



March 22, 2023

Mr. Dayne Doucet
Consolidated Mining Permit Lead
Oregon Department of Geology and Mineral Industries
Mineral Land Regulation & Reclamation
229 Broadalbin St SW
Albany, Oregon 97321

RE: Submittal of Documents in Response to Comments 160, 424, 454, 460A-D, and 461 in October 20, 2022, Comments for the Consolidated Permit Application, Grassy Mountain Mine Project

Dear Mr. Doucet:

This letter accompanies the submittal of the document listed below in response to Comments 160, 424, 454, 460A-D, and 461 in the October 20, 2022, Comments for the Consolidated Permit Application.

- Ecological Risk Assessment for Proposed TSF 2023-03.pdf (*Ecological Risk Assessment for Proposed Tailings Storage Facility, March 2023*)

This document will replace the CPA appendix titled, *Ecological Risk Assessment: Numerical Prediction of Tailings, Supernatant Pond and Reclaim Pond Chemistry for the Grassy Mountain Project* (formerly Appendix F in the 2021 CPA).

The document submittal records for the above-referenced comments are attached. Please see the “Response (Mar 2023)” information for your consideration.

Please contact me at (775) 625-3600, glen@paramountnevada.com if you have questions or need clarification.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Glen van Treek', written over a white rectangular area.

Glen van Treek
President
Calico Resources USA Corp./Paramount Gold Nevada Corp.
(775) 625-3600
glen@paramountnevada.com

Att: Document Submittal Records

Attachment
Document Submittal Records

Comment Number: 160

Comment Number: 160		Category: 2	Status: B (Not Resolved)
Topic: Tailings and Waste Rock		CPA Reference: Consolidated Permit Application, Section 3.3.13.3	
<p>Comment: DEQ</p> <p>The supernatant pool and reclaim pond must be covered in accordance with OAR 340-043-0110(1) to positively exclude wildlife. If residual cyanide levels and acid-water concentrations are low enough not to pose a threat to wildlife, Calico may seek a waiver of the positive exclusion requirements from ODFW.</p> <p>Cross-reference here is to ODFW’s OAR 635-420-0040 which provides details on TSF covers and exclusions.</p> <p>Proposed Resolution: Provide plan for achieving compliance with requirements stated in comment.</p>			
<p>Initial Response (Dec 2021): The Wildlife Protection Plan incorporates the section, Wastewater Accessible to Wildlife. The plan demonstrates that the chemical compositions will not be harmful to wildlife and provides alternative protection measures to the cover.</p>			
<p>Stantec – Comment Addressed as Indicated?</p> <p>Yes, with caveats.</p>	<p>Stantec – Preliminary Assessment – Sufficient Response?</p> <p>The Wildlife Protection Plan does present details of strategies to minimize risk to wildlife from wastewater, including the TSF supernatant pond and reclaim pond. Physical exclusion of terrestrial receptors would be managed through a perimeter fence, as well as bird balls in the reclaim pond. However, the geochemical modeling and ecological risk assessment (attachment) do not provide ample details, and there are questions regarding the form of cyanide in the tables of the risk assessment. Ultimately, the modeling does suggest that estimated concentrations of chemicals in the TSF supernatant and reclaim pond would be below toxicity thresholds.</p>	<p>TRT Response (Oct 2022):</p> <p>"Inadequate. There are no details of how the analysis was conducted to determine that there is no risk to wildlife receptors. What toxicity threshold was used for each receptor?</p> <p>Please provide details regarding the analysis conducted using the processes detailed in EPA’s Guidelines for Ecological Risk Assessment.</p> <p>Recommend confer with DEQ and ODFW"</p>	
<p>Preliminary Response to Comment (Nov 2022): The Wildlife Protection Plan addressed OAR 340-043-0110(1) but ODFW requests clarification/additional information regarding the ERA. See new comments 424, 460 and 461.</p> <p>The ERA will be updated.</p>			
<p>Agency Comment (Jan 2023): Changed from Category 1 to Category 2. Data and analyses not presented in a manner that allows the reviewer to verify accuracy. ERA analysis is not presented. See comments below.</p> <p>ODFW question - Question on the supernatant pools, which may be similar to facilities, such as wastewater treatment plants or perhaps CWM.</p>			
<p>Response (Mar 2023): The Ecological Risk Assessment (ERA) has been revised to include additional details as mentioned in the comment. A conceptual site model is presented that describes the ecological receptors with the potential to have significant exposure to supernatant (i.e., birds and mammals). DEQ ecological screening levels are used in risk estimates. Chemical-specific hazard quotients (HQs) are presented for wildlife. The revised ERA shows that estimated maximum concentrations of chemicals in supernatant are below DEQ screening levels</p>			

Comment Number: 160

Category: 2

Status: B (Not Resolved)

protective of wildlife (birds and mammals) exposed to water through drinking. Based on cumulative risk estimates in the updated ERA, chemicals in supernatant are not expected to cause unacceptable adverse effects to wildlife populations.

The form of cyanide in the TSF and Reclaim Pond is total cyanide. Tailings are treated to degrade Weak Acid Dissociable (WAD) cyanide and free cyanide before being pumped to the TSF. Also, WAD cyanide in the TSF will be readily degraded by sunlight and natural bacteria. Therefore, the ecological evaluation focused on total cyanide in supernatant.

The revised *Ecological Risk Assessment for Proposed Tailings Storage Facility*, dated March 2023, was uploaded to DOGAMI's file share system on March 22, 2023.

Comment Number: 424

Comment Number: 424		Category: 1	Status: B
Topic: Wildlife Receptors		CPA Reference: Wildlife Protection Plan, pg. 6	
Commentor: ODFW Potential wildlife receptor list is incomplete. For example, Pronghorn antelope, elk, grey partridge, various other waterfowl and mourning dove are missing but species that should be included.			
Initial Response to Comment: Can ODFW please provide a complete list of species they would like to address?			
Stantec – Comment Addressed as Indicated?	Stantec – Preliminary Assessment – Sufficient Response?	TRT Response:	
NA	NA		
Preliminary Response to Comment (Nov 2022):			
Agency Comment:			
<p>Response to Comment (Feb 2023): The revised ERA cites Appendix E of the Wildlife Resources Baseline Report (EMS, 2020) as the list of wildlife that may be present near the TSF. This appendix lists the wildlife observed during field studies near the site. This list includes 62 birds, 26 mammals, 11 reptiles, and 1 amphibian.</p> <p>The ecological screening values used in the updated ERA were the lowest of several values from different bird and mammal indicator species representing multiple feeding guilds (e.g., herbivores, invertivores, and carnivores). In general, indicator species were selected to conservatively represent a guild. For example, many of the indicator species have small body sizes relative to other members of the guild, and small-bodied organisms tend to have relatively high food and water ingestion rates when normalized by body mass. The ecological screening values used in the revised ERA are expected to be protective of non-T&E birds and mammals at the site.</p>			
<p>Response to Comment (Mar 2023): The revised <i>Ecological Risk Assessment for Proposed Tailings Storage Facility</i>, dated March 2023, was uploaded to DOGAMI’s file share system on March 22, 2023.</p>			

Comment Number: 454

Comment Number: 454		Category: 1	Status: B
Topic: TSF and reclaim pond		CPA Reference: Wildlife Protection Plan (p. 5)	
<p>Commentor: USFWS</p> <p>The Wildlife Protection Plan describes how the TSF and reclaim pond will be fenced to prevent terrestrial wildlife and the use of Bird Deterrent Balls on the reclaim pond, but it does not detail how the applicant will prevent access of the TSF by avian predators.</p>			
<p>Initial Response to Comment: In compliance with OAR 635-420-0020 (4)(d)(C), Calico is primarily relying on the non-toxic status of the TSF waters rather than physical deterrence to prevent harm to avian wildlife that access the TSF. This is described on page 5 of the WPP.</p>			
<p>Stantec – Comment Addressed as Indicated?</p> <p>NA</p>	<p>Stantec – Preliminary Assessment – Sufficient Response?</p> <p>NA</p>	<p>TRT Response:</p> <p>Per previous comments (see #460), the applicant has not adequately demonstrated that the TSF will be non-toxic. Thus, the applicant's response to comment #454 is insufficient. Because the applicant's response tiers to information that is a major data gap</p>	
<p>Preliminary Response to Comment (Nov 2022):</p>			
<p>Agency Comment: Per previous comments (see #460), the applicant has not adequately demonstrated that the TSF will be non-toxic. Thus, the applicant's response to comment #454 is insufficient. Because the applicant's response tiers to information that is a major data gap identified elsewhere (e.g., toxicity), this comment has been recategorized to category 1.</p>			
<p>Response to Comment (Feb 2023):</p>			
<p>Response to Comment (Mar 2023): The Ecological Risk Assessment (ERA) has been revised to include additional details as mentioned in the comment. A conceptual site model is presented that describes the ecological receptors with the potential to have significant exposure to supernatant (i.e., birds and mammals). DEQ ecological screening levels are used in risk estimates. Chemical-specific hazard quotients (HQs) are presented for wildlife. The revised ERA shows that estimated maximum concentrations of chemicals in supernatant are below DEQ screening levels protective of wildlife (birds and mammals) exposed to water through drinking. Based on cumulative risk estimates in the updated ERA, chemicals in supernatant are not expected to cause unacceptable adverse effects to wildlife populations.</p> <p>The form of cyanide in the TSF and Reclaim Pond is total cyanide. Tailings are treated to degrade Weak Acid Dissociable (WAD) cyanide and free cyanide before being pumped to the TSF. Also, WAD cyanide in the TSF will be readily degraded by sunlight and natural bacteria. Therefore, the ecological evaluation focused on total cyanide in supernatant.</p> <p>The revised <i>Ecological Risk Assessment for Proposed Tailings Storage Facility</i>, dated March 2023, was uploaded to DOGAMI's file share system on March 22, 2023.</p>			

Comment Number: 460A

Comment Number: 460A		Category: 1	Status: B
Topic: Ecological risk to wildlife		CPA Reference: Wildlife Protection Plan (p.6), Ecological Risk Assessment (p.14)	
Commentor: USFWS			
<p>There is insufficient detail included in both of these documents to assess the ecological risk to wildlife from the reclaim pond and supernatant waters. To sufficiently assess wildlife risk, the assessment must produce an exposure profile for species present (EPA 2018). Because the exposure (in terms of intensity, space, and time) may vary depending on each species, a single profile is insufficient. The document states it uses an exposure assumption that 100% of the ecological receptor's water needs is obtained from the supernatant water and reclaim pond, but it is unclear from this approach if this evaluates only consumption of the water or if other pathways of exposure were considered (e.g. physical contact). It is also unclear what duration of exposure was assessed (e.g., one day's worth of water needs vs. multiple consecutive days).</p>			
Initial Response to Comment:			
Stantec – Comment Addressed as Indicated? NA	Stantec – Preliminary Assessment – Sufficient Response? NA	TRT Response:	
Preliminary Response to Comment (Nov 2022):			
Agency Comment:			
<p>Response to Comment (Feb 2023): As mentioned in the response to Comment #424, the ecological screening values were calculated using exposure assumptions for indicator species of several different feeding guilds (LANL, 2017). These screening levels were calculated assuming that bird and mammal indicator species have an area use factor (AUF) of 1. This exposure assumption means that the entire exposure (i.e., water supply) of an indicator species was from the same location (typically a single contaminated site). The water screening levels are calculated assuming only drinking exposures. Although wildlife may also have dermal contact with water while drinking, dermal exposures are expected to be insignificant relative to assumed drinking. SLR is aware of no established EPA guidance for incorporating chemical uptake via dermal contact with water by wildlife in conventional ecological risk assessments.</p> <p>Please clarify what guidance document is being referenced with the "EPA, 2018" reference. Insufficient information is available in the comment to identify this reference.</p>			
<p>Response to Comment (Mar 2023): As mentioned in the response to Comment #424, the ecological screening values were calculated using exposure assumptions for indicator species of several different feeding guilds (LANL, 2017). These screening levels were calculated assuming that bird and mammal indicator species have an area use factor (AUF) of 1. This exposure assumption means that the entire exposure (i.e., water supply) of an indicator species was from the same location (typically a single contaminated site). The water screening levels are calculated assuming only drinking exposures. Although wildlife may also have dermal contact with water while drinking, dermal exposures are expected to be insignificant relative to assumed drinking. SLR is aware of no established EPA guidance for incorporating chemical uptake via dermal contact with water by wildlife in conventional ecological risk assessments.</p> <p>The revised <i>Ecological Risk Assessment for Proposed Tailings Storage Facility</i>, dated March 2023, was uploaded to DOGAMI's file share system on March 22, 2023.</p>			

Comment Number: 460B

Comment Number: 460B		Category: 1	Status: B
Topic: Ecological risk to wildlife		CPA Reference: Wildlife Protection Plan (p.6), Ecological Risk Assessment (p.14)	
Commentor: USFWS			
The “no-observed-adverse-effect levels” (NOAEL) for relevant wildlife species was not included. Other relevant values are the lowest-observed-adverse-effect-level (LOAEL), the maximum acceptable toxicant concentration (MATC), and LC50 (concentration expected to be lethal to 50% of a group of organisms), but these values were also not reported. Without those values, the reader cannot independently assess the accuracy of their conclusion that the supernatant pond and reclaim pond will be not be toxic to wildlife.			
Initial Response to Comment:			
Stantec – Comment Addressed as Indicated?	Stantec – Preliminary Assessment – Sufficient Response?	TRT Response:	
NA	NA		
Preliminary Response to Comment (Nov 2022):			
Agency Comment:			
Response to Comment (Feb 2023): The revised ERA includes a table with the ecological screening levels used in the evaluation. The source of the screening values was the Oregon DEQ. The DEQ cites LANL 2017 as a source of many screening values. Because default DEQ screening values were adopted in the revised ERA, a detailed description of their derivation is not provided (it is assumed DEQ has developed appropriate screening levels). Details regarding the toxicity data (e.g., LOAEL, NOAEL, etc.) used to develop Toxicity Reference Values (TRVs) should be available in the sources cited by DEQ (e.g., LANL, 2017).			
Response to Comment (Mar 2023):			
The revised <i>Ecological Risk Assessment for Proposed Tailings Storage Facility</i> , dated March 2023, was uploaded to DOGAMI’s file share system on March 22, 2023.			

Comment Number: 460C

Comment Number: 460C		Category: 1	Status: B
Topic: Ecological risk to wildlife		CPA Reference: Wildlife Protection Plan (p.6), Ecological Risk Assessment (p.14)	
Commentor: USFWS Neither document details what the Hazard Quotient value presented means and how that value was calculated.			
Initial Response to Comment:			
Stantec – Comment Addressed as Indicated? NA	Stantec – Preliminary Assessment – Sufficient Response? NA		TRT Response:
Preliminary Response to Comment (Nov 2022):			
Agency Comment:			
Response to Comment (Feb 2023): The revised ERA describes how chemical-specific hazard quotients were calculated.			
Response to Comment (Mar 2023): The revised <i>Ecological Risk Assessment for Proposed Tailings Storage Facility</i> , dated March 2023, was uploaded to DOGAMI's file share system on March 22, 2023.			

Comment Number: 460D

Comment Number: 460D		Category: 1	Status: B
Topic: Ecological risk to wildlife		CPA Reference: Wildlife Protection Plan (p.6), Ecological Risk Assessment (p.14)	
Commentor: USFWS The Ecological Risk Assessment cites the Environmental Protection Agency (EPA), 1998, Guidelines for ecological risk assessment, but omits several pertinent analyses, results, and report components described in the guidelines.			
Initial Response to Comment:			
Stantec – Comment Addressed as Indicated? NA	Stantec – Preliminary Assessment – Sufficient Response? NA	TRT Response:	
Preliminary Response to Comment (Nov 2022):			
Agency Comment:			
Response to Comment (Feb 2023): The revised ERA includes a CSM and other details of a screening-level risk assessment.			
Response to Comment (Mar 2023): The revised <i>Ecological Risk Assessment for Proposed Tailings Storage Facility</i> , dated March 2023, was uploaded to DOGAMI’s file share system on March 22, 2023.			

Comment Number: 461

Comment Number: 461		Category: 1	Status: B
Topic: Ecological risk to wildlife		CPA Reference: Ecological Risk Assessment (p.145 Section 5)	
Commentor: USFWS			
Please expand the ecological risk assessment and at the very least prepare a complete conceptual site model for this site. This will help better identify which pathways would be complete and significant. For instance, only wildlife receptors are listed in Table 5-1 and used in the brief ecological risk screening. Why would the pathway for aquatic receptors be incomplete or insignificant? Other receptors should be addressed in this evaluation. The Oregon guidelines for conducting ecological risk assessments at https://www.oregon.gov/deq/hazards-and-cleanup/env-cleanup/pages/era.aspx may be helpful in this regard.			
Initial Response to Comment:			
Stantec – Comment Addressed as Indicated?	Stantec – Preliminary Assessment – Sufficient Response?	TRT Response:	
NA	NA		
Preliminary Response to Comment (Nov 2022):			
Agency Comment:			
Response to Comment (Feb 2023):			
<p>The TSF will be an engineered feature designed to temporarily manage materials used in proposed mining operations. When mining operations end, this feature will be appropriately decommissioned. By design, the TSF will not be operated in a manner that would promote the establishment of a natural or semi-natural aquatic system. For example, tailings will be regularly discharged into the TSF, and water from the supernatant pool and other areas of the TSF will be regularly extracted via pumping and removed from the pond. These regular disturbances to media within the engineered TSF are likely to preclude development of a semi-natural aquatic system.</p> <p>The TSF will not be connected to natural surface waters, and fish or other wholly aquatic organism will not be able to colonize the TSF through water. Although it is possible that the volant life stage of invertebrates with a separate aquatic life stage (e.g., mosquitos) could fly into the pond, the TSF will not represent good breeding habitat for aquatic insects. Similarly, seeds of aquatic plants could potentially migrate into the TSF, but again, disturbances to media within the TSF are likely to prevent the establishment of a semi-natural aquatic plant community.</p> <p>The CSM in the revised Ecological Risk Assessment assumes that wildlife (local birds and mammals) may contact chemicals in supernatant of the TSF via drinking. Under this assumed exposure, chemicals in supernatant are not expected to cause unacceptable adverse effects to wildlife populations.</p>			
Response to Comment (Mar 2023):			
The revised <i>Ecological Risk Assessment for Proposed Tailings Storage Facility</i> , dated March 2023, was uploaded to DOGAMI's file share system on March 22, 2023.			