 m²/kg in field rock / 43.8 m²/kg in lab rock] ~ 2.5; Table 5.3 in Piteau 2020).

Thus the decrease in antimony concentration in one humidity cell cycles indicates the drop in concentration expected by flushing the equivalent waste rock backfill with 3.3 pore volumes of water. But the concentration of available pollutants in the waste rock is only ~40% as high in the concentration of pollutants in the lab samples. Considering these effects together, **one rinse cycle in a humidity cell test represents the amount of antimony desorbed when the waste rock is flushed with ~1.3 pore volumes of water** (i.e., 3.3 field:lab water ratio * 0.4 field: lab surface area ratio ~ 1.3 net lab: field scale effect). This is a simplified method for combing the effects for water: rock ratio and mineral surface areas. But for this comparison, it provides an approximate method to illustrate the duration of pollution release from Thacker Pass waste rock using the humidity cell tests results.

Using this approximate scale factor of 1.3 to go from each humidity cell leach step to one pore volume backfill, the antimony concentrations measured in humidity cell tests (BLM 2020, Appendix P, Part 6) can be used to indicate generally the duration over which groundwater in the backfill will exceed the antimony MCL. The water-quality modeling assumes that “Backfill comprised of 65% waste rock (claystone/ash and ash geochemical units) and 35% gangue would be placed in the open pit” (Piteau 2020, Section 5.4.1). Below then are plots of antimony concentration in humidity cell effluent from claystone/ash, ash, and gangue (BLM 2020, Appendix P, Part 6).
Key implications of the antimony concentrations in humidity cell tests on estimates of water quality in the Thacker Pass pit backfill are that:

1) Antimony concentrations tend to decrease with each rinse cycle,
2) In all three rock types representing backfill, the average antimony concentration in the humidity cell effluent remained above the MCL (0.006 mg/L) for 8 rinse cycles, which corresponds to ~10 pore volumes flushed through the backfill, and
3) In two of the rock types (Clayston/Ash and Ash) where the materials were subjected to more rinse cycles, the average antimony concentration in humidity cell test remained above the 0.006 mg/L MCL for 15 rinse cycles, which corresponds to ~20 pore volumes flushed through the backfill.

These results indicate that although antimony in the backfill waste rock readily desorbs into water, the initial concentrations in the rock are high enough (and the adsorption to the mineral surfaces is strong enough) that the antimony concentration in the pore water of the backfilled pits will exceed the MCL until it has been flushed with at least 10 to 20 pore volumes of through flowing groundwater.

Looking in more detail at the Claystone/Ash humidity cell tests (i.e., the rock that would represent ~65% of the backfill) indicates some basic characteristics about how antimony will desorb from this material:

1) The average antimony concentrations over the first 7 rinse cycles (approximately equivalent to ~9 flushes of backfill pore water) are 0.12, 0.13, 0.12, 0.11, 0.11, 0.06, and 0.05 mg/L antimony; and
The average concentrations after each rinse cycle, relative to the concentration in the initial rinse cycle, are: 100%, 106%, 99%, 90%, 90%, 50%, and 44%.

Considering first the 2nd observation, this slow decrease in antimony concentration in the humidity cell leachate indicates that most of the antimony in each humidity cell leach cycle is remaining adsorbed to the surface. It’s not until the 6th rinse cycle that the dissolved antimony has decreased from the initial concentration by 50%, but by this time in the test the mass of water flushed through the rock was 2.8 times greater than the mass of rock (i.e., 6 rinse cycles X 0.7 Kg of water per rinse cycle = 4.2 Kg of water, and the mass of rock used in each humidity cell 1.5 kg, so 4.2 Kg water/ 1.5 Kg rock = 2.8 Kg water/Kg rock). Given that the water: rock ratio in each humidity cell tests is ~3.3 times larger than the water: rock ratio in a pore volume under field conditions, the concentration of antimony in the waste rock backfill can be expected to drop to ~50% of its initial concentration after the backfill has been flushed with ~ 20 pore volumes of through flowing groundwater (i.e., achieving a 50% drop in antimony in laboratory tests required 6 rinse cycles, and the water: rock ratio in one laboratory rinse cycle is 3.3 times larger than one pore volume under field conditions, so 6 rinse cycles x 3.3 field pore volumes/ rinse cycle ~ 20 field pore volumes).

Considering then item #1 above (change in average antimony concentration between humidity cell rinse cycles), the antimony concentration in the pore water of the Claystone/Ash backfill will exceed the 0.006 mg/L MCL by a factor of at least 20 for the first ~3 pore volumes, and exceed the MCL by a factor of at least 10 through ~8 pore volumes. The backfilled pits will thus be a long-term (e.g., several centuries or longer) source of antimony to through-flowing groundwater. Therefore, perpetual management will be required.

The groundwater model used to support the DEIS does recognize the backfilled pits as long-term pollution sources, and include an estimate for the extent of the antimony plume that will exceed the 0.006 mg/L MCL out to 300 years beyond closure. But it does not indicate the concentration that will exist with the plume leaving the pits, nor does it indicate the number of pore volumes of through flowing groundwater that would be required before the antimony concentrations in groundwater decreased below the MCL.

The DEIS partially recognizes the uncertainty in the prediction of antimony migration away from the waste rock backfill, and the groundwater study indicates that “LNC will undertake additional geochemical testing to evaluate the sorption capacity of antimony onto volcanic tuff” (the volcanic tuff is the down-gradient geologic unit, Piteau 2020). The nature of this antimony adsorption onto the down-gradient volcanic tuff will be important. If antimony is irreversibly removed from solution by the volcanic tuff, then this natural attenuation mechanism could dramatically reduce the extent of the plume of antimony in groundwater. But if the antimony is attenuated by ion exchange to the mineral surfaces in the tuff, then the antimony plume will slow down relative to groundwater flow but antimony concentration in the plume may remain at approximately the same concentration, leaving a long-term slow moving plume of contaminated groundwater.

In response, the model of antimony fate and transport (and other pollutants of concern) needs to:

1) Incorporate the expected concentrations of pollutants in the backfilled waste that are based on desorption models fit to the measured concentrations in the humidity cell tests. (The existing humidity cell tests should support estimates of concentrations change as the backfill as it is flushed with ~20 pore volumes of groundwater.)
2) Incorporate measurements of adsorption of antimony and other pollutants onto the Volcanic Tuff into the model estimates for pollutant concentrations in the groundwater plume that would migrate down-gradient from the backfilled pits.

3) Present model estimates for concentration contours of antimony and other pollutants that will exist within and down-gradient from the backfilled pits over the 300 year simulation period.

4) Present a model for an alternative closure option for the backfilled pits that prevents the release of pollutants in a groundwater plume, such as a period of active pumping and treating of pore water until the discharge from the waste-rock backfill is below the groundwater MCLs.

3. A Poor Pollution Release Model is used in the DEIS

Modify the Thacker Pass groundwater solute transport model so that it uses a standard adsorption/desorption equation to more rigorously estimate the release of pollutants from pit backfill to the groundwater.

The desorption of trace constituents like antimony and arsenic from mineral surfaces is typically estimated using chemical models that account for factors such as the total adsorption capacity of the surface, multiple adsorption sites, and others. For example, a linear “Kd” model assumes that there is a constant ratio between adsorbed and dissolved concentrations of pollutants, and the Langmuir or Freundlich adsorption equations account for commonly observed non-linear behavior in adsorption/desorption reactions. Assuming that the dissolution of arsenic and antimony are surface exchange reaction and are not related to the oxidation of sulfide sulfur minerals, then the existing humidity cell tests are in fact just simple desorption batch reaction tests. These tests can be used to estimate pollution release from waste rock by fitting the leachate concentrations measured in humidity cell effluent to an adsorption/desorption equation.

This approach—using adsorption isotherm equations based on measured pollutant desorption—has 3 advantages: 1) It is a standard and widely applied geochemical method used in groundwater solute transport modeling, 2) it accounts for changing aqueous concentrations over the full range of pollutant concentrations in the source rock, and 3) it accounts for the mass balance on pollutants remaining in the source over time. On a final positive point, this approach should be simpler than the pollutant-release assumptions in the current model. These three adsorption equations (linear, Freundlich and Langmuir) are already included as solute transport options in the USGS Modflow MT3D and then PhreeqC geochemical model that are used in the Thacker Pass water quality model study (Piteau 2020).

4. Mitigation Plan Lacks Sufficient Detail for Complete Analysis as Required by NEPA

The DEIS shows existing monitoring wells, but there is no map and table of the proposed monitoring wells for water quality. This aspect is passed on to the state of Nevada in the state level permitting. However, in order to evaluate the effectiveness of the monitoring and mitigation plan the locations and screening levels of each well are needed.

Also not determined in the DEIS is the boundary of compliance for groundwater water quality. Again, the DEIS indicates that the state of Nevada will establish compliance boundaries, but again mitigation plans cannot be fully assessed without knowledge of where compliance will be measured.

5. The Pit Backfill Will Degrade Groundwater and Violate Nevada Law and Result in UUD
The pore water that forms in the waste rock of the backfilled pits should be considered waters of the state, and thus subject to compliance with Nevada groundwater quality standards.

The discussion of post-closure groundwater monitoring of the Thacker Pass project indicates that “monitoring wells to measure pore water conditions in the backfill post-closure . . . [in sub-pit MW-05 and West sub-pit MW-06] . . . would not be compliance points”. It is not clear why the water in the pit backfill—a zone of saturated groundwater—will not be considered waters of the State of Nevada and thus subject to compliance with applicable groundwater quality standards. Further, once saturated, the backfilled waste rock will be a hydraulically conductive zone with an extremely high water storage value (porosity ~0.3, Table 5.3 in Piteau 2020), and could thus potentially be tempting future sources of water.

6. BLM Needs to Establish a LongTerm Funding Mechanism to Cover Perpetual Management
The rate at which antimony concentrations are predicted to decrease in the backfilled pits (Piteau 2020b) is much higher than expected given the relatively slow rate at which antimony was leached from samples of waste rock that were subjected to humidity cell testing.

The groundwater model of antimony concentrations in saturated pit backfill predicts that the concentration of antimony in the South Sub-Pit and North Sub-Pit will decrease by a factors of ~3 and ~6, respectively, by the 200 years after the end of mining (Piteau 2020b, Figure 2.1, inserted below).

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It’s not clear how much water the model assumes would be flushed through the backfill over this 200 year simulation period, but the limited extent of the predicted plume of antimony between post-closure year 20 and year 200 suggests that it is less than one pore volume (see below, Figures 2.5 [model year 20] and Figure 2.8 [model year 200] from Piteau 2020b).

In contrast to these model estimates of rapid decrease in antimony concentrations in the backfill, the estimate that GBRW provided for the rate at which antimony would be flushed from the Claystone/Ash waste rock (this rock type is estimated to comprise be 65% of the backfilled waste rock) was that decreasing the pore-water concentration of antimony under field conditions by
only 50% would take ~20 pore volumes of flushing, as discussed above Water Quality Aspects sub-comment 2.

In response, the model used to estimate antimony flushing from backfilled waste needs to:

1. More rigorously incorporate the desorption of antimony from the Thacker Pass waste rock, as measured in the humidity cell tests, and
2. Illustrate how the groundwater solute transport model simulates flushing of antimony from a representative column of average waste.

In terms of assessing impacts, this simple model simulation needs to first illustrates how the concentrations of antimony and other pollutants change in a unit block of waste rock as a function of pore volumes of water flushed through the rock. Once this simple simulation can show that the model of antimony desorption compares favorably to the desorption measured in humidity cell tests, the field-scale model of long-term antimony transport under post-closure field conditions can be used to estimate of extent and duration of pollutant migration from the backfilled pits.

7. **Modeling Analysis Supporting Mitigation Option 4 is Inadequate**

Water quality modeling should be conducted to estimate the concentrations of antimony, arsenic, and other solutes that would occur in Mitigation Option 4 (“Partial backfill closure) that would leave an evaporative wetland in the pits.

The “Partial backfill closure (Option 4)” includes closing the Thacker Pass open pits in a manner that allows “the formation of a wetland in the South Sub-pit. . . [that] function[s] as a hydraulic sink for backfilled pits whose capture zone extends into the saturated portions of the North and West sub-pits” (Piteau 2020b).

Such a wetland in the backfilled pits would be a vegetated evaporative sink that draws its water primarily by up flow through the underlying waste rock. In such terminal basins (i.e., zero outflow), the concentration of solutes loaded by all inflowing water increases until they reach some concentration limiting value (e.g., adsorption, mineral precipitation, co-precipitation, etc.). The rate at which solutes increase in evaporating terminal basins depends on the depth of the water body. In a shallow wetland overlying a backfilled Thacker Pass pit, the potential evaporation far exceeds annual precipitation, and most water would enter the wetland by upflow from the waste rock below. That is, groundwater would flow into the waste rock backfill, leach solutes from the waste rock, notably arsenic and antimony, concentrate these pollutants to their solubility limit whenever the shallow wetland was evaporated to dryness, and allow uptake of this concentrated solution by vegetation. It’s hard to imagine how these conditions would not lead in just a few years to a vegetated wetland full of water and plants that were acutely toxic to terrestrial and avian wildlife. We thus believe that closure with a wetland over the waste-rock backfill is a terrible mitigation option. But we also believe that it is very important that this option be retained as an alternative and be subjected to quantitative water quality modeling and at least a screening level ecological risk assessment. This quantitative analysis would create an administrative record illustrating the risk of wetland-in-pit-backfill mine closure, and would add to the institutional knowledge within Nevada’s environmental regulatory agencies of this potential risk.
5. BLM Needs to Establish a Long-Term Funding Mechanism to Cover Perpetual Management
As noted above the need to treat toxic drainage from the backfilled pit will be required well past the proposed closure

Air Quality Aspects

1. Incorrect Air Quality Baseline
The DEIS does not use relevant baseline data for the air quality analysis. Baseline data for CO and NO$_2$ was based on data from Yosemite National Park-Turtleback Dome, and for SO$_2$ from White Mountain Research Center-Owens Valley Lab. According to Appendix K of the DEIS, “may be considered representative of a rural area in Nevada for conservative SO$_2$ background concentrations. Both stations (Yosemite and White Mountain in California) are in relatively rural settings in terms of nearby population centers and traffic activity” (DEIS App K, p20). Again, the DEIS does not justify this assertion with technically defensible data and analysis. In fact both Yosemite National Park-Turtleback Dome and White Mountain Research Center–Owens Valley Lab are significantly different than the region that contains Thacker Pass. Thacker Pass bridges two agriculturally intensive valley’s, which is not the case for the locations used in the DEIS.

In the case of H$_2$S, PM$_{2.5}$, and PM$_{10}$ the DEIS simply states that Nevada-based, NDEP baseline values are use, but with no justification for this assignment. In particular there is no justification for a zero H$_2$S background level especially in an agricultural area and were riparian zones exist. The existence of Nevada baseline values does not absolve BLM from conducting its own baseline analysis.

An incorrectly determined baseline leads to an incorrect analysis and the inability to analyze the effectiveness of air quality mitigation plan.

2. Sulfur Dioxide Emissions Analysis is Inadequate
The DEIS cites very low sulfur dioxide (SO$_2$) emissions from the facility as shown in Table 4.10. For Phase I SO$_2$, the table shows 75.8 tons per year (TPY) for the production of 337,895 tons of sulfuric acid (H$_2$SO$_4$) per year. This is a very low emission rate that currently does not exist in the United States for sulfuric acid production. Furthermore, Phase II of the mine plan will involve doubling the acid production; however, SO$_2$ emissions are still only 76.1 TPY. Phase II would be a truly impressive emission capture rate. The DEIS does not justify these emission numbers. Appendix K of the DEIS provides only the following statement;

“In order to minimize the emissions from the sulfuric acid plant, LNC has committed to installing a state-of-the-art scrubbing control, which is above customary industry standard. As a result, the sulfur dioxide and acid mist emissions from the sulfuric acid plant will be well below the emission standards (4 pounds SO$_2$ per ton of acid produced and 0.15 pounds H$_2$SO$_4$ per ton of acid produced) in the Code of Federal Regulations, Title 40, Part 60 (40 CFR 60), Subpart H, Standards of Performance for Sulfuric Acid Plants. While the exact scrubbing system has not yet been determined, LNC has committed to installing a control that, at the minimum, meets the emission levels used in this analysis.” (DEIS, App. K, pp 6-7)

Indeed, the scrubbing technology would have to be state-of-the-art or beyond. But, the DEIS does not discuss any specifics, it only mentions a yet to be determined technology. Thus, there

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is no way for there to be an analysis of the effectiveness on this technology as a mitigation for sulfur dioxide emissions in violation of NEPA. There must be evidence of the effectiveness of the scrubbing technology.

3. **The NO$_2$ Modeling Scheme is Incomplete**

   The modeling approach for the production of NO$_2$ from NO ignores the oxygen reaction pathway assuming that the ozone pathway would predominate so significantly such that NO$_2$ production by way of oxygen is unimportant. This assumption is quite valid in an urban setting, but it is questionable in a rural setting where ozone levels are likely to be very low. The analysis of air emissions needs to explore the oxygen pathway to be sure that correct values of NO$_2$ are used in the air quality analysis.

4. **Cumulative Air Quality Analysis is Inadequate**

   The cumulative analysis will be inadequate based on the above three comments.

**Wildlife Issues**

1. **The DEIS Misrepresents the BLM’s Legal Obligations by Focusing on Resource Extraction and Downplaying the Federal Government’s Obligations to Protect Wildlife, Habitat and Other Land Uses.**

   The DEIS describes the Federal Land Management and Policy Act (FLPMA) as follows:
   
   “This act did not amend the Mining Law of 1872, but did affect the recordation and maintenance of claims. Persons holding existing claims were required to record their claims with the BLM, and all new claims and sites were required to be recorded with the BLM. The law gave the BLM information on the location and number of unpatented mining claims, mill sites, and tunnel sites; helped determine the names and addresses of current owners; and helped remove any cloud of title on abandoned claims.”

   
   “[T]hat it is the policy of the United States 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; 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.”

   43 U.S.C. §1701 (a) and (a)(8). Furthermore, FLPMA states, “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). Under FLPMA, the requirement that

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the Secretary prevent unnecessary or undue degradation is not waived for mining. See second and final sentences of 43 U.S.C. § 1732(b).

Similarly, the DEIS’s description of the Migratory Bird Treaty Act omits that under Section 704 of the MBTA, USFWS is “authorized and directed” to determine the exceptions to the MBTA’s take prohibition, i.e., USFWS has the sole authority and responsibility “to determine when, to what extent, if at all, and by what means” taking of migratory birds is permissible, and to “adopt suitable regulations permitting and governing the same.” 16 U.S.C. § 704(a). Significantly, the statute does not have a mens rea requirement, i.e., entities that violate the Act can be prosecuted on a strict liability basis regardless of intent or motive to take or kill migratory birds. Although in 2017 the Department of the Interior attempted to overturn decades of federal policy on legal liability for incidental (non-purposeful) take of MBTA-protected birds with Solicitor’s Opinion M-37050, in August 2020, that M-Opinion was vacated by a federal court. See Natural Resources Defense Council v. U.S. Dep’t of the Interior, No. 1:18-cv-4596 (S.D.N.Y. Op. and Order Aug. 11, 2020).7

In 2015, USFWS proposed to promulgate regulations that would create permits authorizing incidental (non-purposeful) take of birds protected by the MBTA. However, these regulations were never finalized, and currently there are no permits available to authorize the incidental take of MBTA-protected birds. Instead, USFWS works with companies on measures to avoid, minimize and mitigate the impacts of industrial projects on birds protected by the MBTA. Such collaboration relies on companies and industries voluntarily taking actions agreed upon with or recommended by USFWS to protect migratory birds. It is very important to note that USFWS, not BLM, determines whether a company’s projects have illegal incidental take of MBTA-protected birds.

Furthermore, the DEIS’s description of EO 131868 and its implementing Memorandums of Understanding (MOUs) between federal agencies such as BLM and USFWS omits crucial provisions. Such MOUs do not merely require that an agency’s environmental analysis “evaluates the effects of actions and agency plans on migratory birds, with emphasis on species of concern.” DEIS at O-9. Instead,

“(e) Pursuant to its MOU, each agency shall, to the extent permitted by law and subject to the availability of appropriations and within Administration budgetary limits, and in harmony with agency missions:

(1) support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;

(2) restore and enhance the habitat of migratory birds, as practicable;

(3) prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable;

(4) design migratory bird habitat and population conservation principles, measures, and practices, into agency plans and planning processes (natural resource, land man-

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agement, and environmental quality planning, including, but not limited to, forest and rangeland planning, coastal management planning, watershed planning, etc.) as practicable, and coordinate with other agencies and nonfederal partners in planning efforts;

(5) within established authorities and in conjunction with the adoption, amendment, or revision of agency management plans and guidance, ensure that agency plans and actions promote programs and recommendations of comprehensive migratory bird planning efforts such as Partners-in-Flight, U.S. National Shorebird Plan, North American Waterfowl Management Plan, North American Colonial Waterbird Plan, and other planning efforts, as well as guidance from other sources, including the Food and Agricultural Organization’s International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries;

(6) ensure that environmental analyses of Federal actions required by the NEPA or other established environmental review processes evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern;

(7) provide notice to the Service in advance of conducting an action that is intended to take migratory birds, or annually report to the Service on the number of individuals of each species of migratory birds intentionally taken during the conduct of any agency action, including but not limited to banding or marking, scientific collecting, taxidermy, and depredation control;

(8) minimize the intentional take of species of concern by: (i) delineating standards and procedures for such take; and (ii) developing procedures for the review and evaluation of take actions. With respect to intentional take, the MOU shall be consistent with the appropriate sections of 50 C.F.R. parts 10, 21, and 22;

(9) identify where unintentional take reasonably attributable to agency actions is having, or is likely to have, a measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. With respect to those actions so identified, the agency shall develop and use principles, standards, and practices that will lessen the amount of unintentional take, developing any such conservation efforts in cooperation with the Service. These principles, standards, and practices shall be regularly evaluated and revised to ensure that they are effective in lessening the detrimental effect of agency actions on migratory bird populations. The agency also shall inventory and monitor bird habitat and populations within the agency’s capabilities and authorities to the extent feasible to facilitate decisions about the need for, and effectiveness of, conservation efforts;

(10) within the scope of its statutorily-designated authorities, control the import, export, and establishment in the wild of live exotic animals and plants that may be harmful to migratory bird resources;

(11) promote research and information exchange related to the conservation of migratory bird resources, including coordinated inventorying and monitoring and the collection and assessment of information on environmental contaminants and other physical or biological stressors having potential relevance to migratory bird conservation. Where such information is collected in the course of agency actions or supported through Federal financial assistance, reasonable efforts shall be made to share such information with the Service, the Biological Resources Division of the U.S. Geological Survey, and other appropriate repositories of such data (e.g, the Cornell Laboratory of Ornithology);

(12) provide training and information to appropriate employees on methods and means of avoiding or minimizing the take of migratory birds and conserving and restoring migratory bird habitat;
(13) promote migratory bird conservation in international activities and with other countries and international partners, in consultation with the Department of State, as appropriate or relevant to the agency’s authorities;

(14) recognize and promote economic and recreational values of birds, as appropriate; and

(15) develop partnerships with non-Federal entities to further bird conservation.”

EO 13186 at 3854 to 3855, emphases added.

Moreover, BLM has additional responsibilities under its MOU with USFWS that implements EO 13186. The MOU states that both BLM and USFWS shall:

“A. As practicable, protect, restore, and conserve habitat of migratory birds, addressing the responsibilities in Executive Order 13186.

B. Follow the FWS Bald Eagle Management Guidelines, as appropriate and consistent with agency missions, which can be found at https://www.fws.gov/migratorybirds/pdf/management/nationalbaldeaglenanagementguidelines.pdf. The Guidelines are a tool for landowners and planners who seek information and recommendations regarding how to avoid disturbing bald eagles. The document should be used in concert with a site-specific analysis to ensure all site conditions have been evaluated and addressed in avoidance and minimization measures. Many states and some tribal entities have developed state-specific management plans, regulations, and/or guidance for landowners and land managers to protect and enhance bald eagle habitat, and the FWS encourages the continued development and use of these planning tools to benefit bald eagles. C. Follow other migratory bird conservation measures as appropriate and consistent with agency missions. The measures, which are currently being developed, are anticipated to contain information and recommendations regarding how to avoid disturbing raptors (including golden eagles) and other migratory birds and how to avoid negatively affecting their populations.

D. Work collaboratively to identify and address issues that affect species of concern, such as migratory bird species listed in the Birds of Conservation Concern (BCC) and FWS’s Focal Species initiative. Potential activities could include monitoring abundance of birds and the creation, conservation, and protection of habitats important to these species.

E. Promote and contribute migratory bird population and habitat data to interagency partnership databases including the: National Biological Information Infrastructure (NBII), the Breeding Bird Research and Monitoring Database (BBIRD), Avian Knowledge Network (AKN), Waterbird Monitoring Partnership Database (WMPD), Natural Resources Monitoring Partnership (NRMP), and other databases that meet the needs of the Parties.

F. Adopt the recommendations in the NABCI Monitoring Subcommittee report Opportunities for Improving Avian Monitoring” (February 2007), where applicable, when developing and implementing migratory bird conservation activities that warrant monitoring. Take appropriate steps to implement actions identified in the NABCI Monitoring Subcommittee’s Annual Work Plan (https://nabci-us.org/how-we-work/monitoring/).

G. Provide training to agency employees on bird population and habitat inventory and monitoring methods, as well as management practices that minimize adverse impacts and promote beneficial proactive approaches to migratory bird conservation.

H. Increase awareness of the information contained within comprehensive planning efforts for migratory birds, such as the bird conservation initiatives, to facilitate integration of conservation measures into land management and project planning.
I. Participate on the interagency Council for the Conservation of Migratory Birds established by the Executive Order to evaluate the implementation of this MOU. The Director of the BLM, or a representative designated by the BLM Director, will serve on the Council.

USFWS-BLM MOU at 4-5, emphases added.

Moreover, BLM shall:

A. Maintain or update current policy guidance regarding management of migratory birds and their habitat pursuant to the MBTA and EO 13186.

B. Address the conservation of migratory bird habitat and populations when developing, amending, or revising management plans for BLM lands, consistent with the Federal Land Policy and Management Act, Endangered Species Act, and other applicable law. When developing the list of species to be considered in the planning process, BLM will consult the current FWS Species of Concern lists (see Definitions under Species of Concern).

C. Evaluate and consider management objectives and recommendations for migratory birds resulting from comprehensive planning efforts (this includes the Partners in Flight North American Landbird Conservation Plan, North American Waterfowl Management Plan, U.S. Shorebird Conservation Plan, Western Hemisphere Shorebird Reserve Network, North American Waterbird Conservation Plan, and other planning integrated through the NABCI).

D. During the planning process, consider special designations that may apply to all or part of the planning area, such as Important Bird Areas in the United States, and consider such designations in the appropriate plan documents.

E. Participate in planning efforts of Bird Conservation Regions (BCRs) to facilitate development of conservation actions that benefit migratory bird species across multiple land ownerships, such as large-scale watersheds and coastal area restoration projects. This would include collaborative regions specific inventory monitoring such as that initiated among BLM, FWS, and the states in BCR 17. Increase awareness within the agency of information contained within these plans and within other comprehensive planning efforts for migratory birds.

F. At the project level, evaluate the effects of the BLM’s actions on migratory birds during the NEPA process, if any, and identify where take reasonably attributable to agency actions may have a measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. In such situations, BLM will implement approaches lessening such take. Examples of possible approaches include those conservation measures listed in VII.G below.

G. In coordination with the FWS, develop conservation measures and ensure monitoring of the effectiveness of conservation measures to minimize, reduce or avoid unintentional take. As needed, modify conservation measures to be more effective in reducing unintentional take and, as practicable, to restore and enhance the habitat of migratory birds. Examples of potential conservation measures include taking steps to:

1. Avoid identified raptor nests during motorcycle races.
2. Prevent bird entry into heater vents at oil and gas production facilities.
3. Avoid areas of raptor concentration when placing wind turbines.
4. Avoid nesting season during rangeland improvements, such as prescribed fire.
5. Manage livestock to avoid impacts on nesting birds and to improve migratory bird habitat.
6. Alter the season of some recreational activities and events to minimize disturbance of migratory bird breeding activities.
7. Modify wild horse and burro gathering activities to minimize disturbance of migratory birds during the breeding season.

8. **Retain snags for nesting structures where snags are underrepresented.**
9. **Retain the integrity of breeding sites.**
10. **Minimize collisions with fences and meteorological towers on public lands through construction and marking stipulations.**

H. Work with Federal and non-Federal partners such as the Strategic Habitat Conservation partnership and joint ventures to integrate migratory bird and habitat conservation into BLM planning efforts. This would include participation in the Council for the Conservation of Migratory Birds to oversee the implementation of the Executive Order 13186 and appropriate BLM participation in Joint Venture boards.

I. Integrate migratory bird conservation measures, as applicable, into future Activity Management Planning (Grazing, Recreation, Cultural Resources, Wildlife, etc.), surface operating standards and guidelines for oil and gas exploration and development, and renewable (wind, solar, and geothermal) energy development NEPA mitigation. This will address habitat loss and minimize negative impacts.

J. Complete and begin implementation of a migratory bird conservation strategic plan within two years of the signing of this MOU, contingent upon the completion of the FWS Raptor Conservation Measures. The strategic plan will include the BLM’s priority goals and objectives for bird conservation based upon legal responsibilities, and physical and natural resource opportunities. While foundation for this initially will be the existing four bird conservation strategies of Fish and Wildlife 2000, this comprehensive strategy will be driven by the needs of Bird Species of Concern. The BLM-wide plan will emphasize addressing the needs for inventory, monitoring, habitat treatments, and monitoring effects of habitat treatments and will be consistent with BLM wildlife program priority workload measures. Outreach, marketing, and partnerships, including economic and recreational value of birds, will also be addressed in the plan.

K. Prevent and manage invasive species for the benefit of migratory birds through collaboration and local participation in cooperative weed management and invasive species management plans and efforts through the BLM invasive species program.

L. **Minimize or prevent the pollution or detrimental alteration of the environments utilized by migratory birds whenever practical by assessing information on environmental contaminants and other stressors relevant to migratory bird conservation.**

M. **Support management studies and research to identify the habitat conditions needed to conserve migratory birds and to evaluate the effects of management activities on habitats and populations of migratory birds.**

N. Promote participation in NABCI, PIF, training of international students at the National Training Center, international joint ventures, and resource personnel exchange programs.

O. Recognize and promote the value of migratory birds to the public through support of, and participation in, International Migratory Bird Day events; through development of Watchable Wildlife viewing sites that focus on bird conservation; and by sponsoring bird watching and appreciation activities (e.g. bird festivals and celebrations and youth education (WOW) programs) that draw visitors to the BLM lands.

P. Continue and enhance partnerships with non-Federal entities to further bird conservation to further regional conservation planning, outreach, and education.
Q. BLM will follow all migratory bird permitting requirements for activities subject to 50 CFR part 21. While working through the permitting process with FWS, the BLM will, to the maximum extent practicable, minimize the intentional take of species of concern and, if necessary, develop standards and procedures regarding such take.

USFWS-BLM MOU at 5-8, emphases added.

The USFWS-BLM MOU calls for BLM to complete a migratory bird conservation strategic plan within two years of the signing of the MOU. The plan that BLM produced contains a number of goals and measures that apply to the Thacker Pass Lithium Mine Project, including the following:

**Goal 1: Address BLM priority migratory birds during the NEPA and planning process, including consistent consideration of national and regional conservation goals and objectives.**

In order to address migratory birds in land use planning, BLM offices shall identify and understand the bird conservation goals and habitat protection objectives for the planning area’s Bird Conservation Region, promoted through the North American Bird Conservation Initiative, contained in the comprehensive bird conservation plans. Then, as appropriate, incorporate these into the Resource Management Plan (RMP)s, implement identified actions and, with partners, monitor the results of these management actions.

- Partners in Flight (http://www.partnersinflight.org)
- North American Waterfowl Management Plan
- North American Waterbird Conservation Plan
- U.S. Shorebird Conservation Plan (http://www.shorebirdplan.org/plan-and-council/)

**Goal 2: Address national and regional conservation goals and objectives for migratory birds.**

**Action 1:** Within one year of plan approval, the BLM WO shall incorporate consideration of national and regional bird conservation plan goals in every Land Use Planning document.

**Action 2:** Within one year of plan approval, the BLM WO shall develop metrics for determining the effectiveness of plan implementation and guidance on outcomes to migratory birds.

**Action 3:** Within one year of plan approval, the BLM WO shall complete a draft of the handbook for migratory bird conservation on BLM public lands. The Handbook will increase awareness and use of third-party “best available knowledge” as information to support planning decisions and NEPA analyses. *(Division of Fish and Wildlife Conservation Lead)*

**. . . .**

**EMPHASIS AREA 2: Migratory Bird Conservation Measures Goal 2: Identify and implement feasible measures, in coordination with the USFWS, to avoid or minimize unintentional take of migratory birds that may result from conducting BLM authorized activities (Appendix E).*
BLM Strategic Plan for Migratory Bird Conservation at 10 and 11, emphasizes original.\(^9\) In its Migratory Bird Strategic Conservation Plan, BLM made significant commitments to implementing EO 13186 and its related BLM-USFWS. Since many of these commitments involve BLM’s Resource Management Plans, they should permeate BLM’s management actions and be visible in the evaluation of potential approvals of projects such as the Thacker Pass Lithium Mine Project, which must conform to those plans. Furthermore, although the Project DEIS names Birds of Conservation Concern, BLM Special Status Species and NDOW species of concern that have been observed in the Project Area during surveys,\(^10\) but doesn’t include consistent consideration of national and regional conservation goals and objectives, starting with not identifying those goals and objectives in the DEIS.

Appendix H of the DEIS identifies birds that have been identified by USFWS, BLM, and Nevada Department of Wildlife (NDOW) as being of conservation concern:

- Bank Swallow [c]
- Brewer’s Sparrow [a][c]
- Canvasback [c]
- Common Nighthawk [c]
- Lewis’s Woodpecker [a][c]
- Loggerhead Shrike [a][c]
- Long-billed Curlew [a][b][c]
- Redhead[c]
- Sage Thrasher [b][c]
  - [a] BLM Special Status Species
  - [b] USFWS Bird of Conservation Concern
  - [c] NDOW species of concern

DEIS at H-24 to H-25.

In order to be consistent with EO 13186 and its related USFWS-BLM implementing MOU, the DEIS must not only include these birds in the Project’s environmental analysis but also incorporate conservation measures. Moreover, by approving the Project without fully avoiding, minimizing, and mitigating impacts to migratory birds of USFWS, BLM, and NDOW conservation significance, BLM is managing these species for decline, which is not in accordance with the commitments the federal government, including BLM, has made in international migratory bird conservation plans. At a minimum, there should be a Project alternative that maximizes conservation of these birds in accordance with the goals of the migratory bird conservation plans in which the federal government is a participant.

The DEIS’s descriptions of FLPMA and the MBTA should be revised so that the public and BLM itself are not misled by the DEIS’s cherry-picked, overly narrow summaries of these laws. BLM should also revise the Project’s environmental analysis in accordance with the full extent of FLPMA, MBTA and the federal government’s commitments to national and international migratory bird conservation plans, in order to ensure that the Project’s environmental analysis complies with NEPA and all other applicable federal laws and regulations.


\(^10\) DEIS, Appendix H (Wildlife and Special Status Species Information) at H-24 through H-25.
2. **The Project Must Comply with Applicable RMPs.**

As part of its FLPMA compliance, BLM must ensure that all aspects of the Project comply with the applicable Resource Management Plan (RMP), including any Amendments such as for the Greater Sage Grouse (see Appendix N of the DEIS). BLM is under the mistaken view that, regardless of the fact that the Project will violate the RMP/Amendments the BLM must nonetheless authorize such use/access under FLPMA, the 36 CFR Part 3809 mining regulations, and the 1872 Mining Law.

For example, regarding the violation of the Greater Sage Grouse RMP Amendments, BLM stated: “LNC holds valid existing rights and therefore is not subject to the application of seasonal restrictions identified in the 2015 and 2019 GRSG Amendments.” DEIS Appendix N. The same is true for BLM’s acknowledgement that the Project would violate the Class II Visual requirements of the RMP.

BLM is wrong. BLM must ensure compliance with all RMP provisions under FLPMA. This is required under the general land use conformity requirement of FLPMA, as well as BLM’s duty to “prevent unnecessary or undue degradation” of the public lands. 43 U.S.C. 1732(b). FLPMA requires that all resource management decisions “shall conform to the approved [land use] plan.” 43 C.F.R. § 1610.5-3(a). See Ore. Natural Res. Council Fund v. Brong, 492 F.3d 1120, 1128 (9th Cir. 2007) (holding that BLM project components “are inconsistent with the Plan and, consequently, violate FLPMA.”). BLM “shall take appropriate measures . . . to make operations and activities under existing permits, contracts, cooperative agreements or other instruments for occupancy and use, conform to the approved [land use] plan . . . .” See 43 C.F.R. § 1610.5-3(b).

If a proposed action is not clearly consistent with the land use plan, BLM must either rescind the proposed action or amend the plan, complying with NEPA and allowing for public participation. See 43 C.F.R. §§ 1610.5-3, 1610.5-5. See also National Parks and Conservation Ass’n v. FAA, 998 F.2d 1523, 1526 (10th Cir. 1993) (nonconforming land use required RMP amendment). The IBLA recognizes that this “consistency” requirement reflects the mandatory duty to fully and strictly comply with the governing land management plans. See, e.g., Jenott Mining Corp., 134 IBLA 191, 194 (1995); Uintah Mountain Club, 112 IBLA 287, 291 (1990); Marvin Hutchings v. BLM, 116 IBLA 55, 62 (1990); Southern Utah Wilderness Alliance, 111 IBLA 207, 210-211 (1989).

There is no exception to the Plan requirements for mineral operations. As a leading federal court decision interpreting FLPMA and the Part 3809 regulations noted, BLM specifically requires compliance with all Plan provisions.

Interior argues that the 2001 Regulations satisfy FLPMA’s multiple use policies by expressly including a performance standard that **all operations under § 3809 be managed in accordance with the applicable land use plans.** Interior directs the court to § 3809.420(a)(3), which provides as follows:

“Land use plans. Consistent with the mining laws, your operations and post-mining land use must comply with the applicable BLM land-use plans and activity plans, and with coastal management plans under 16 U.S.C. § 1451, as appropriate.”

43 C.F.R. § 3809.420(a)(3). Relying on § 3809.420(a)(3), as well as the provisions set forth in BLM’s Land Use Planning Handbook, Interior maintains that **when BLM receives a proposed plan of operations under the 2001 rules, pursuant to Section**
3809.420(a)(3), it assures [sic] that the proposed mining use conforms to the terms, conditions, and decisions of the applicable land use plan, in full compliance with FLPMA's land use planning and multiple use policies."


In addition, as noted herein, BLM bases its failure to ensure compliance with the RMP on its view that “LNC holds valid existing rights and therefore is not subject to the application of seasonal restrictions identified in the 2015 and 2019 GRSG Amendments.” Yet BLM nowhere ascertains and verifies the extent of these “valid existing rights.” As noted herein, the simple fact that LNC has filed mining claims across the Project site does not establish “valid existing rights.” Without verifying whether the company truly holds valid existing rights on all its claims, BLM arbitrarily and capriciously limits its FLPMA and NEPA reviews and its authority to protect public land under FLPMA.

3. The DEIS Fails to Take a Hard Look at the Project’s Impacts to Greater Sage-Grouse

The project site has been documented to be sage-grouse habitat. Portions of the Project area are identified as Priority Habitat Management Area (PHMA), General Habitat Management Area (GHMA) (DEIS at 4-28). Using the 2015 ARMPA habitat mapping, the Proposed Action would disturb approximately 5,011 acres of PHMA and 545 acres of GHMA. Using the 2019 ARMPA habitat mapping, approximately 5,695 acres of PHMA would be disturbed (DEIS p 4-39).

The applicant admits that habitat fragmentation and spread of invasive weeds will impact an already declining sage-grouse population. Sage-grouse are experiencing huge population declines, and even crashes in many populations, across its range, and large projects such as Thacker Pass Lithium will only contribute for the need to list the Greater sage-grouse under ESA.

According to the DEIS:

The construction of transmission line structures could increase predation by enhancing local raptor and corvid (raven) populations. Subsidized food sources such as garbage and roadkill, elevated nest platforms provided by transmission lines, and landscape alterations such as transitions to annual grasses, can also increase raven populations. (DEIS p 4-40)

... A raven control plan would be developed in coordination with BLM and NDOW and implemented to deter raven predation of GRSG so that overall numbers of sage-grouse and the recruitment of young sage-grouse into the local breeding population does not decrease due to conditions enabled by the construction and operation of the Project. (DEIS p 4-40)

This Raven Control Plan would be deferred until after public review and after the final agency decision. This important plan and mitigation measure needs to be analyzed now, and in the Final EA, not at a later date after the project is approved.

Any mitigation negotiated with the Conservation Credit System should be fully disclosed to the public.

The DEIS underestimates the Project’s impacts to sage-grouse. The Project site is occupied by sage-grouse from the Lone Willow Population Management Unit (Lone Willow PMU), which is a subpart of the Western Great Basin population of greater sage-grouse. The FEIS for the 2015 Grouse ARMPA describes mining as a substantial, but non-imminent threat to the Western Great
Basin population of greater sage-grouse. 2015 Grouse AMPA FEIS at 3-36.\textsuperscript{11} This is based on the 2013 Conservation Objectives Team Report (COT Report), which states that the substantial but non-imminent threat is specifically from lithium and uranium exploration and extraction:

The Lone Willow portion of the Western Great Basin population (connected with Oregon) was affected by a very large wildfire in 2012. The Holloway Fire burned approximately 214,000 acres in Nevada and 245,000 acres in Oregon of which about 140,000 acres in Nevada and 221,000 acres in Oregon were considered important or essential sage-grouse habitat. The Miller Homestead fire in Oregon included an additional 162,000 acres of sagebrush habitat within its perimeter, 149,000 acres of which was identified as a PAC for the Western Great Basin population. Fire and annual grasses should be characterized as substantial and imminent threats within this portion of the population. Additionally, this area faces threats from lithium and uranium exploration and extraction. Along with infrastructure that may come with this potential development, it may be appropriate to characterize mining and infrastructure as substantial, nonimminent threats to this portion of the population.

COT Report at 84.\textsuperscript{12} Since the 2013 COT Report and 2015 Grouse ARMPA, the situation has changed. Lithium exploration and mining are now an imminent threat to the Lone Willow PMU and the larger Western Great Basin sage-grouse population via the Thacker Pass Lithium Mine and related Kings Valley Lithium Exploration Project.\textsuperscript{13} But the Thacker Pass DEIS completely omits the fact that the COT Report identified lithium exploration and extraction as a substantial threat to sage-grouse in this PMU, a threat that has with this project and its prior exploration become imminent.

Part of the danger to greater sage-grouse of BLM approving this project is that LNC has mining claims north of the project in the Montana Mountains, a Nevada greater sage-grouse stronghold. If BLM approves this Project, it will put greater sage-grouse in the Montana Mountains at risk, not only through the Project’s noise degrading conditions for grouse at nearby Montana Mountains leks, but also by increasing the likelihood that the Project will expand in the future into the Montana Mountains, with the less-thorough environmental analysis that often accompanies mine expansions, such as incorporating prior NEPA documents through reference rather than doing new analysis that reflects current conditions.


\textsuperscript{13}Lithium Nevada Company’s parent, Lithium Americas (formerly Western Lithium Corporation), also operates the King’s Valley Clay Mine at Thacker Pass. Its Decision Record stated that “Approximately 1200 acres of [greater sage-grouse] nesting and brooding habitat could be lost due to noise impacts.” This Decision Record also states, “Noise monitoring and adaptive management practices will be implemented with the intent to protect Greater Sage-grouse lekking behavior,” but it is unknown to the public whether this required monitoring and adaptive management have ever taken place.
The DEIS also omits the fact that the Lone Willow PMU has reached a habitat trigger, as was acknowledged in the Nevada Sagebrush Ecosystem Program’s Fall 2019 Adaptive Management Trigger Summary.14

4. Migratory Birds
Removal of 5,695 acres of prime sagebrush steppe habitat for horned larks, sagebrush sparrows, mourning doves, and Western meadowlarks is unmitigated in the EA. The only response is to try to revegetate reclaimed land after the mine potentially closes in 41 years. No discussion of how this is to be done is analyzed. Will local seeds be collected for use in reclamation? How will ancient Biological Soil Crusts be restored, as these may take a century to regrow? Cheatgrass may undoubtedly expand here with new roads, exploration, industrial activity and ground disturbance. No discussion of how old-growth native perennial grasslands, such as those that consist of bluebunch wheatgrass (Pseudoroegneria spicata= Elymus spicatus), Sandberg bluegrass (Poa secunda), and various needlegrasses (Stipa spp.). Grassland and sage-steppe birds need these kinds of complex native grasslands, yet there is no assurance that 41 years from now BLM and the applicant will plant commonly available non-native grasses such as crested wheatgrass (Agropyron cristatum) that form monocultures of poor quality habitat for birds and sage-grouse.

5. Pronghorn Antelope
Two pronghorn movement corridors lie within the project area, between summer and winter ranges (DEIS p 4-35). No mitigation is suggested. Blocking pronghorn migration routes could significantly impact the antelope populations locally. The EA fails to analyze this significant impacts, and BLM should map the movement corridors and consider other alternatives. Pronghorn antelope may avoid these mining developments, just as they avoid oil and gas developments.15

6. Pygmy Rabbit
The DEIS states about this Special Status Species:

Potential direct effects to pygmy rabbit would include the loss of up to 3,561 acres of suitable (sagebrush dominated) habitat and the potential for mortality from vehicle related collisions, crushing of adults or young in burrows, or abandonment of young in burrows...

...39 inactive burrows and 10 pellets unassociated with burrows were identified (SWCA 2019). Suitable habitat does exist within the Project area, and the loss of suitable habitat from surface disturbance or degradation, and the potential for mortality under the Proposed Action could be a significant effect to local populations. (emphasis added, DEIS p4-37)

The only mitigation measure suggested is to do “clearance surveys” of the site on delineated habitat. These might reduce impacts slightly by avoiding some direct mortality, but will not reduce the mining impacts to below significant levels. Clearance surveys involved contracted biological monitors sweeping through the entire project footprint with shovels to dig up all burrows

http://sagebrusheco.nv.gov/uploadedFiles/sagebrusheconvgov/content/Resources/Trigger_Summary.pdf
and try to find and remove all individuals of a target species. Commonly, juveniles are largely not found and suffer high mortality.

No Pygmy Rabbit Translocation Plan has been offered for public review, and if this is the sole mitigation measure for this at-risk species, then a translocation plan should be developed for pygmy rabbits, similarly to plans developed for the federally threatened Agassiz’s desert tortoise (Gopherus agassizii). An example of a desert tortoise translocation plan is referenced.\textsuperscript{16} We expect to see such a carefully thought-out plan included with the Final EA, which describes how any pygmy rabbit found would be carefully removed and transported offsite to a recipient site. This plan should include measures to ensure translocated rabbits have shelter and artificial burrows if need be, in order to avoid predation and maintain thermal requirements. A plan should also describe the methodology that is used in clearance surveys that accurately finds and removes the vast majority of rabbits prior to construction and ground-breaking to avoid direct mortality.

Translocation of desert tortoise to make way for development projects on public lands in California and Nevada across two decades has not resulted in halting the continued severe decline of this species. Based on line-distance sampling surveys to estimate population trends of tortoise across the Mojave Desert, the latest U.S. Fish and Wildlife Service report suggests most populations are actually crashing.\textsuperscript{17} Therefore, clearance surveys are not warranted as an efficacious mitigation measure for pygmy rabbit.

No mitigation is considered for destruction of delineated pygmy rabbit habitat on the project site.

The Columbia Basin population of pygmy rabbit is listed as federally endangered in Washington state under the Endangered Species Act (ESA).\textsuperscript{18} Primary threats are loss and fragmentation of habitat. There have been petitions to list the pygmy rabbit across its range by conservation organizations in the past,\textsuperscript{3} that were found not warranted by U.S. Fish and Wildlife Service. If this Lithium mine project moves forward, this will add evidence that the pygmy rabbit should indeed be reconsidered for listing under the ESA with a new petition because of significant impacts to its populations. There are many other development projects and threats occurring that are contributing to a push to list this species. The Thacker Pass Lithium mine project should not be one of them.

BLM should analyze much more detailed and substantive mitigation measures to protect pygmy rabbit habitat and populations, and avoid as much direct mortality and habitat loss as possible, in order to avoid an ESA listing petition. Stakeholders should work together to help conserve local pygmy rabbit populations with better mitigation measures that we would like to see analyzed in the final EA.


\textsuperscript{18}Nevada Fish and Wildlife Office, \url{https://www.fws.gov/nevada/nv_species/pygmy_rabbit.html}.
7. **Lahontan Cutthroat Trout**

Significant unmitigated effects could harm trout populations from indirect effects due to a lack of stormwater and flood damage impacts to nearby trout streams, including sedimentation of spawning habitats, erosion, and leaching of toxic chemicals from the project’s industrial chemical manufacturing of batteries into adjacent trout streams from storm runoff. The EA gives no mitigation measures and no analysis of these very significant impacts.

8. **Golden Eagle**

The DEIS says compensatory mitigation will reduce impacts of the mining operation to less than significant:

Alternative A includes USFWS issuing an EITP under the Eagle Act, related to mining operations within the scope of the Project. Under the Proposed Action, the applicant is requesting authorization for disturbance to and loss of annual productivity from one Golden Eagle breeding pair (territory #5 as shown on Figure 4.5-16, Appendix A) during the period of up to five years from the date of the issuance of the permit. The Proposed Action would authorize the disturbance to and loss of annual productivity from one Golden Eagle territory for a maximum of five breeding seasons. This Alternative would include monitoring of the nest site and mitigation to offset impacts to Golden Eagles.

Under this Alternative, the Project would provide the compensatory mitigation at the required 1.2:1 ratio by retrofitting electric utility poles, as discussed in the Eagle Rule Revision 2016 PEIS (USFWS 2016). The intent would be to minimize the potential for eagle electrocutions and ensure that the effects of eagle take caused by the Project are offset at the population level. (DEIS pp2.1-2.2)

Yet the DEIS does not consider direct mitigation for golden eagle nesting pairs, territorial birds, floaters through the area, and foraging habitat from trucking of ore, blasting, rock crushing, road construction, and heavy equipment operation in what is now a quiet, remote, relatively undisturbed sagebrush-steppe. A 350-foot high Clay Tailings Filter Stack is designed to be built on the site, with an average loading rate of 500 dry tons/hour in Phase 1 and 1,000 dry tons/hour in Phase 2—this is a significant amount of truck traffic. These are significant impacts that we believe compensatory mitigation offsite will not be adequate.

No mitigation measures are analyzed concerning pit dewatering, where golden eagle prey animals may be attracted to pit water and water truck water. This might attract eagles, and increase impacts to the local population. Stormwater ponds and any other ponds constructed at the plant could also attract golden eagle prey. BMPs do not indicate these ponds would be netted to prevent birds from entering, only fenced.

A new substation would require transmission line infrastructure, and this could be a collision hazard to golden eagles. This needs to be analyzed.

The meager compensatory mitigation of retrofitting electric utility poles will not fully mitigate these many significant impacts. Better compensatory mitigation should be considered, such as purchase of private parcels that hold good golden eagle nesting and foraging habitat.

Helicopter traffic in and out of the Helicopter pad is also an unanalyzed threat to local golden eagles. This needs analysis and further mitigation measures.

9. **Short-eared Owl**
The DEIS states that the short-eared owl has a high potential for occurrence on the project site. The species is a year-round resident in the region. The project will remove foraging habitat and could be a good wintering habitat for the species. It is a BLM Sensitive Species and protected under the Migratory Bird Treaty Act.

Open pits and pit lakes will create hazardous materials, waste rock, new transmission and roads will create collision hazards. Noise from construction, blasting and operation will disturb individuals and breeding including noise from helicopters.

Short-eared owls are threatened in 7 northeastern U.S. states with significant declines noted in most western states. What mitigation would compensate for the loss of so much habitat?

10. Non-Native and Invasive Plants
The DEIS admits that invasive plants, such as cheatgrass (Bromus tectorum) will most likely be spread by the mining activities. Yet no mitigation measures or Best Management Practices are considered. Cheatgrass negatively impacts sage-grouse habitat.
   Surface disturbance activities from implementation of the proposed project as well as other future projects could further spread noxious weeds and non-native invasive plant species into previously undisturbed areas. (DEIS pp 5-10)

Visual Resources
The Approved Winnemucca RMP States:
The Goal for managing the Visual Resources at Thacker Pass is to:

"Manage public land actions and activities to provide protection of the visual values and scenic quality of existing landscapes consistent with the Visual Resource Management (VRM) class objectives."

1. Thacker Pass Visual Resource Impacts
The Bureau of Land Management should maintain the Visual Resource Management Class Objectives that have been designated in the 2015 Record of Decision (ROD) and Approved Winnemucca BLM District Resource Management Plan.

According to the RMP Final Environmental Impact Statement:

"Visual Resources In general, all alternatives would involve actions that maintain or improve the quality of visual resources. In addition to relying on the visual resource contrast rating system to preserve the overall scenic quality of BLM-administered land, specific actions also maintain or improve visual resources involving air, water, flora, fauna, wildland fire, cultural resources, minerals, and recreation."

The ROD designated Visual Resource Management Classes for the entire BLM District. The BLM will manage visual resources on BLM lands under the following VRM class designations: • Class I – 418,201 acres; • Class II – 2,793,312 acres; • Class III - 3,073,906 acres; and • Class IV - 961,504 acres.

Most of the Thacker Pass area is designated VRM Class II and some is VRM Class III. The two most impacted VRM Classes in the area are defined:

Class II Objective: The existing character of the landscape is retained. The level of change to the characteristic landscape should be low. Changes can be seen but should not attract the
attention of the casual viewer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III Objective: The existing character of the landscape is partially retained. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Roughly 100,000 acres of VRM Class II lands would potentially be impacted by the Thacker Pass Project. Equally, tens of thousands of acres of VRM Class III lands could be impacted by the project.

The Federal Lands Policy Management Act (FLPMA) provides for the management and protection of public lands, including their scenic quality. ROW grants on federal lands must contain terms and conditions that would minimize damage to scenic quality and aesthetic values (Section 505a). The BLM manages land under its jurisdiction according to the goals and policies outlined in their RMPs; the 2015 Winnemucca District RMP is the applicable plan for the Thacker Pass Project. The 2015 RMP identifies the components of the VRM system that apply to lands within the Winnemucca district. The VRM system provides a means to identify visual values, establish objectives through the RMP process for managing these values, and provide timely inputs into proposed surface-disturbing projects to ensure that these objectives are met. The Project area is within VRM Class II because of the natural features and settings within the area.

VRM Classes as mapped in the Winnemucca District Resource Management Plan
2. BLM has Failed to Initiate a Plan Amendment nor a VRM Class Downgrade
When the BLM opened up the scoping process for this project, they originally intended to give us a plan amendment to the Winnemucca RMP with a 90 day comment period. This was because the project is located mostly in VRM Class II designated area under the Winnemucca RMP. As the DEIS admits, the Thacker Pass Project would not be in conformance with the RMP.

On January 21st, 2020 a Notice of Intent was released in the Federal Register. The NOI indicated that there would be a plan amendment for the DEIS review for the Thacker Pass mine. Below is the quote:

"A Land Use Plan Amendment addressing visual resources would be included with the Project and analyzed in the EIS if visual resource issues cannot be mitigated during the exploration, construction, and operation of the Project to conform with the visual resource management class-2 designation in the current RMP, approved in 2015."

According to the DEIS:

“1.5.3 Land Use Plan Conformance The Proposed Action is subject to and has been reviewed for conformance with the following plan: Winnemucca District Resource Management Plan The Proposed Action and Project alternatives conform with the BLM’s WD Record of Decision and Resource Management Plan (RMP) (ROD/RMP) with the exception of existing Visual Resource Management (VRM) designations (BLM 2015a).” (DEIS p 1-5)

The BLM has told BRW in a personal communication that there is no language in 43 CFR 3809 that requires them to downgrade the VRM Class, but According to the RMP Final Environmental Impact Statement: “Visual Resources In general, all alternatives would involve actions that maintain or improve the quality of visual resources. In addition to relying on the visual resource contrast rating system to preserve the overall scenic quality of BLM-administered land, specific actions also maintain or improve visual resources involving air, water, flora, fauna, wildland fire, cultural resources, minerals, and recreation.”

Visual resources must be protected under the Federal Land Policy and Management Act of 1976, 43 U.S.C. 1701 et. seq.;

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1. Section 102 (a)(8). States that “...the public lands be managed in a manner that will protect the quality of the...scenic...values....”
2. Section 103 (c). Identifies “scenic values” as one of the resources for which public land should be managed.
3. Section 201 (a). States that “The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including...scenic values)....”
4. Section 505 (a). Requires that “Each right-of-way shall contain terms and conditions which will... minimize damage to the scenic and esthetic values....”

1. Section 101 (b). Requires measures be taken to “ ...assure for all American...esthetically pleasing surroundings....”
2. Section 102. Requires agencies to “Utilize a systematic, interdisciplinary approach which will ensure the integrated use of...Environmental Design Arts in the planning and decision making....”

Both NEPA and FLPMA recommend that Visual Resource Management be decided on the RMP level. On a cumulative level, the Thacker Pass lithium mine would have distant visual impacts that must be thoroughly analyzed in the EIS.

A Full 90-Day Comment Period Required for RMP Amendments. To amend the RMP to accommodate the Thacker Pass lithium mine, BLM must follow NEPA implementing regulations. These include, but are not limited to, providing a full 90-day public comment for the RMP amendment, per 43 CFR §1610.2(e): “Ninety days shall be provided for review of the draft plan and draft environmental impact statement.”

43 CFR §1610.5-5:

“An amendment shall be made through an environmental assessment of the proposed change, or an environmental impact statement, if necessary, public involvement as prescribed in §1610.2 of this title, interagency coordination and consistency determination as prescribed in §1610.3 of this title and any other data or analysis that may be appropriate.
In all cases, the effect of the amendment on the plan shall be evaluated. If the amendment is being considered in response to a specific proposal, the analysis required for the proposal and for the amendment may occur simultaneously.

In the same personal communication, BLM also told BRW that “management” made the decision to have no plan amendment or downgrade the VRM Class, as shown below in an email from BLM:

Loda, Kenton M  

Aug 20, 2020, 4:50 PM  

Mr. Emmerich,

There is no language in 43 CFR 3809 that either requires, or not, a change to VRM classification for operations proposed under those regulations. The purposes of the regulations are succinctly stated in subsection 3809.1.

The decision to not pursue the VRM classification change was made by management after extensive consultation with a variety of specialists from every level of our organization. If you disagree with that conclusion you may submit your reasoning as a comment to the DEIS and we will address it in the FEIS.

Ken Loda

Lead Geologist  
Humboldt River Field Office  
775-623-1598

"The chief factor in any man's success or failure must be his own character." — Theodore Roosevelt

The BLM’s Winnemucca District Office concluded that the Thacker Pass Project boundary falls primarily within VRM Class II per the 2015 Record of Decision and Resource Management Plan for the Winnemucca District Planning Area, with an exception to the east end of the Project area which fall within VRM Class III (BLM 2015a).” (DEIS p 4-91)

And, goes on to say that for the proposed action:

“Overall, changes in the landscape character from the Thacker Pass Project would result in short-term strong contrast during construction, long-term strong contrast during mining operations, and long-term weak contrast in final reclamation.” (DEIS p 4-93)

And,

“Overall, the construction and operation of the Proposed Alternative would not meet the current VRM Class II objectives, and would not conform with the existing ROD/RMP (see Section 1.5.2). The existing character of the landscape would not be retained, and the level of change to the characteristic landscape would be noticeable and likely attract the attention of the casual observer. Overall, the construction and operation of Alternative A would not meet the current VRM Class II objectives, and would not conform with the existing ROD/RMP.” (DEIS p 4-93)

For construction the DEIS states:
“Construction would remove vegetation, add roads, waste rock storage facilities, clay tailings, pits, and associated buildings and infrastructure. The largest visual impacts would result from the mass-grading and reshaping of soils and landforms that would alter topography. Visual changes to the landscape would include removal of vegetation and exposure of soil, causing a contrast in color, line, form, and texture to the existing landscape.” (DEIS p 4-94)

For Mining Operations: “Mining operations are expected to last 41 years, through 2063. Contrasts to the existing landscape during operations would be long-term due to the life of the mine.”

Mitigation measures of “blending infrastructure to conform with the surroundings by choosing appropriate paint colors to match the adjacent scenery, concurrently backfilling the mine pit, and, when feasible, concurrently sloping and reclaiming stockpiles.” Would fail to fully compensate for the visual impacts. These mitigation measures would still fail to meet the objectives of VRM Class II of retaining the existing character of the landscape, while keeping the level of change to the characteristic landscape low.

3. Weak Key Observation Point (KOP) Simulations
Thacker Pass is located in a scenic caldera between the Montana and Double H Mountains. The area is isolated by topography and has a largely wild appearance.

The following photos are taken from the Lithium America website. Key Observation Points should be developed from a wider diversity of areas. These photos show viewpoints that would be greatly impacts by this project. KOP’s from viewpoints like these would provide a better perspective of the visual impacts of this project.
The KOP’s appear to have been rushed through and the simulations do undermine the severity of the visual impacts. KOP’s 1, 2 and 3 appear to be using very quick color blotches made in a photoshop simulation:

KOP 1 only shows outlines of the locations. Without the outlines, it would be difficult to see the full impacts. This should be closer with a more professional, detailed simulation.
4. **KOP 4 and 5 Fail to Even Show the Mine**

More KOPs should be created that show the facilities in detail. It appears that the BLM picked some of the least obvious and controversial points to make these visual simulations. The KOP’s should detail the open pit mine; waste rock storage facilities; coarse gangue stockpiles; a clay tailings filer stack; growth media stockpiles; haul and secondary roads; and additional mine facilities.

There is also no night-time or dark sky KOP simulation and the project will operate 24/7. This should be included.

5. **Visual Impacts of Mining Exploration not Addressed**

The mining exploration phase of this proposed project will also have visual impacts to the VRM Class II landscape and these are not addressed in the DEIS. Mining exploration activity creates new roads, sumps, cleared land, reclaimed pits with waste rock, large truck-sized drill rigs and visually obtrusive lighting that runs all night for 24/7 operations. Many of these impacts are temporary with the exception of newer roads which can be seen for years in arid environments.
The DEIS should address the visual impacts of exploration and create at least on KOP Mining Exploration simulation.

**The EIS Fails to Consider a Full Range of Alternatives**

1. **The BLM should consider a Reduced Footprint Alternative as well as a Phase One Only Alternative Should be Considered.**

   It would use 2,600 acre feet of water as opposed to the proposed 5,200 acre feet of water for Phase 2. At this point, LNC currently holds 15.5 acre-feet per annum (AFA) of water rights (mining and milling use) within the Project area. Not only would this save water, it would reduce the amount of disturbance and hazardous material needed for this project.

   A smaller footprint alternative would reduce impacts to biological resources. There would be less habitat disturbance and noise for sage grouse, bighorn sheep, golden eagles and other birds and other species.

   A smaller footprint alternative would disturb less cultural resources.

   A smaller footprint alternative would also reduce impacts to the VRM Class II landscape.

2. **Sediment Ponds Need to be Lined**

   Page 31: 2.2.7.2 Water Management Ponds Stormwater runoff from the Project area would be managed through the construction of unlined stormwater sediment ponds. Stormwater runoff could carry contaminant and chemicals used for processing lithium. These sediment ponds should be lined to take an extra step to prevent contamination from runoff from the project site.

3. **BLM Should also Consider an Off-site Processing Alternative**

   This alternative could reduce the footprint, acres, water use and impacts to resources. If items such as the lithium processing facility, battery production facility, sulfuric acid plant could all reduce noise, visual, hydrologic and biological impacts.

4. **Alternatives to Perpetuity Treatment is Needed**

   The DEIS never clarifies the need to perpetual management of contaminated groundwater, although this is no doubt the case as discussed above in the Water Quality section of these comments. There must be a detailed analysis of approaches to close the mine site without the need for perpetual treatment, even if these alternatives seem infeasible on the surface. It is important for the public to be informed about this option and decide for themselves if perpetual care is acceptable. Federal law requires that the mine operator “must minimize uncontrolled migration of leachate; and … Long-term, or post-mining, effluent capture and treatment are not acceptable substitutes for source and migration control, and you may rely on them only after all reasonable source and migration control methods have been employed,” (43 CFR Part 3809.420). The DEIS does not present a clear case that all other options that avoid treatment in perpetuity have been considered.

   Mining projects like the Thacker Pass Proposed Action, which anticipates perpetual active management as virtually certain outcome, are inherently controversial. Explicit engineering plans to capture and treat water, funded by a diversified financial trust, leaves the public uncomfortable with the cross-generational obligations. There is good reason for this, since the
status of governments, laws, and financial institutions are not guaranteed in perpetuity (500 years or more by the BLM definition).

At it’s core, the Proposed Action provides a private mining entity with short-term profit while leaving to society an obligation to maintain for centuries an active treatment system amidst the unavoidable uncertainty in future institutional stability.

5. **BLM Needs to Include an Original Point of Diversion Alternative**

As was pointed out to both BLM and LNC in writing by Orovada residents damages to existing water rights holders due to lowering of their wells as related to the mine production wells can be entirely mitigated by simply leaving the points of diversion where they currently are and piping the water an additional distance to the mine site.

**The Project Needs also to be Analyzed as a Power Plant**

The project proponent intends to produce 15 MW of energy, likely onto the grid, with waste heat from Sulfuric acid production. This will have significant unanalyzed impacts.

### 2.2.5.10 Sulfuric Acid Plant and Energy Production

Concentrated sulfuric acid would be required to leach lithium from the clay ore. The production of sulfuric acid produces excess heat that is converted to steam and electricity. Sulfuric acid would be produced by burning molten sulfur with air to produce sulfur dioxide (SO₂), catalytically converting the SO₂ to sulfur trioxide (SO₃) and absorption of SO₃ in acid while generating a large amount of excess heat that would be captured to produce steam to generate electrical power. Electricity produced would be either distributed directly to the Project facilities or sold back into the power grid. The Project is expected to be a net exporter of electricity, not exceeding 15 megawatts (MW) in Phase 1. (DEIS p 2-8)

This needs to go through a Nevada Public Utilities Commission application, and be analyzed under the Utility Environmental Protection Act (UEPA) of Nevada. BLM needs to analyze the impacts of producing energy in this manner—from hazardous chemicals, how will any spills be cleaned up?

A byproduct of burning Sulphur in air is the generation of nitrogen oxides NOₓ, and this is additive to NOₓ emissions already estimated to be emitted from process, fugitive and trucking/transport (DEIS p 4-72). How will these emissions be controlled? The power plant will emit air pollution—“smog” and the EA fails to analyze this. This will be an air pollutant contribution to climate change and local communities.

Apparentely the waste heat production would turn a steam turbine to produce electricity, and the water use from groundwater pumping was not analyzed. Will the steam turbine unit be wet-cooled, dry-cooled to conserve water? There are many significant impacts from using a steam turbine power plant on site that have not been analyzed.

We request a supplemental EA in order to analyze the impacts of a steam turbine power plant on the site—to air quality, climate change, and water resources.

Burning sulphur in air to produce waste heat for a steam turbine is not a renewable energy form, but a toxic, polluting, dirty, and inefficient form of energy production. This industrial waste heat energy generation is not renewable energy.
The Utility Environmental Protection Act was enacted in 1971 to address environmental issues related to the construction of utility facilities. The UEPA states: The PUCN cannot approve or modify a permit unless it finds and determines:

- The probable effects on the environment.
- The extent to which facility is needed for reliability if it emits greenhouse gases and does not use renewable energy as its primary source for generating electricity.
- The need for the facility balances any adverse effects on the environment.
- The facility represents the minimum adverse effects on the environment given current technology and feasible alternatives.
- All permits, licenses and approvals required by federal, state, and local jurisdictions are obtained or in the process of being obtained for construction.
- The facility will serve the public interest.

The facility will be so large that it will have a huge construction and operational carbon footprint. This would not be renewable energy but industrial waste heat energy. The project will overuse water, threaten groundwater for ranchers and wildlife. The project will use hazardous chemicals which potentially can pollute water sources. The project will threaten wildlife including Golden eagles, sage grouse and Lahontan cut-throat trout. The project will destroy the scenic values of the region. The project will create unhealthy air quality for local residents.

The project does not meet the standards of the UEPA.

BLM Is Not Applying the Proper Regulatory Authorities Over the Project

BLM appears to be basing its review of the Project on the assumption that Nevada Lithium 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 is wrong.


“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, 20

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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.

Based on the proposed PoO, 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).

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.


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 “impairs 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.

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).

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
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.

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:
The 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].”).

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.
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.

Cultural Aspects

1. BLM Failed to Consult with Native American Communities in a Meaningful and Effective Way

The DEIS states:

“Executive Order 13084 directs the BLM to establish regular and meaningful consultation and collaboration with Native American Tribal governments on the development of regulatory policies and permit approvals for proposed projects that could substantially or uniquely affect tribal communities. The BLM sent letters to the tribal representatives listed in Section 6.3.5, Tribal Organizations.” (DEIS 6-2 to 6-3)

Executive Order 13175 of November 6, 2000 requires that, “Each agency shall have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.” (Section 5 (a)). Key to this executive order is “meaningful” consultation. A simple letter as sent by BLM is not meaningful to the tribes as they have stated repeatedly over the years. Even as contained in “Department of the Interior Policy on Consultation with Indian Tribes”21 requires as a “Guiding Principle,” “This Policy requires a government-to-government consultation between appropriate Tribal Officials and Departmental officials.” (emphasis added) Given that the process needs to “meaningful” between “appropriate Tribal Officials and Departmental officials” consultation should be an in person meeting. The policy document goes on to state, “Communication will be open and transparent without compromising the rights of Indian Tribes or the government-to-government consultation process,” (emphasis added) and further discusses “Innovative and Effective Consultation Practices” which include, “Host regular meetings between the Secretary and Indian Tribes.”

BLM needed to meet in person with all of the tribes for a meaningful consultation that does not “compromise the rights of Indian Tribes.” Sending merely a letter to the tribes generally disre-
pects the tribes and their desire for in person meetings, especially regarding a project such as Thacker Pass involving very significant changes to their lands.

2. Native American Cultural

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 (at least as defined by the mines delineated on page two above). The analysis must include both known sacred and spiritual sites as well as traditional food and medicine gathering, important components of traditional practice.

Cumulative Assessment Aspects

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.” 22 This definition is critical to determining the proper area to be studied in a cumulative impact assessment.

As noted herein, the DEIS failed to fully consider all “direct and indirect impacts” under NEPA. These failures are in addition to the DEIS’ failure to review the “cumulative impacts” from all “past, present, and reasonably foreseeable future actions” under NEPA. 40 CFR § 1508.7. In this case, the DEIS’ analysis of cumulative impacts consists largely of a listing of the number of acres affected by the past, present, and reasonably foreseeable future surface disturbances for the cumulative impact areas (DEIS Chapter 5). Although the DEIS contains a short paragraph or two discussing cumulative impacts to some resources, the document provides no additional information on the actual cumulative impacts.

For example the cumulative effects on wetlands and riparian areas are stated to be “very limited” according to the DEIS, and it is further stated that, “If effects on wetland and riparian areas are determined to be unavoidable based on site-specific analysis, effects would be quantified through the Section 404 permit process and mitigated through enhancement, restoration, or replacement.” (DEIS 5-8) Again, the DEIS passes on the required analysis putting it off to later time, so the public does not have complete information. The effects need to be quantified in the EIS.

The DEIS also provides no concrete analysis on the cumulative effects of “Wastes, Hazardous and Solid,” simply stating, “mineral development and transportation corridors are the most likely to contribute cumulatively to effects to waste management within Humboldt County” (DEIS 5-18). Where is the analysis of what will be those effects?

The Ninth Circuit recently and squarely rejected such reliance on the listing of the acreages of other projects as the primary means to review cumulative impacts:

A calculation of the total number of acres to be [impacted by the other projects] in the watershed is a necessary component of a cumulative effects analysis, but it is not a suffi-

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22 40 CFR § 1508.7
cient description of the actual environmental effects that can be expected from [impact-ing] those areas.

Klamath Siskiyou Wildlands Center v. BLM, 387 F.3d 989, 995 (9th Cir. 2004):

[T]he general rule under NEPA is that, in assessing cumulative effects, the Environmental Impact Statement 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. See Neighbors of Cuddy Mountain v. United States Forest Serv., 137 F.3d 1372, 1379-80 (9th Cir.1998); City of Carmel-By-The-Sea v. United States Dept. of Transp., 123 F.3d 1142, 1160-61 (9th Cir.1997).

Lands Council v. Powell, 395 F.3d 1019, 1028 (9th Cir. 2005):

The [agency] cannot simply offer conclusions. Rather, it must 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, so as to provide a reasonably thorough assessment of the project’s cumulative impacts.

Klamath Siskiyou, 387 F.3d at 1001. In a major mining and NEPA decision, the Ninth Circuit recently specifically rejected the type of brief mention or listing of projects/acreages as found in the DEIS:

In a cumulative impact analysis, an agency must take a “hard look” at all actions. An EA’s analysis 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, 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. Although that case involved an EA, the need for a complete cumulative impacts analysis also fully applies to an EIS).

In Great Basin Mine Watch v. Hankins, 456 F.3d 955, 971-974 (9th Cir. 2006), the court struck down the same sort of acreage listing and brief, generalized descriptions of mining impacts in the region. The court required BLM to include “mine-specific … cumulative data.” Id. at 973. Relying on Klamath-Siskiyou, and Lands Council, the court highlighted the need for a “quantified assessment of their [other projects] combined environmental impacts” and “objective quantification of the impacts.” Id. at 972. That has not been done here.

For example, although the DEIS lists the nearby mining and other projects on cultural, Native American, water, wildlife, air, and other resources, there is no “mine-specific … cumulative data” for any other these past, present, or reasonably foreseeable future actions. Nor is there a “quantified assessment of their [other projects] combined environmental impacts” and “objective quantification of the impacts.”

Overall, this DEIS’s cumulative impacts discussion is very similar to the Final EIS deemed inadequate under NEPA in Great Basin Mine Watch v. Hankins. As such, BLM must prepare a revised DEIS (and may not proceed directly to a Final EIS) to correct these deficiencies, and the other errors noted in these comments.
**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.

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.

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).

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.

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).

“Without [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.

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).
Project Approval would Violate FLPMA’S UUD Mandate

Taken together, the significant, and in many cases unmitigated, damage to critical environmental, cultural, historical, and religious resources noted herein fails to comply with FLPMA’s mandate that BLM “shall … take any action necessary to prevent unnecessary or undue degradation of the lands.” 43 U.S.C. § 1732(b). This is known as the “UUD” standard. As the leading FLPMA and mining federal court decision states, this duty to “prevent undue degradation” is “the heart of FLPMA [that] amends and supersedes the Mining Law.” Mineral Policy Center v. Norton, 292 F.Supp.2d 30, 42 (D.D.C. 2003).

FLPMA, by its plain terms, vests the Secretary of the Interior [and BLM] 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.

Id. “FLPMA’s requirement that the Secretary prevent UUD supplements requirements imposed by other federal laws and by state law.” Center for Biological Diversity v. Dept. of Interior, 623 F.3d 633, 644 (9th Cir. 2010).

BLM complies with this mandate “by exercising case-by-case discretion to protect the environment through the process of: (1) approving or rejecting individual mining plans of operation.” Id. at 645, quoting Mineral Policy Center, 292 F.Supp.2d at 44. The Ninth Circuit has stressed the “environmental protection provided by the MPO [mining plan of operation] process.” Center for Biological Diversity, 623 F.3d at 645 (emphasis in original).

BLM cannot approve a mining plan of operations that would cause “unnecessary or undue degradation.” 43 C.F.R. § 3809.411(d)(3)(iii). BLM’s mining regulations further require that all operations “must take mitigation measures specified by BLM to protect public lands.” 43 CFR § 3809.420(a)(4).

As noted herein, BLM violated these overarching duties.

Conclusion

Overall the DEIS and the associated public process are inadequate and do not satisfy the requirements of NEPA. There is significant missing information and incomplete analysis including incorrect baseline development.

This DEIS should be withdrawn or a supplementary DEIS should be developed to address the significant deficiencies and illegal aspects.
If you have any questions regarding any of our comments feel free to contact us.

Sincerely,

John Hadder  
Director, Great Basin Resource Watch

Kevin Emmerich  
Co-Founder, Basin and Range Watch

Ian Bigley  
Mining Justice Organizer, Progressive Leadership Alliance of Nevada