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August 9, 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 Category 1 and 2 Comments in October 20, 2022, Comments for the Consolidated Permit Application, Grassy Mountain Mine Project**

This letter accompanies the submission of the revised Consolidated Permit Application (CPA) for the Grassy Mountain Mine Project, dated August 2023. This version of the CPA addresses agency comments designated as Category 1 (Required Content) or Category 2 (Document Completeness) received during ongoing review of the December 2021 version of the CPA and its appendices.

Additional review comments have been addressed during the review process, with the most recent U.S. Fish and Wildlife Service comments received via email from DOGAMI on August 2<sup>1</sup>. Responses to these comments (Categories 1 and 2), in addition to other agency comment responses, are included as an attachment to this letter.

The CPA was uploaded today to DOGAMI's file share system in a file called "20230809 CPA\_cat1\_2\_responses.zip." Appendices that are referenced in comment responses are included in the zip file. Please note that hyperlinks to appendices not included in this submission will not work.

When the zip file is extracted, the folder structure should remain so that the CPA hyperlinks to appendices will work. A description of documents in the zip file is provided below.

**CPA 20230809 (main folder)**

- GM Consolidated Permit Application 2023-08.pdf ('clean' version of the CPA)
- GM Consolidated Permit Application 2023-08 tracked changes.pdf

**Appendices (subfolder)**

- C2\_Portal Design Report 2022-11.pdf
- C3\_Mill Design Report 2022-10.pdf
- D1\_Reclamation Plan 2023-08.pdf
- D2\_Tailings Chemical Monitoring Plan 2023-08.pdf
- D8\_Cyanide Management Plan 2023-01.pdf
- D14\_Wildlife Protection Plan 2023-08.pdf

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<sup>1</sup> Files received via email on 8/2/23: Calico\_USFWS\_Comments\_July 2023\_FINAL\_7.12.23.pdf, with attachment: USFWS Comment Response GrassyMtn CPA July 2023\_FINAL\_7.12.23.pdf

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- D15\_Wildlife Mitigation Plan 2023-08.pdf
- D18\_SeepSpringMonMitPlan 2023-05.pdf
- D19\_Noise Monitoring Plan 2023-05.pdf
- H\_Ecological Risk Assessment for Proposed TSF 2023-08.pdf
- J\_Alternatives Assessment Report 2021-11.pdf

**Supplemental (subfolder)**

- This letter
- CPA Shape Files.zip
- GMM Plan of Operations 2022-10.zip
- 1663241\_043\_TM\_Rev1.pdf (TSF Location Options Analysis; Golder, 2019)
- Grassy\_Mountain\_Tailings\_Geochemical\_Modeling\_Memo\_506800\_07\_JT\_202112\_07.pdf (Ecological Risk Assessment: Numerical Prediction of Tailings, Supernatant Pond and Reclaim Pond Chemistry for the Grassy Mountain Project; SRK, 2021)
- RT\_GMS PortalStability analysis.pdf (Stability Analysis of the Portal Design; GMS 2023)

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

Sincerely,



Glen van Treek  
President

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Att: Response to Comments

**Attachment  
Response to Comments**

## Comment Number: 163

<b>Comment Number:</b> 163		<b>Category:</b> 1	<b>Status:</b> B
<b>Topic:</b> Tailings and Waste Rock		<b>CPA Reference:</b> Section 3.1, page 106, Section 3.3.2, page 132, Section 3.3.4, page 139 and 140, Appendix C, Section 2.3, page 7, and Section 7, page 27	
<b>Commentor:</b> DEQ			
<p>Comment: Waste rock volume and storage issues. Throughout much of the CPA, the waste rock volume appears to be consistently estimated to be 200,000 tons and the Waste Rock Dump (WRD) is designed to hold that volume. However, Appendix S of the CPA (Stability Analysis of the Portal Design) states that “The portal will have a waste rock excavation volume of 2,283,146 tons.”</p> <p>Proposed Resolution: Applicant should provide information regarding this apparent large discrepancy in waste rock volume and the effect on the waste rock dump size and volume.</p> <p>Applicant should provide information showing how the waste rock volume was calculated.</p> <p>Applicant should provide information concerning where and how the additional 2,000,000 tons of waste rock material be stored, how it will be treated to preclude acid generation and metals leaching, and the ultimate disposition of the material.</p>			
<b>Initial Response to Comment:</b> There is an error with former Appendix S that was corrected for the submittal of the CPA.			
<b>Stantec – Comment Addressed as Indicated?</b> No. Appendix S – Portal Design Report (August 2019) appears to be the same version submitted with the November 2019 CPA, which maintains the waste rock excavation volume of >2 MT.	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> No.	<b>TRT Response:</b> This comment has not been sufficiently addressed. No "Appendix S" found in CPA documents.	
<b>Preliminary Response to Comment:</b> On revisiting this issue, the 2.283 million tons quoted in Appendix S is correct, but it is not "waste rock" as that term is used everywhere else in the CPA. The 2.283 million tons is the spoils from excavation of the Portal. As shown in Figure 6-1 of Appendix S, the material being excavated consists of colluvium, arkose, and siltstone, and it is all above the sinter that generally represents the top of the mineralized zone where the rock is potentially acid-generating.			
There are no corrections or clarifications necessary regarding this issue.			
<b>Response to Comment (Feb 2023):</b> Calico will be working with the agency to resolve this issue during permitting (Category 3).			
Also, a revised version of the Portal Design Report was prepared in 2022 (to be included with the revised CPA) that has a corrected value for the waste rock generated by excavation of the mine portal.			
<b>Response to Comment (Mar/Apr/May 2023):</b> The final Portal Design Report (November 2022) was uploaded to the DOGAMI file share system on March 10, 2023. This report is designated as Appendix C2 in the CPA.			

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**Agency Comment (July/Aug 2023):** We have reviewed the document provided by Calico concerning Comment #163 (volume discrepancy of waste rock in CPA). Calico's latest response to comment 163 points to the final "Portal Design Report" dated November 2022 as containing the correct volumes and stated the 2.283 million tons in Appendix S is correct, but the material is not acid generating.

The Portal Design Report identifies a total of 1,347,895 cu ft of material will be removed for the portal. This document includes an additional 39,629 cu ft of material movement for the roads and rainwater ditch. Using the stated bulk density of siltstone (2.49 ton/m<sup>3</sup>) for all material identified as being excavated in the Portal design Report (both the portal as well as roads and ditch) indicates a potential maximum of 97,047 tons of material being excavated. Using the maximum density and volumes stated in the Portal Design Report still provides a total tonnage significantly below the stated total 2.283 million tons.

DEQ recognizes there is a low likelihood of the material to be excavated for the portal to be acid generating, however with the significant discrepancy in the stated tonnage raises question of what material Calico will be excavating to meet the stated 2.283 million tons and how much of that will be acid generating.

DEQ considers Comment #163 as unresolved at this time.

**Response to Comment (July/Aug 2023):** The CPA and all its appendices have been updated to be consistent in the estimated tonnage and volume of waste rock that will be generated by the Project. The total estimate for waste rock is 272,000 tons through the life of mine. This estimate is listed in the Design Criteria for the TWRSF (Table 4 in the Detailed Design, Tailings Storage Facility and Temporary Waste Rock Storage Facility [Golder, October 2021; CPA Appendix C4]). The reference provided by Golder in the Design Criteria table for the waste rock tonnage is the Feasibility Study issued September 2020 with Ausenco as the principal author. Table 16-26 of the Feasibility Study provides the schedule for generation of waste rock and lists 127,000 tons of waste rock generated during years -1 (construction) and 1 (first year of production), which includes the waste rock generated by construction of the Portal described in the November 2022 version of the Portal Design Report<sup>1</sup> (Appendix C2 in the updated CPA).

The most recent version of the CPA submitted to the TRT (December 2021) included the 2019 Grassy Mountain Project Stability Analysis of the Portal Design report as Appendix C2 (presented as Appendix S2 in the 2019 CPA). The 2019 Stability Analysis<sup>2</sup> had an error in the waste rock volume being excavated during portal construction. The revised Portal Design Report<sup>1</sup> provides the corrected waste rock volume as presented in the revised Portal Stability Analysis<sup>3</sup>. The revised Portal Design Report<sup>1</sup> was uploaded to the DOGAMI file share system on March 10, 2023. The revised Portal Design Report will be included as Appendix C2 of the updated CPA, and the updated CPA will be issued by Calico during the second semester of 2023.

<sup>1</sup> Geotechnical Mine Solutions (GMS). 2022. Grassy Mountain Project Final Portal Design and Construction Plan. Rev2. November.

<sup>2</sup> GMS. 2019. Grassy Mountain Min Project Stability Analysis of the Portal Design. Rev3. August.

<sup>3</sup> GMS. 2023. Grassy Mountain Mine Project Stability Analysis of the Portal Design. Rev5. July.

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**Additional Response to Comment (August 9, 2023):** The CPA Section 3.7 includes a new table (Table 40) with the planned waste rock material and backfill requirements.

**Table 40. Schedule of Waste Rock Production and Use as Backfill**

Year of Operation	-1	1	2	3	4	5	6	7	8	Totals
Non-Portal Waste Rock	65	62	31	17	28	28	6	17	17	271
Portal Excavation	92									92
Total Waste	157	62	31	17	28	28	6	17	17	363
Cumulative Waste	157	219	250	267	295	323	329	346	363	363
Backfill Demand		136	174	210	199	204	200	194	144	1,461
Waste Used as Backfill	0	81	50	36	48	48	26	37	37	363
Net Waste in Stored in <u>TWRSE</u>	157	138	118	98	78	58	38	18	0	0
Quarry Basalt Used as Backfill	0	55	124	174	151	156	174	157	107	1,098

Notes:

- Tonnages of waste rock, portal excavation, and backfill demand are as reported in the Feasibility Study (Ausenco, 2020).
- Waste Rock is material excavated to access the ore and includes excavation spoils for construction of the Portal, the decline, and drifts/crosscut for level access and stope access.
- Cumulative waste is the total that would be stored in the TWRSE if no waste is used as cement rock backfill.
- Waste Used as backfill assumes that one-eighth of the waste generated in Year -1 is added to the waste generated in each year of operation and the total is used as backfill for that year.
- Units are kilotons.

## Comment Number: 322

<b>Comment Number:</b> 322		<b>Category:</b> 1	<b>Status:</b> B
<b>Topic:</b> Wildlife and Vegetation		<b>CPA Reference:</b> Cyanide Management Plan, Page 5	
<b>Commentor:</b> USFWS			
<p>Comment: The CMP cites the Wildlife Mitigation Plan in reference to “Standard of Practice 4.4 Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.” and “Standard of Practice 4.5 Implement measures to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water.” No mention of cyanide management is included in the Wildlife Mitigation Plan.</p> <p>Proposed Resolution: The cyanide management plan and wildlife mitigation plan must address measures to protect fish and wildlife from exposure to cyanide.</p>			
<b>Initial Response to Comment:</b> Updated the Cyanide Management Plan to include wildlife protection measures. See Appendix D8 of the CPA for the Cyanide Management Plan. The Wildlife Protection Plan, also provided in Appendix D to the CPA, discusses cyanide storage in relation to wildlife protection.			
<b>Stantec – Comment Addressed as Indicated?</b> Yes. Technically, the cyanide management plan references the wildlife protection plan. However, Cyanide storage is not discussed relative to wildlife protection.	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> Yes	<b>TRT Response:</b> On page 6, the CMP states that the project with, “...satisfy the more stringent Oregon standard” of 30 mg/L” but then reverts to the Code guideline of 50 mg/L in this statement, “There are no open waters where WAD cyanide will exceed the Code guidance of 50 mg/L in the Grassy Mountain process plant design.” So it is unclear which concentration will be used for the standard	
<b>Agency Comment:</b> The cyanide concentration must be clarified so tht USFWS can accurately evalute potential impacts of proposed activities and potential effectiveness of proposed mitigation. The discrepancy in information presented presents a major data gap consistent with Category 1.			
<b>Response to Comment (Feb 2023):</b> The CMP text has been updated to indicate that the concentration of WAD cyanide in discharge to the TSF will have an operating target of less than 15 mg/L. This is lower than the maximum concentration allowed by the Code (50 mg/L), and half of the not-to-exceed value that is allowed by Oregon Administrative Rules (30 mg/L).  Please note that the Cyanide Management Plan (Appendix D8) edits are tracked in the document submitted for review on 1/30/2023. The finalized plan will be stamped and hyperlinked with the CPA submission.			
<b>Agency Comment (July/Aug 2023):</b> Partially RESOLVED - The Cyanide Management Plan now states in redline text "The leached slurry will be reduced from a design CNWAD concentration of 200 mg/L from the CIL circuit to the operating target of less than 15 mg/L, which is half of the not-to-exceed regulatory limit applicable to tailings introduced to the TSF pursuant to Oregon Administrative Rule 340-043-0130 (OAR). The final WAD cyanide concentration in the plant tailings stream will be continuously monitored by automated titration to ensure compliance with the lowest practical levels and the not-to-exceed regulatory limit of 30 mg/L." These changes as well as changed text on page 6 stating "...Grassy Mountain project will be managed such that WAD cyanide concentrations in onsite impoundments will not exceed 30 mg/L in accordance with the OAR and have an operating target of less than 15 mg/L" address the comment to correct the regulatory limits for consistency.			

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However, OAR 340-043-0130 (1) states "Mill tailings shall be treated by cyanide removal, reuse, or destruction prior to disposal to reduce the amount of cyanide introduced into the tailings pond to the lowest practicable level. The permittee shall conduct laboratory column tests on mill tailings to determine the lowest practicable concentration to which the WAD cyanide (weak-acid dissociable cyanide as measured by ASTM Method D2036-82 C) can be reduced. In no event, shall the permitted WAD cyanide concentration in the liquid fraction of the tailings be greater than 30 ppm." These requirements state the amount of cyanide introduced into the tailings pond should be reduced to the lowest practicable level, and not just limited to 30 ppm, and to conduct laboratory column tests on mill tailings. Because cyanide is difficult to monitor and there is high uncertainty as to what concentrations are associated with lethal and sublethal effects to wildlife, the applicant should describe here or in the Tailings Chemical Monitoring Plan (TCMP) the results of laboratory column tests conducted on the mill tailings (which should be completed with samples prior to facility operations) needed to address OAR 340-043-0130 (1), with efforts to reduce cyanide concentrations in ponded areas most accessible to wildlife in the TSF to a target of less than 1 ppm. The current TCMP does not address the test results required in OAR 340-043-0130 (1) to determine the lowest practicable concentration of WAD cyanide clearly. Section 2.1 of the TCMP addresses measurement of WAD cyanide only on liquid samples, but does not discuss laboratory column tests on mill tailings to help make predictions of WAD concentrations. This section at a minimum must be clarified, as to how the applicant will limit cyanide introduced into the tailings pond to the lowest practicable level, and not just to ensure a Hazard Quotient (which is based on a limited risk assessment of the drinking water pathway only) of <1.

The importance of this issue is related to the uncertainty of characterizing risk to wildlife from cyanide as well as the difficulties in monitoring cyanide concentrations, summed as follows.

There are several sources of uncertainty in the ecological risk assessment, and variability in measuring cyanide in the tailings pond, that impede full risk characterization of cyanide exposure, especially to waterfowl and bats. First, cyanide has a steep toxicity response curve, and the specific concentration thresholds associated with toxicity in field situations are uncertain. Waterfowl attracted to tailings ponds can be exposed to lethal concentrations of hydrocyanic acid and immediately die from exposure, and mortalities during these events can be readily quantified during wildlife monitoring. However, waterfowl can also be exposed to free cyanide and heavy metals liberated in the digestive tract after exposure to weak acid dissociable cyanide (free cyanide is rapidly formed from sodium cyanide in the digestive tract, and metals such as copper are dissociable in the stomach acid environment). In these cases, birds may not die immediately but rather experience death or sublethal effects that are never accounted for after they leave the area. Therefore, thresholds and effects in these situations are unknown and may be lower than current guidelines, or are otherwise not accounted for in risk assessments or monitoring.

Second, chemical monitoring conducted in tailings ponds may not be representative of the exposure potential for birds and bats. As indicated by Griffiths et al. (2014) "Cyanide monitoring at gold mining operations often relies on sampling data that bears little relevance to the cyanide concentrations to which wildlife may be exposed within a wastewater impoundment...". This is due to a highly variable cyanide concentration gradient across tailings ponds (which can vary by a factor of 2 to 3 or more across ponds), fluctuating cyanide concentrations in the ponds over time (which can result from changes in ore characteristics and mill processing that causes spikes of available cyanide within the ponds), the variable and unpredictable timing when wildlife such as waterfowl and bats use the ponds, the volatilization of cyanide (which makes periodic monitoring not very informative), and the multiple methods used to analyze cyanide (which can include colorimetric, titrimetric, electrochemical, amperometric, polarographic and voltammetric techniques, ion-selective electrode, gas chromatography, and ion chromatography methods, each with their own source of error, interferences, and variation).

Because of the difficulties and uncertainties in characterizing risk of cyanide exposure to wildlife, the Service recommends adopting a risk management strategy to first eliminate risk, and if that is not entirely possible, then

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<p>strive to minimize risk and deny access to wildlife, rather than manage risk based solely on a single exposure pathway, threshold level, or hazard quotient model. This is in line with OAR Oregon Administrative Rule 340-043-0130 (1) which states to "...ensure compliance [of cyanide concentrations] with the lowest practical levels..." and not just with the purpose to achieve a target of 15 or 30 mg/L in the tailings pond, levels which are difficult to assess for the reasons discussed above.</p> <p>To potentially eliminate risk, the Service recommends investigating alternative lixivants such as thiosulfate. This could eliminate risks to wildlife from cyanide and associated metals and also require far less chemical and wildlife monitoring, including negating the need for continuous cyanide monitoring in the plant tailings stream.</p> <p>If cyanide is used in the process, then the Service recommends to:</p> <ol style="list-style-type: none"> <li>1) lower the operating target from the carbon-in-leach circuit as much as practical (preferably to around 1 ppm);</li> <li>2) increase the frequency of cyanide and metal monitoring (at minimum daily rather than weekly during the in the initial stages, then weekly until the operating target is routinely achieved and fluctuations are documented);</li> <li>3) increase the spatial coverage of sampling in the tailings pond, especially in areas where waterfowl may be attracted; 4)</li> <li>4) measure three classes of cyanide (free cyanide when possible, WAD cyanide, and total cyanide) as well as metals at all locations to best characterize the potential for risk;</li> <li>5) detailing the specific actions to be taken to reduce risk if the operating target is exceeded; and</li> <li>6) monitoring wildlife interactions with the tailings pond on a frequent basis (daily in the initial states) and report any sick or injured wildlife.</li> </ol> <p>Exclusion is the only certain method aside from not using cyanide to reduce risk and prevent wildlife poisonings. To deny waterfowl access, the Service recommends:</p> <ol style="list-style-type: none"> <li>1) use deterrents and exclusion devices as described in the Wildlife Protection Plan and be prepared to adaptively manage as new situation arise (e.g., adopt new deterrent techniques as waterfowl habituate and increase use of pond);</li> <li>2) steepen slopes along the sides of the tailings pond (potentially including high-density polyethylene liner along the slopes);</li> <li>3) reduce the supernatant surface by controlling the water budget, but avoid uneven floors that could form islands;</li> <li>4) thicken tailings prior to discharge;</li> <li>5) verify and adapt management procedures to reduce wildlife exposure and risk of mortality;</li> <li>6) create habitat (alternative water source) that is more attractive and safer for waterfowl nearby.</li> </ol> <p>Griffiths, S. R., D. B. Donato, G. Coulson, and L. F. Lumsden. 2014. High levels of activity of bats at gold mining water bodies: implications for compliance with the International Cyanide Management Code. <i>Environmental Science and Pollution Research</i> 21:7263–7275.</p>		
<p><b>Response to Comment (August 9, 2023):</b> Regarding the Cyanide Management Plan (CPA Appendix D8) comments: Tailings Chemical Monitoring Plan (Appendix D2 of the CPA) and the Ecological Risk Assessment for the Proposed Tailings Storage Facility (Appendix H of the CPA) have been updated to address comments regarding potential</p>		

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wildlife exposure to cyanide and target cyanide concentrations for the discharge of detoxified tailings to the TSF as well as for the supernatant pond in the TSF.

The initial target cyanide concentration for tailings detoxification is 15 mg/L. The target concentration for the supernatant pond in the TSF is 1 mg/L. The ERA establishes that a cyanide concentration of 1 mg/L in the supernatant pond is protective of wildlife (i.e., birds that may consume water from the pond).

The Tailings Chemical Monitoring Plan outlines an optimization process during the startup period of the mine where the lowest practicable concentration for tailings detoxification will be established through process modifications and monitoring of the cyanide concentration in the detoxified tailings being discharged to the TSF and in the supernatant pond. The optimization process includes daily testing of cyanide in the supernatant pond and continuous testing of the discharge from the detoxification circuit.

The Tailings Chemical Monitoring Plan describes the forms of cyanide that will be monitored, which is WAD cyanide for the discharge from the detoxification circuit and Total and WAD cyanide in the supernatant pond. The plan also describes sampling location(s) as well as sampling, sample handling, and QA/QC procedures and analytical methods.

Regarding comments to the Ecological Risk Assessment for the Proposed Tailings Storage Facility (CPA Appendix H):

The ERA has been updated to address comments regarding wildlife exposure pathways and uncertainty analysis.

## Comment Number: 379

<b>Comment Number:</b> 379		<b>Category:</b> 2	<b>Status:</b> C
<b>Topic:</b> General		<b>CPA Reference:</b> General	
<p><b>Commentor:</b> DOGAMI</p> <p>Appendices are not identified in directory structure as they are in CPA Index. For example, there is no Appendix D1 in the directory structure, instead there is a file named Reclamation Plan 2021-11 in the Management Plans Directory in the 040 Appendices directory, this leaves the reviewer to infer the document to review and does not make it explicitly clear which file is appendix D1. There is no indicator in the document that it is appendix D1.</p>			
<p><b>Initial Response to Comment:</b> Hyperlinks are used per DOGAMI's request so relevant documents could be opened from the CPA, and file names and their locations would not have to be known. The directory structure groups appendices by subfolder categories and file names match report titles (Baseline Studies, Design Reports, Management, Plans, and Permit Applications; stand-alone appendices are saved outside of these subfolders). Appendix alpha-numbers have changed in some cases through the review/response process. Responses to comments will include references to both appendix alpha-numbers and titles.</p>			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b>	
<p><b>Response to Comment (Feb 2023):</b> Appendix files will be renamed to include the alpha-numeric designation in the CPA's table of contents.</p>			
<p><b>Response to Comment (August 9, 2023):</b> Appendices are now organized in one folder called "Appendices," and files have been named to include the appendix alpha-numeric designation.</p>			

**Comment Number: 390**

<b>Comment Number:</b> 390		<b>Category:</b> 2	<b>Status:</b> C
<b>Topic:</b> General		<b>CPA Reference:</b> General	
<b>Commentor:</b> DOGAMI			
Through-out the CPA there are bold portions of text reading “Error! Reference source not found.” I suspect these are supposed to be hyperlinks to appendices, figures, tables, or maps that are not working.			
<b>Initial Response to Comment:</b> Six erroneous cross-references to maps and figures have been corrected.			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b>	
<b>Response to Comment (Feb 2023):</b> No update to preliminary response given.			
<b>Response to Comment (August 9, 2023):</b> The cross-reference errors in the CPA (“Error! Reference source not found.”) have been corrected.			

**Comment Number: 404B**

<b>Comment Number:</b> 404B		<b>Category:</b> 2	<b>Status:</b> B
<b>Topic:</b> Sage-grouse		<b>CPA Reference:</b> Wildlife Mitigation Plan, Section 7.4, Pg 26	
<b>Commentor:</b> ODFW			
Power Lines - This is an important minimization measure to reduce impacts to sage-grouse and was considered in the project impact analysis. Provide details on what type of perch and nest deterrents will be utilized and how the persistence of these structures will be monitored and maintained.			
<b>Initial Response to Comment:</b> The powerline design document addresses deterrents. Calico will coordinate with ODFW to address this comment in the WMP.			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b>	
<p><b>Response to Comment (Mar/Apr/May 2023):</b> Following subsequent discussion with ODFW, Calico proposes to install perch deterrents on poles located up to 10 km from the sage grouse low density habitat. Designs will follow those detailed in CPA Appendix C6, Calico-Grassy Mountain 34.5kV Line. Calico will continue to coordinate with ODFW regarding the appropriate timing and frequency of monitoring but proposes a 3-year monitoring frequency for distribution lines that is the same as proposed on another recent project (Idaho Power Avian Protection Plan for Boardman to Hemingway). The Wildlife Protection Plan and the Wildlife Mitigation Plan have been updated to include this information. This response also applies to Comment 455A.</p> <p>Appendix D14, Wildlife Protection Plan, and Appendix D15, Wildlife Mitigation Plan, were resubmitted to DOGAMI on May 31, 2023.</p>			
<p><b>Agency Comment (July/Aug 2023):</b> The proposed 3-year monitoring plan is insufficient to meet the intent of the requested perch deterrent surveys for the Calico project. The requested surveys are to identify potential bird of prey (corvids, raptors, and eagles) use of the transmission line, implement adaptive management measures to address use when and where applicable, and ensure maintenance of perch deterrent structures for the life of the project. Derived a simple survey protocol that addresses the points outlined above, with particular emphasis on the avian breeding and nests seasons, which is when persistent activity may occur for birds of prey to nest on the transmission line and predate on sage-grouse nests.</p>			
<p><b>Response to Comment (August 9, 2023):</b> The Wildlife Mitigation Plan (CPA Appendix D15) Section 7.2 has been updated to clarify that power poles will be monitored by qualified personnel annually during the appropriate nesting season for evidence of any nesting by potential avian predators including raptors, corvids, and eagles. If any nesting is detected, the Environmental and Safety Superintendent (ESS) will coordinate with ODFW to determine the appropriate response.</p>			

**Comment Number: 411A**

<b>Comment Number:</b> 411A		<b>Category:</b> 1	<b>Status:</b> B
<b>Topic:</b> Mitigation Plan		<b>CPA Reference:</b> Wildlife Mitigation Plan, Section 8.5, page 29-31	
<p><b>Commentor:</b> ODFW</p> <p>While these options may be viable, there is not enough information under any option in this Section to provide a conclusive decision that the mitigation standards will be met. Provide information on the detail needed to comply with ODFW past requests and compliance with standards in OAR 635-415. Confer with ODFW to determine possible approaches.</p>			
<p><b>Initial Response to Comment:</b> The compensatory mitigation options presented in Section 8.5 of the WMP demonstrate multiple pathways for consistency with OAR 635-420-0060 which in turn cites the mitigation standards in OAR 635-415. In Section 9 of the WMP, Calico clearly commits to meeting the standards in OAR 635-420-0060 (2) and OAR 635-415 and asserts the options presented in Section 8 provide ample resources to do so. Calico also understands additional coordination with ODFW is necessary to refine these options into a specific package. We expect this is likely to be a permit condition of the DOGAMI permit.</p>			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b>	
<p><b>Response to Comment (Mar/Apr/May 2023):</b> After receiving this comment Calico worked with ODFW to further develop three of the originally proposed compensatory mitigation options: ODFW In-Lieu Fee Program for GRSG, Third Party Payment-to-Provide Mitigation Bank, and Permittee Implemented Mitigation via Habitat Mitigation Areas. These three approaches to comply with the standards in OAR 635-415 and GRSG specific standards in OAR 635-140 are detailed in section 6.5 of the Wildlife Mitigation Plan, including Project-specific compensatory mitigation examples. Appendix D15, Wildlife Mitigation Plan, was resubmitted to DOGAMI on May 31, 2023.</p>			
<p><b>Agency Comment (July/Aug 2023):</b> Inadequate. While the detail for each mitigation option has been greatly improved, there is still significant detail needed for the mitigation plan to fully describe how a proposed mitigation option will offset project impacts and meet state mitigation policies. Therefore, prior to completeness, a preferred option for mitigation must be identified. It's important to note that the properties currently chosen as PRM mitigation do not offset project impacts to mule deer winter range and there are important considerations in policy for Category 2 habitat. There will be a need for continued coordination and concurrence with state policies prior to finalizing the mitigation plan and ODFW providing final permit conditions.</p>			
<p><b>Response to Comment (August 9, 2023):</b> After additional coordination with ODFW, the Wildlife Mitigation Plan (CPA Appendix D15) has been updated to clearly state our preferred alternative for compensatory mitigation which is to complete mitigation using HMAs, with an option to purchase any remaining needed credits through the bank (NGBCB). This is presented in Section 6.5 of the revised WMP.</p>			

**Comment Number: 411B**

<b>Comment Number: 411B</b>		<b>Category: 1</b>	<b>Status: B</b>
<b>Topic:</b> Mitigation Plan		<b>CPA Reference:</b> Wildlife Mitigation Plan, Section 8.5, page 29-31	
<b>Commentor:</b> ODFW			
Option 1: There is no detail on the Programs In-Lieu Fee (ILF) cost calculation and payment structure required for this project. Provide details on the ILF and cost breakdown for the project to successfully mitigate impacts to sage-grouse habitat.			
<b>Initial Response to Comment:</b> Calico is aware ODFW completed an initial ILF calculation for this project and will work with ODFW to add details regarding the ILF cost breakdown and payment structure for the project.			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b>	
<b>Response to Comment (Mar/Apr/May 2023):</b> After receiving this comment Calico worked with ODFW to further develop the ODFW In-Lieu Fee Program scenario for GRSG compensatory mitigation for the Project. This is detailed in section 6.5 of the Wildlife Mitigation Plan. Appendix D15, Wildlife Mitigation Plan, was resubmitted to DOGAMI on May 31, 2023.			
<b>Agency Comment (July/Aug 2023):</b> Inadequate. While the detail for each mitigation option has been greatly improved, there is still significant detail needed for the mitigation plan to fully describe how a proposed mitigation option will offset project impacts and meet state mitigation policies. Therefore, prior to completeness, a preferred option for mitigation must be identified. It's important to note that the properties currently chosen as PRM mitigation do not offset project impacts to mule deer winter range and there are important considerations in policy for Category 2 habitat. There will be a need for continued coordination and concurrence with state policies prior to finalizing the mitigation plan and ODFW providing final permit conditions.			
<b>Response to Comment (August 9, 2023):</b> After additional coordination with ODFW, the Wildlife Mitigation Plan (CPA Appendix D15) has been updated to clearly state our preferred alternative for compensatory mitigation which is to complete mitigation using HMAs, with an option to purchase any remaining needed credits through the bank (NGBCB). This is presented in Section 6.5 of the revised WMP.			

**Comment Number: 412**

<b>Comment Number: 412</b>		<b>Category: 1</b>	<b>Status: B</b>
<b>Topic:</b> Mitigation Plan		<b>CPA Reference:</b> Wildlife Mitigation Plan, Section 9, Pg 32	
<p><b>Commentor:</b> ODFW</p> <p>The Mitigation Plan (Section 8) provides an ample number of potential mitigation options but none of them have been describe in sufficient detail, nor has there been coordination with ODFW to determine their validity and compliance with state mitigation policies. ODFW requests significant coordination with Calico and consultants to vet each of the mitigation options with state sage-grouse and fish and wildlife habitat mitigation policies and determine appropriate language for each viable mitigation option.</p>			
<p><b>Initial Response to Comment:</b> Calico agrees additional coordination with ODFW is necessary to refine these options into a specific package. We expect this is likely to be a permit condition of the DOGAMI permit.</p>			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b>	
<p><b>Response to Comment (Mar/Apr/May 2023):</b> After receiving this comment Calico worked with ODFW to further develop three of the originally proposed compensatory mitigation options: ODFW In-Lieu Fee Program for GRSG, Third Party Payment-to-Provide Mitigation Bank, and Permittee Implemented Mitigation via Habitat Mitigation Areas. These three approaches to comply with the standards in OAR 635-415 and GRSG specific standards in OAR 635-140 are detailed in section 6.5 of the Wildlife Mitigation Plan, including Project-specific compensatory mitigation examples. Appendix D15, Wildlife Mitigation Plan, was resubmitted to DOGAMI on May 31, 2023.</p>			
<p><b>Agency Comment (July/Aug 2023):</b> Inadequate. While the detail for each mitigation option has been greatly improved, there is still significant detail needed for the mitigation plan to fully describe how a proposed mitigation option will offset project impacts and meet state mitigation policies. Therefore, prior to completeness, a preferred option for mitigation must be identified. It's important to note that the properties currently chosen as PRM mitigation do not offset project impacts to mule deer winter range and there are important considerations in policy for Category 2 habitat. There will be a need for continued coordination and concurrence with state policies prior to finalizing the mitigation plan and ODFW providing final permit conditions.</p>			
<p><b>Response to Comment (August 9, 2023):</b> After additional coordination with ODFW, the Wildlife Mitigation Plan (CPA Appendix D15) has been updated to clearly state our preferred alternative for compensatory mitigation, which is to complete mitigation using HMAs with an option to purchase any remaining needed credits through the bank (NGBCB). This is presented in Section 6.5 of the revised WMP.</p>			

**Comment Number: 413**

<b>Comment Number: 413</b>		<b>Category: 1</b>	<b>Status: B</b>
<b>Topic:</b> Mitigation Plan		<b>CPA Reference:</b> Wildlife Mitigation Plan	
<p><b>Commentor:</b> ODFW</p> <p>The Plan is conceptual and lacks specificity for compliance with OAR 635-415. For there to be no net loss of habitat quality and to demonstrate a net benefit for Habitat Category 2, it is necessary to compare the quality of the impacted habitat with the quality of the habitat at the site proposed for mitigation to ensure that no habitat quality is lost, and to demonstrate that planned habitat improvements at the mitigation site are appropriate and durable to ensure no net loss. To accurately make this comparison, it is necessary to have an identified mitigation site. The synopsizes in Appendix H are not sufficient to meet standards of ODFW mitigation policies. In addition, a 1:1 ratio does not account for the risk of having a successful mitigation outcome, and based on the nature, extent and duration of impacts, ODFW recommends posting of a bond or other financial instrument to ensure the mitigation site meets the standards in the ODFW mitigation policies (OAR 635-415-0020(7)).</p>			
<p><b>Initial Response to Comment:</b> Calico agrees additional coordination with ODFW is necessary to refine these options into a specific package. We expect this is likely to be a permit condition of the DOGAMI permit.</p>			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b>	
<p><b>Response to Comment (Mar/Apr/May 2023):</b> After receiving this comment Calico worked with ODFW to further develop the originally proposed compensatory mitigation scenario for Permittee Implemented Mitigation via Habitat Mitigation Areas. Calico worked with ODFW to refine the assessment of GRSG habitat and other wildlife habitat conditions on example HMAs. Project-specific examples of compensatory mitigation packages involving HMAs are detailed in section 6.5 of the Wildlife Mitigation Plan. Appendix D15, Wildlife Mitigation Plan, was resubmitted to DOGAMI on May 31, 2023.</p>			
<p><b>Agency Comment (July/Aug 2023):</b> Inadequate. While the detail for each mitigation option has been greatly improved, there is still significant detail needed for the mitigation plan to fully describe how a proposed mitigation option will offset project impacts and meet state mitigation policies. Therefore, prior to completeness, a preferred option for mitigation must be identified. It's important to note that the properties currently chosen as PRM mitigation do not offset project impacts to mule deer winter range and there are important considerations in policy for Category 2 habitat. There will be a need for continued coordination and concurrence with state policies prior to finalizing the mitigation plan and ODFW providing final permit conditions.</p>			
<p><b>Response to Comment (August 9, 2023):</b> After additional coordination with ODFW, the Wildlife Mitigation Plan (CPA Appendix D15) has been updated to clearly state our preferred alternative for compensatory mitigation which is to complete mitigation using HMAs, with an option to purchase any remaining needed credits through the bank (NGBCB). This is presented in Section 6.5 of the revised WMP.</p>			

**Comment Number: 414**

<b>Comment Number: 414</b>		<b>Category: 1</b>	<b>Status: B</b>
<b>Topic:</b> Mitigation Plan		<b>CPA Reference:</b> Wildlife Mitigation Plan, Appendix H	
<b>Commentor:</b> ODFW			
<p>The synopsizes in Appendix H provide a general understanding of the habitat and acreages of properties available for purchase in 2022. These analyses do not provide information to crosswalk mitigation acres with proposed project impact to individual habitat categories or species. Similarly, there are no justifications for proposed treatments on which to determine habitat uplift or consultation with ODFW for compliance to mitigation policies. ODFW requests more information aligned with standards outlined in OAR 635-415-0020(8) and Section 4.4.5 of the Sage-grouse Mitigation Programs Operation Manual, to better evaluate if these potential properties are viable for offsetting project impacts to wildlife species and habitats.</p>			
<p><b>Initial Response to Comment:</b> Calico presented the preliminary assessments in Appendix H in the WMP as examples of potential mitigation solutions under Option 4. Calico agrees additional coordination with ODFW is necessary to refine the compensatory mitigation options (including various combinations of Options 1-4) into a project-specific package. We expect this is likely to be a permit condition of the DOGAMI permit.</p>			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b>	
<p><b>Response to Comment (Mar/Apr/May 2023):</b> After receiving this comment Calico worked with ODFW to further develop the originally proposed compensatory mitigation scenario for Permittee Implemented Mitigation via Habitat Mitigation Areas. Calico worked with ODFW to refine the assessment of GRS habitat and other wildlife habitat conditions on example HMAs. ODFW provided preliminary HQT outputs based on a desktop analysis to assist with the habitat assessment of example compensatory mitigation areas for GRS. Project-specific examples of compensatory mitigation packages involving HMAs are detailed in section 6.5 of the Wildlife Mitigation Plan. Appendix D15, Wildlife Mitigation Plan, was resubmitted to DOGAMI on May 31, 2023.</p>			
<p><b>Agency Comment (July/Aug 2023):</b> Inadequate. While the detail for each mitigation option has been greatly improved, there is still significant detail needed for the mitigation plan to fully describe how a proposed mitigation option will offset project impacts and meet state mitigation policies. Therefore, prior to completeness, a preferred option for mitigation must be identified. It's important to note that the properties currently chosen as PRM mitigation do not offset project impacts to mule deer winter range and there are important considerations in policy for Category 2 habitat. There will be a need for continued coordination and concurrence with state policies prior to finalizing the mitigation plan and ODFW providing final permit conditions.</p>			
<p><b>Response to Comment (August 9, 2023):</b> After additional coordination with ODFW, the Wildlife Mitigation Plan (CPA Appendix D15) has been updated to clearly state our preferred alternative for compensatory mitigation which is to complete mitigation using HMAs, with an option to purchase any remaining needed credits through the bank (NGBCB). This is presented in Section 6.5 of the revised WMP.</p>			

## Comment Number: 450

<b>Comment Number:</b> 450		<b>Category:</b> 2	<b>Status:</b> B
<b>Topic:</b> Noise		<b>CPA Reference:</b> Wildlife Mitigation Plan, p. 25, 26	
<b>Commentor:</b> USFWS			
<p>What is the anticipated noise level? What is the noise threshold below which the applicant commits to maintain operational noise? The Mitigation Plan and Wildlife Protection Plan does not address noise impacts during construction, road expansion work, noxious weed management and revegetation activities, and reclamation activities. Noise is a disturbance that must be considered with respect to nesting raptors and sage-grouse and seasonal/timing restrictions are inclusive of all of the aforementioned activities.</p>			
<p><b>Initial Response to Comment:</b> Noise reduction minimization measures are noted in the WMP, Section 7.3. Calico can work with ODFW and USFWS to better develop and describe noise minimization measures and expected impacts to include in the WMP. Does USFWS have noise impact tables for general groups of wildlife species that could be provided to Calico?</p>			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b>	
		<p>Category 2 indicates incomplete work presented in the application and that inadequate data are provided to assess effects. Anticipated noise levels were not provided therefore noise impacts cannot be assessed, nor can the adequacy of any mitigation measures be determined. Thus, this comment is still category 2. To resolve this, Calico should provide data indicating the anticipated noise level from their proposed activities as detailed in the original FWS comment.</p>	
<p><b>Agency Comment:</b> Category 2 indicates incomplete work presented in the application and that inadequate data are provided to assess effects. Anticipated noise levels were not provided therefore noise impacts cannot be assessed, nor can the adequacy of any mitigation measures be determined. Thus, this comment is still category 2. To resolve this, Calico should provide data indicating the anticipated noise level from their proposed activities as detailed in the original FWS comment.</p>			
<p><b>Response to Comment (Mar/Apr/May 2023):</b> Following receipt of this comment Calico completed a noise analysis to model the Project-related noise levels associated with the construction and operations phases of the Project. This analysis also included noise expected to be generated by traffic on the access route. Results are summarized in Section 4.1.4.2 of the Wildlife Mitigation Plan. Based on the results of the noise analysis, Calico proposed noise minimization measures detailed in Section 5.1 of the Wildlife Mitigation Plan and developed a Noise Monitoring Plan summarized in Section 7.1 of the Wildlife Mitigation Plan.</p> <p>Appendix D15, Wildlife Mitigation Plan, was resubmitted to DOGAMI on May 31, 2023, and Appendix D19, Noise Monitoring Plan, was also submitted to DOGAMI on May 31, 2023.</p>			
<p><b>Agency Comment (July/Aug 2023):</b> NOT RESOLVED - The WMP summarizes the noise analysis well, and notes that significant noise will be generated during the road construction activities. However, the maps provided from the consultant do not appear to display the results of the noise analysis for sound anticipated during the construction phases of upgrading the access road. The maps only show the impact around the perimeter fence.</p>			

<b>Comment Number:</b> 450	<b>Category:</b> 2	<b>Status:</b> B
It would be helpful to review the same results for the access road, particularly given the active GOEA nest located adjacent to the road.		
<b>Response to Comment (August 9, 2023):</b> The BKL Noise Modeling Summary was distributed via email to the agencies on July 13, 2023. That document includes noise modeling results for the roadways during construction.		

**Comment Number: 453**

<b>Comment Number: 453</b>		<b>Category: 2</b>	<b>Status: B</b>
<b>Topic:</b> Non-contact water		<b>CPA Reference:</b> Wildlife Protection Plan (p. 4)	
<b>Commentor:</b> USFWS			
It is unclear how non-contact water will be diverted and stored and if those methods will allow non-contact water to serve as an attractant to wildlife and if it will be accessible by wildlife.			
<b>Initial Response to Comment:</b> The Stormwater Pollution Control Plan (Appendix D4 of the CPA) describes the system of pipes and non-erodible ditch features through which non-contact stormwater will flow to natural drainages located downstream of the project area. Stormwater will not be stored on site. Stormwater management ditches and piping will be installed within the perimeter fence which will prevent access by terrestrial wildlife.			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b> FWS has not had time to review the Stormwater Pollution Control Plan in detail and would appreciate consulting with other state agencies and subject matter experts.	
<b>Agency Comment:</b> FWS has not had time to review the Stormwater Pollution Control Plan in detail and would appreciate consulting with other state agencies and subject matter experts.			
<b>Response to Comment (Mar/Apr/May 2023):</b> Non-contact waters will be collected and conveyed to discharge points into natural drainages located within the perimeter fence. Access by terrestrial wildlife will be restricted by the fence until waters flow offsite through the natural drainages. It would be possible for birds to access these ephemeral flows.			
The small earthen embankment that forms the Scheizwer Reservoir is within the planned path of the roadway from the Basalt Quarry to the Mine Plant Area. The construction of the road will destroy the embankment so the reservoir will no longer exist.			
The Reclamation Plan describes how site facilities will be decommissioned and the site reclaimed, including removal of temporary (i.e., operations period) stormwater management facilities like culverts and channels, and construction of post-closure stormwater management facilities. The reclamation activities will return nearly all of the site to near-natural conditions so the “stormwater” will become unclassified runoff that will be used by wildlife just like water occurring in other natural ephemeral drainages in the vicinity of the mine.			
The Wildlife Mitigation Plan and the Wildlife Protection Plan have been updated to state that quarterly inspections of stormwater drainage facilities will be conducted for evidence of wildlife use, or any incidental observations of wildlife.			
Appendix D14, Wildlife Protection Plan, section on Chemical Processing Solutions and Associated Wastewater Containment, references the Stormwater Pollution Control Plan (WSP USA, 2023) and states non-contact water will be collected and diverted around the mine facilities in a series of culverts.			
CPA Appendix D14, Wildlife Protection Plan, and Appendix D15, Wildlife Mitigation Plan, were resubmitted to DOGAMI on May 31, 2023.			

**Comment Number:** 453

**Category:** 2

**Status:** B

**Agency Comment (May 2023):** Having reviewed the Stormwater Pollution Control plan, USFWS has the following questions/concerns:

1. We are mostly satisfied that the plan will not allow for standing non-contact water that could serve as an attractant to wildlife. However, the site layout plans detail an existing cattle pond (Schwizer Reservoir) that has held water in recent years (Google Earth Imagery). Further details are needed to understand how the stormwater conveyance system will interact with this reservoir and how this reservoir will be managed to reduce its potential to serve as a wildlife attractant.

2. The Stormwater Management Plan includes monitoring to ensure that precipitation events would not contribute to water quality impairments downstream but does not address the potential for these flowing conveyances to be an attractant to wildlife. While the site is in a dry climate; spring storms and snow melt can cause episodic ponding or overland flows. The Wildlife Protection Plan should clearly state that observational reports of any wildlife use of stormwater drainage features will be included in surveys.

3. Long-term, it is unclear how the site will be transitioned post operations so that issues such as deteriorated culverts do not plug and create ponded water or other attractant areas for wildlife in the future when BMPs are not being regularly used and maintained. Additional information about the post-operations stormwater management, monitoring, and expectations is requested.

**Agency Comment (July/Aug 2023):** NOT RESOLVED - FWS appreciates the following: 1. Clarification re: the reservoir being removed. 2. Addition of observations of wildlife use of stormwater facilities to the WMP quarterly monitoring reports. 3. Direction to the Reclamation Plan. It does include information about how the stormwater system will be decommissioned (only the 2 diversions will remain in place post-ops). Monitoring of these facilities post-operations is described, though a monitoring timeline is not included for any item except the groundwater monitoring wells. Please include information on the length of time and minimum frequency that potential wildlife attractant (former stormwater facilities, etc.) will be monitored in the reclamation and post-reclamation period.

**Response to Comment (August 9, 2023):** CPA Appendix D1, Reclamation Plan, states that the Stormwater diversion channels will be inspected during the reclamation monitoring period. The Section 7.2 of the Reclamation Plan (Post-Closure Monitoring) has been updated with a detail that the duration of the reclamation monitoring period is 15 years.

**Comment Number: 454**

<b>Comment Number:</b> 454		<b>Category:</b> 1	<b>Status:</b> B
<b>Topic:</b> TSF and reclaim pond		<b>CPA Reference:</b> Wildlife Protection Plan (p. 5)	
<b>Commentor:</b> USFWS			
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.			
<b>Initial Response to Comment:</b> 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.			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b> 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.	
<b>Agency Comment:</b> 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.			
<b>Response to Comment (Feb 2023):</b> 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.  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.			
<b>Response to Comment (Mar/Apr/May 2023):</b> A Tailings Chemical Monitoring Plan has been included with the revised CPA as Appendix D2 in response to other comments from the TRT. One of the objectives of the Tailings Chemical Monitoring Plan is to monitor the acid generation potential of the tailings and slurry (i.e., to regulate			

Comment Number: 454	Category: 1	Status: B
<p>the addition of lime to the tailings) and assure that the tailings and water going into the TSF is not too basic or acidic. The Tailings Chemical Monitoring Plan also includes monitoring of the supernatant and reclaim pond water to assure that the water quality will not be harmful to birds. The parameters monitored and media tested are described in the Tailings Chemical Monitoring Plan along with the frequency of testing (weekly for cyanide and pH, quarterly for metals). CPA Appendix D2, Tailings Chemical Monitoring Plan, was uploaded to DOGAMI on April 3, 2023.</p> <p>The Wildlife Mitigation Plan and the Wildlife Protection Plan have been updated to state the water quality parameters to be monitored including the wildlife-related levels of concern. These plans also detail the response protocol if a parameter exceeds the level of concern. The plans also state that the results of quarterly observational monitoring of the TSF and reclaim pond will be used to determine the presence of fish, aquatic invertebrates, algae, or aquatic vegetation. This response also pertains to Comment 460A.</p> <p>CPA Appendix D14, Wildlife Protection Plan, and Appendix D15, Wildlife Mitigation Plan, were resubmitted to DOGAMI on May 31, 2023.</p>		
<p><b>Agency Comment (May 2023):</b> The Service believes the applicant has demonstrated that fencing and deterrent balls on the reclaim pond are appropriate measures to deter wildlife use of the reclaim pond. Because there will be no physical barriers to prevent avian use of the 108-acre Tailings Storage Facility (TSF) pond, the Service strongly encourages the applicant to include additional measures in the Wildlife Protection Plan to ensure water stored in the TSF pond and reclaim pond remains non-toxic. Please add a description in the Wildlife Protection Plan that describes the adaptive management approach that will be used to address and monitor metals and water quality parameters in the 108-acre TSF pond, including listing potential options for deterring waterbirds (which will be attracted to and use the 108-acre facility) if water quality thresholds are exceeded to levels potentially harmful to the birds. Please also add a table to the Wildlife Protection Plan that details the metals and baseline water quality constituents (including temperature, pH, hardness, salinity, conductivity, etc.) that will be monitored quarterly, the predicted concentration ranges from the model and target ranges for these constituents, along with levels of concern.</p> <p>Quarterly observational monitoring for presence of fish, aquatic invertebrate, and aquatic vegetation in the TSF and supernatant pond should be added to the Wildlife Protection Plan. Observations of algal growth, fish or invertebrates are observed in the same location over more than 3 quarters, the USFWS must be contacted to discuss adaptive management actions (such as deterrents or removal of aquatic vegetation).</p>		
<p><b>Agency Comment (July/Aug 2023):</b> PARTIALLY RESOLVED- also see comments in 322 regarding uncertainty and monitoring cyanide.</p> <p>Comments regarding the Wildlife Protection Plan and Wildlife Mitigation Plan- these plans call for daily inspections (including for dead or dying wildlife) as part of the monitoring plan, with employees reporting any mortalities to the Environmental and Safety Superintendent (ESS). However, in addition to the employees reporting to the ESS, the plan should clearly state how daily monitoring for dead or injured wildlife will be conducted by trained individuals on a routine schedule, and that quarterly reports will be provided to ODFW. Please add how daily monitoring for dead or injured wildlife will be conducted by trained individuals on a routine schedule to the plan.</p> <p>Comments regarding the Cyanide Management Plan - The plan discusses a "do not exceed standard" of 30 mg/L WAD cyanide in the liquid fraction of the slurry, and an operating target of 15 mg/L WAD cyanide. However, the Ecological Risk Assessment and other documents state or implicate that no WAD cyanide or free cyanide will be generated due to detoxification and other treatment procedures. If this is the case, then the operating target should be much lower than 15 mg/L (which is a level that is clearly toxic to fish and aquatic invertebrates should</p>		

**Comment Number:** 454

**Category:** 1

**Status:** B

they ever be present in the tailings pond or if the tailings pond is catastrophically released to surface water) and it seems a targeting level of < 1 ppm would be more appropriate.

Moreover, the management plan should clearly state the temporal and spatial plan for collecting samples and monitoring for cyanide and metal constituents (which should be at minimum daily for cyanide in the initial stages before moving to a weekly evaluation) and the analytical methods used, clearly state the forms of cyanide that will be analyzed in all samples (e.g., at a minimum the analysis should include free cyanide, WAD cyanide, and total cyanide in every sample) in order to meet requirements for assessing risk and being below a HQ of 1, as well as clearly state who will receive quarterly reports of the information collected.

Comments regarding the 2023 Ecological Risk Assessment for Proposed Tailings Storage Facility - Comments related to development of a conceptual site model and listing the thresholds used to address risk have been addressed. Comments regarding toxicity of the TSF pond are only partially addressed, and it is expected that WAD cyanide and free cyanide will show up in the TSF pond even after detoxification, though detoxification will help. The comments regarding addressing drinking water as the sole pathway have not been addressed, and the assessment still only evaluates the drinking water pathway as the sole exposure route for cyanide to reach receptors. In addition, no waterfowl species were evaluated as a receptor in the risk assessment, and waterfowl are the wildlife group most likely to be exposed to cyanide and associated metals after being attracted to the tailings pond and landing for resting and drinking. Please add to the risk assessment the following:

1. a risk evaluation including waterfowl (likely a mallard as receptor) and the pathways most likely exposed, or show how other receptors evaluated would replicate or be equivalent to waterfowl exposure; and
2. an uncertainty section that discusses and more fully characterizes this risk and also addresses presence of WAD cyanide and free cyanide in the TSF pond.

Specific information on how these pathways should be addressed follows. The 2023 Ecological Risk Assessment for Proposed Tailings Storage Facility only evaluates the drinking water pathway as the sole exposure route for cyanide to reach receptors. Cyanides are absorbed through ingestion (of food as well as water), inhalation, skin contact, and then are quickly distributed by the blood to target organs. Pathways other than water ingestion are important to address as a source of uncertainty in the risk assessment even if there are no screening values available to evaluate or quantify exposure. For dietary intake, it can be noted that the pathway is likely insignificant because prey items (fish and aquatic invertebrates) are unlikely to survive the elevated cyanide concentrations expected to occur in the TSF pond. Fish and invertebrates are very sensitive to cyanide exposure, and the target concentrations of 15 mg/L cyanide (not to exceed 30 mg/L) in the TSF pond are well above sublethal and lethal concentrations for fish (which can be less than 1 mg/L for many species) as well as aquatic invertebrates. The dietary pathway will likely be an incomplete exposure route because cyanide concentrations will prevent establishment of fish and aquatic invertebrate prey species (though waterfowl could be exposed while sieving for terrestrial insects blown onto ponds). Dermal exposure has been documented (as reviewed by Henny et al. 1994 and Donato et al. 2007) as a route for cyanide to enter wildlife receptors including waterfowl, so this pathway would be complete for birds attracted to the pond for resting and hydration and would likely be additive to the ingestion route (even though metrics for modeling are unavailable). Inhalation had also been considered (as reviewed by Henny et al. 1994 and Donato et al. 2007) as an important pathway into waterfowl resting on ponds, and would contribute to exposure in an additive way along with drinking. Risk to waterfowl is further difficult to characterize from cyanide exposure because birds will drink water with Weak Acid Dissociable (WAD) cyanide and then be exposed later after leaving the area as dissociation of complexed cyanide occurs in the digestive tract when exposed to low pH gastric juices, so birds could then experience sublethal effects from both cyanide and metals disassociated from the WAD cyanide complex. These pathways and how they influence risk characterization should clearly be addressed in the uncertainty section of the ecological risk assessment, as

Comment Number: 454	Category: 1	Status: B
<p>discussed in Oregon Department of Environmental Quality's 2020 guidance document "Conducting Ecological Risk Assessments" which states "Risk characterization uses a lines of evidence approach to weigh the nature, magnitude, spatial extent, and uncertainty to determine the likelihood of adverse effects."</p> <p>Henny, C. J., R. J. Hallock, and E. F. Hill. 1994. Cyanide and migratory birds at gold mines in Nevada, USA. <i>Ecotoxicology</i> 3:45–58. Donato, D. B., O. Nichols, H. Possingham, M. Moore, P. F. Ricci, and B. N. Noller. 2007. A critical review of the effects of gold cyanide-bearing tailings solutions on wildlife. <i>Environment International</i> 33:974–984.</p>		
<p><b>Response to Comment (August 9, 2023):</b> Regarding the Cyanide Management Plan (CPA Appendix D8) comments: Tailings Chemical Monitoring Plan (Appendix D2 of the CPA) and the Ecological Risk Assessment for the Proposed Tailings Storage Facility (Appendix H of the CPA) have been updated to address comments regarding potential wildlife exposure to cyanide and target cyanide concentrations for the discharge of detoxified tailings to the TSF as well as for the supernatant pond in the TSF.</p> <p>The initial target cyanide concentration for tailings detoxification is 15 mg/L. The target concentration for the supernatant pond in the TSF is 1 mg/L. The ERA establishes that a cyanide concentration of 1 mg/L in the supernatant pond is protective of wildlife (i.e., birds that may consume water from the pond).</p> <p>The Tailings Chemical Monitoring Plan outlines an optimization process during the startup period of the mine where the lowest practicable concentration for tailings detoxification will be established through process modifications and monitoring of the cyanide concentration in the detoxified tailings being discharged to the TSF and in the supernatant pond. The optimization process includes daily testing of cyanide in the supernatant pond and continuous testing of the discharge from the detoxification circuit.</p> <p>The Tailings Chemical Monitoring Plan describes the forms of cyanide that will be monitored, which is WAD cyanide for the discharge from the detoxification circuit and Total and WAD cyanide in the supernatant pond. The plan also describes sampling location(s) as well as sampling, sample handling, and QA/QC procedures and analytical methods.</p> <p>Regarding comments to the Ecological Risk Assessment for the Proposed Tailings Storage Facility (CPA Appendix H):</p> <p>The ERA has been updated to address comments regarding wildlife exposure pathways and uncertainty analysis.</p>		

## Comment Number: 455B

<b>Comment Number:</b> 455B		<b>Category:</b> 2	<b>Status:</b> B
<b>Topic:</b> Nest deterrents on transmission line		<b>CPA Reference:</b> Wildlife Protection Plan (p. 9)	
<b>Commentor:</b> USFWS  Who will be responsible for monitoring the transmission lines for avian predator nests? What is the planned frequency and duration of monitoring? What will the process be for notifying Idaho Power of identified nest for removal?			
<b>Initial Response to Comment:</b> The ESS will be responsible for monitoring the effectiveness of wildlife protection measures, including the nesting deterrence structures. Calico can address this and add clarifying language to WPP.			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b>	
<b>Response to Comment (Mar/Apr/May 2023):</b> Calico added information on power pole monitoring to CPA Appendix D14, Wildlife Protection Plan, and CPA Appendix D15, Wildlife Mitigation Plan; both plans were resubmitted to DOGAMI on May 31, 2023.			
<b>Agency Comment (July/Aug 2023):</b> NOT RESOLVED - Unable to locate where monitoring of power poles was added to the WPP. WMP indicates perching and nesting deterrence structures will be inspected at least once every 3 years to identify needed repairs. But this does not address procedures for monitoring the power line for avian nests (of critical importance during sage-grouse nesting season) so that IPC can be notified for removal.			
<b>Response to Comment (August 9, 2023):</b> Details regarding the monitoring of power poles were not originally included in the Wildlife Protection Plan (CPA Appendix D14) because the WPP requirements listed under OAR 635-420-0020 do not include the standard associated with electrical power lines and other transmission facilities. Calico voluntarily included detail regarding the proposed electrical lines and transmission facilities in the WPP. In response to this comment, we have also added the power pole monitoring information to the monitoring section of the plan. Please refer to the Section entitled Monitoring and Maintenance of Wildlife Protection Measures to see the newly added details.			

**Comment Number: 457A**

<b>Comment Number:</b> 457A		<b>Category:</b> 1	<b>Status:</b> B
<b>Topic:</b> Ecological risk to wildlife		<b>CPA Reference:</b> Ecological Risk Assessment (p.1 Section 2.1)	
<b>Commentor:</b> USFWS			
<p>It appears that the reclaim pond is considered the only area at the facility that could pose ecological risk. Provide more detail as why the tailings storage and waste rock storage areas will not pose risk over time (will leachate from the waste rock be covered and lined and only drain to the reclaim pond? Will the liner completely prevent leachate from entering surface or groundwater, and how long with the liner last?) Is there expected to be any maintenance concerns with the liner, and has this process been used successfully at other sites to prevent groundwater and surface water contamination from tailings leachate?</p>			
<p><b>Initial Response to Comment:</b> The tailings supernatant pond (the pool on top of the tailings impoundment) is the focus of the ecological risk assessment. The reclaim pond will contain generally the same water, but is much smaller. There is no water stored in the waste rock storage facility; what water falls on the TWRSF drains to the reclaim pond. The design of the containment systems (liners, drains, etc.) for the TSF, TWRSF, and Reclaim Pond have been the focus of review by ODEQ engineers and they are largely satisfied that the designs are protective in the long and short term.</p>			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b>	
		<p>While it is encouraging that ODEQ engineers have been focusing on this concern, insufficient information has been provided to allow USFWS to assess ecological risk. The risk assessment appears to focus only on the drinking water pathway, whereas waterfowl such as mallards would use the ponds and feed on aquatic plants and invertebrates. Therefore, the dietary pathway should also be considered in the risk assessment. In addition, ecological risk assessment is needed for wildlife receptors (ex. amphibians) in contact with potentially leaked reclaim and supernatant pond waters hydrologically connected to local groundwater/springs. FWS has not had an opportunity to review the TSF and Reclaim Design plans in detail and would welcome reviewing these in collaboration with ODEQ and/or other subject matter experts.</p>	
<p><b>Agency Comment:</b> While it is encouraging that ODEQ engineers have been focusing on this concern, insufficient information has been provided to allow USFWS to assess ecological risk. The risk assessment appears to focus only on the drinking water pathway, whereas waterfowl such as mallards would use the ponds and feed on aquatic plants and invertebrates. Therefore, the dietary pathway should also be considered in the risk assessment. In addition, ecological risk assessment is needed for wildlife receptors (ex. amphibians) in contact with potentially leaked reclaim and supernatant pond waters hydrologically connected to local groundwater/springs. FWS has not had an opportunity to review the TSF and Reclaim Design plans in detail and would welcome reviewing these in collaboration with ODEQ and/or other subject matter experts.</p>			

Comment Number: 457A	Category: 1	Status: B
<p><b>Response to Comment (Feb 2023):</b> The ecological risk assessment has been revised to include more detail on the dietary pathway. The revised ecological risk assessment will be included with the next submittal of the Consolidated Permit Application.</p> <p>There is no hydrologic connection between waste containment facilities (i.e., the TSF, TWRSF, and Reclaim Pond) and local groundwater/springs, therefore this pathway is incomplete.</p>		
<p><b>Agency Comment (July/Aug 2023):</b> PARTIALLY RESOLVED: We have not been able to find any revisions to the Ecological Risk Assessment regarding the dietary pathway, which should be addressed in an uncertainty section (along with other pathways) in the Ecological Risk Assessment. See our comments in 454 and 322 to resolve this issue.</p> <p>Also, additional detail is needed as to why the tailings pond and waste rock will not pose risk over time (will leachate from the waste rock be covered and lined and only drain to the reclaim pond? Will the liner completely prevent leachate from entering surface or groundwater, and how long with the liner last?) Is there expected to be any maintenance concerns with the liner, and has this process been used successfully at other sites to prevent groundwater and surface water contamination from tailings leachate? Also, the pathway from potentially leaked reclaim and supernatant pond waters hydrologically connected to local groundwater/springs needs to be address, and the potential receptors in those springs identified.</p>		
<p><b>Response to Comment (August 9, 2023):</b> The Ecology Risk Assessment for the Proposed Tailings Storage Facility (CPA Appendix H) has been updated to address comments regarding wildlife exposure pathways and uncertainty analysis.</p> <p>Significant details on the liner design, basis for the liner design, monitoring, emergency response procedures, etc. are provided in the numerous provided documents, including the Mill Design Report (CPA Appendix C3), Monitoring Proposal for Groundwater and Facilities (CPA Appendix D12), and the Tailings Chemical Monitoring Plan (CPA Appendix). The processes and monitoring programs are based on global industry standard practices to avoid impacts to soil, groundwater, and surface water.</p> <p>In addition, the Mine Plan of Operations, approved by BLM, will be uploaded to DOGAMI as a supplemental document to the CPA.</p>		

**Comment Number: 458**

<b>Comment Number: 458</b>		<b>Category: 2</b>	<b>Status: B</b>
<b>Topic:</b> Ecological risk to wildlife		<b>CPA Reference:</b> Ecological Risk Assessment (p.4 Section 2.3)	
<b>Commentor:</b> USFWS			
<p>Acid mine drainage would be expected to result from this operation. Acid mine drainage has had adverse effects to fish and other aquatic resources, as well as to wildlife, at other mine sites. Please indicate more specifically how acid mine drainage will be managed at this site (specifically how drainage will be treated, including how long lime will be needed to be added to wastewater to maintain a more neutral solution and the source of the lime (e.g., where will the lime be sourced, and will it be stored on site in sufficient quantities to maintain a more neutral solution?))</p>			
<p><b>Initial Response to Comment:</b> The Geochemistry BDR (Appendix B6 of the CPA) indicates that the tailings and waste rock generated by this project are potentially acid-generating. The mine design, operations plans, and closure/reclamation plans have been developed on the basis that the environment must be protected from acidic drainage and leaching metals. Section 3 of the CPA describes the design and operations, including underground mining and backfilling (Section 3.2.2), mine drainage/seepage (Section 3.2.3), cyanide detoxification and tailings deposition (Section 3.3.9), surface contact water (Section 3.3.11), tailings storage facility design (Section 3.6), waste rock management (Section 3.7), chemical storage and use (including lime storage; Section 3.8), water supply and management (Section 3.9.3), water management (Section 3.10), monitoring (Section 3.12) and reclamation and closure (Section 4). Together, this information indicates very specifically how acid mine drainage will be managed at this site.</p>			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<p><b>TRT Response:</b></p> <p>Section 3 of the CPA does address specific concerns regarding how acid mine drainage will be handled at the site. A key concern remains as to how long after closure acid waste waters will need to be treated with lime, and how will this be managed after closure (this also applies to maintenance of the tailings supernatant pond). FWS has not had time to review the Geochemistry BDR Appendix mentioned in Calico's comment in detail at this point and would welcome the opportunity to review this with other subject matter experts.</p>	
<p><b>Agency Comment:</b> Section 3 of the CPA does address specific concerns regarding how acid mine drainage will be handled at the site. A key concern remains as to how long after closure acid waste waters will need to be treated with lime, and how will this be managed after closure (this also applies to maintenance of the tailings supernatant pond). FWS has not had time to review the Geochemistry BDR Appendix mentioned in Calico's comment in detail at this point and would welcome the opportunity to review this with other subject matter experts.</p>			
<p><b>Response to Comment (Feb 2023):</b> Lime is being added to the tailings to meet the requirements of OAR 340-043-0130(2), which require adjusting the Net Neutralization Potential and the Neutralization Potential Ratio of the tailings to levels that render the tailings non-acid generating (i.e., net neutralizing). There is no treatment of wastewater with lime.</p>			

Comment Number: 458	Category: 2	Status: B
<p>Also, as described in the Reclamation and Closure Plans, the supernatant pond is removed as part of closure of the TSF. The TSF is then closed with an impermeable cover so no further water infiltrates the tailings. The Reclaim Pond is used for a period of time to manage residual draindown from the tailings mass after TSF closure, then the Reclaim Pond is converted to an evaporation cell (a lined pond full of moist/wet soil). All other process equipment will be decommissioned, so no other wastewater will be generated following closure.</p>		
<p><b>Response to Comment (Mar/Apr/May 2023):</b> Regarding the potential for acid generation by waste rock and basalt mixed with binders that will be used to backfill the underground mine, see the responses to Comment 90. Calico commissioned SRK Consulting to perform specialized geochemical testing to characterize the backfill material. The testing and results are presented in a report submitted to the TRT and the results are summarized in the responses to Comment 90.</p> <p>Regarding the potential for acidic discharges from the mine during the post-closure period, see the responses to Comment 241. Calico commissioned Lorax Environmental to perform additional groundwater modeling to characterize the effects of mining on groundwater conditions and flows. The model development and results are described in a report submitted to the TRT. The modeling predicts that there will be no discharges of groundwater (springs or seeps) in the vicinity of the underground mine during the post-closure period.</p> <p>Regarding the pH of the supernatant pond in the TSF, previous responses to this comment chain describe how lime is added to the tailings slurry during deposition in the TSF in compliance with requirements of the OAR so that tailings no longer have a potential to generate acid. Therefore, the supernatant pond will not be acidic. Additionally, the water from the supernatant pond will be pumped back to the processing facility for reuse; therefore, the water chemistry would not change significantly due to evaporation because it will be in continuous circulation with make-up water and controlled within the process.</p> <p>A Tailings Chemical Monitoring Plan has been included with the revised CPA as Appendix D2 in response to other comments from the TRT. One of the objectives of the Tailings Chemical Monitoring Plan is to monitor the acid generation potential of the tailings and slurry (i.e., to regulate the addition of lime to the tailings) and assure that the tailings and water going into the TSF is not too basic or acidic. The Tailings Chemical Monitoring Plan also includes monitoring of the supernatant and reclaim pond water to assure that the water quality will not be harmful to birds.</p> <p>CPA Appendix D2, Tailings Chemical Monitoring Plan, was uploaded to DOGAMI on April 3, 2023.</p>		
<p><b>Agency Comment (May 2023):</b> The Service shares the concern raised by Oregon DEQ related to the risk of future generation of acid rock drainage. We remain concerned that the applicant has not demonstrated that all possible preventative measures will be taken to address production of acid rock drainage. At a minimum, waste rock and basalt should be mixed with concrete and lime to offset pH, and this mixture should be allowed to solidify at the most bottom layer of the underground workings before work can begin on the next layer. This process to minimize the threat of acid rock drainage from entering groundwater should be clearly documented. In addition, other alternatives such as cement additives and pastes have not been thoroughly explored or vetted. All alternatives for minimizing production of acid rock drainage should be documented. In order to monitor pH in the underground workings, monitoring wells should be installed in the backfilled concrete areas at the time of reclamation, and, if needed, lime injected into wells to help control pH.</p> <p>Acid will be generated in the TSF water as well. Lime will be added to help monitor pH, but the water could become too acidic or too much lime could be added and become too caustic. Overly acid or caustic conditions would be a threat to waterbirds using the TSF pond, and low pH could also mobilize some metals (potentially above levels of concern). These waters should remain about neutral and the process for monitoring pH and other</p>		

<b>Comment Number:</b> 458	<b>Category:</b> 2	<b>Status:</b> B
water quality parameters should be clearly documented in the Wildlife Protection Plan or elsewhere, along with options that will be available to deter wildlife use of the ponds if pH or other parameters are outside target values.		
<b>Agency Comment (July/Aug 2023):</b> NOT RESOLVED – Awaiting additional discussion with DEQ and information from Paramount Gold regarding this comment.		
<b>Response to Comment (August 9, 2023):</b> This comment should be labeled as Agency (AG) in the Comment Matrix. These questions have been addressed with DEQ.		

## Comment Number: 459

<b>Comment Number:</b> 459		<b>Category:</b> 1	<b>Status:</b> B
<b>Topic:</b> Ecological risk to wildlife		<b>CPA Reference:</b> Ecological Risk Assessment (p.5 Section 3.2)	
<b>Commentor:</b> USFWS			
Please confirm that the source of all the water required to operate the facility will be from precipitation and make-up water, with no surface water or groundwater to be required. Clarify what is the source of the "fresh make-up water", as it appears from Figure 3-1 to be completely from the reclaim pond.			
<b>Initial Response to Comment:</b> The water sources for the mine are groundwater from mine dewatering and from production wells, precipitation, and storm runoff. Water recycling is a key component of the mine design and operating procedures. Section 3.10 of the CPA describes the water management plan and presents a site water balance that presents a quantitative description of the routing and storage of water for the mine.			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b> Per the information provided in the applicant's response (and section 3.9 and 3.10 in the CPA), Figure 3-1 in the Ecological Risk Assessment appears somewhat misleading as per the previous comment. Please revise Figure 3-1 and description in section 3.2 for clarity, adding or identifying the groundwater component.	
<b>Agency Comment:</b> Per the information provided in the applicant's response (and section 3.9 and 3.10 in the CPA), Figure 3-1 in the Ecological Risk Assessment appears somewhat misleading as per the previous comment. Please revise Figure 3-1 and description in section 3.2 for clarity, adding or identifying the groundwater component.			
<b>Response to Comment (Feb 2023):</b> The ecological risk assessment has been revised to include more detail on the sources of water for the mine. The revised ecological risk assessment will be included with the next submittal of the Consolidated Permit Application.			
<b>Response to Comment (Mar/Apr/May 2023):</b> The revised ERA was submitted to DOGAMI on March 22, 2023.			
<b>Agency Comment (July/Aug 2023):</b> NOT RESOLVED - We are unable to locate where the edits described were located in the March 2023 ERA. Please provide page numbers, sections, paragraph references to facilitate locating edits within documents.			
<b>Response to Comment (August 9, 2023):</b> The Ecology Risk Assessment for the Proposed Tailings Storage Facility (CPA Appendix H) has been updated (August 2023) based on comments. All sections were revised, and the uncertainty evaluations (Section 4) was added as requested.			

## Comment Number: 460A

<b>Comment Number:</b> 460A		<b>Category:</b> 1	<b>Status:</b> B
<b>Topic:</b> Ecological risk to wildlife		<b>CPA Reference:</b> Wildlife Protection Plan (p.6), Ecological Risk Assessment (p.14)	
<p><b>Commentor:</b> USFWS</p> <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>			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b>	
<p><b>Response to Comment (Feb 2023):</b> 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>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.</p>			
<p><b>Response to Comment (Mar/Apr/May 2023):</b> Appendix D14, Wildlife Protection Plan, "Wastewaters Accessible to Wildlife" section has been updated to state that the TSF and the reclaim pond will not be connected to streams or other water features that support fish. Normal operations of the TSF will involve ongoing physical disturbances that are expected to prevent the establishment of aquatic plant or invertebrate populations.</p> <p>Appendix D15, Wildlife Mitigation Plan, Section 7.2, "Additional Wildlife Protection Measures," has been updated to state that the results of quarterly observational monitoring of the TSF and reclaim pond will be used to determine the presence of fish, aquatic invertebrates, algae, or aquatic vegetation. This response also pertains to Comment 454.</p> <p>Both the Wildlife Protection Plan and the Wildlife Mitigation Plan include a new table called "TSF and reclaim pond analytes to be monitored for toxicity to wildlife." This table combines information from the Tailings Chemical Monitoring Plan (Appendix D2) and the Ecological Risk Assessment (Appendix G). The plans also detail response measures if the tailings chemical monitoring detects an exceedance.</p>			

Comment Number: 460A	Category: 1	Status: B
<p>CPA Appendix D14, Wildlife Protection Plan, and Appendix D15, Wildlife Mitigation Plan, were resubmitted to DOGAMI on May 31, 2023.</p>		
<p><b>Agency Comment (May 2023):</b> The Ecological Risk Assessment still only evaluates one pathway (drinking) for wildlife exposure to potential toxic water in the TSF pond. We remain concerned that the water chemistry within the TSF pond could be harmful for wildlife that contacts the water (from exposure to concentrated metals or even conventional water quality parameters like pH and salinity). Evaporation from ponds can concentrate metals and can pose other physical problems for wildlife. For example, some evaporation ponds in arid areas at soda ash mine sites contain sodium decahydrate, which can precipitate out of water and crystalize on waterfowl entering the water, preventing buoyancy and promoting drowning. In addition, if food sources (plant, fish, invertebrates) become available within the TSF, risk to wildlife could be greatly enhanced as these pathways would pose a much greater risk compared to the water only pathway. We understand that Oregon DEQ plans to review the ERA and the Service looks forward to using their review to assist us in our assessment of this document. Regardless, we request modifications to the Wildlife Protection Plan to include monitoring and an adaptive management plan in the event monitoring reveals exposure pathways other than from drinking water are possible. The WPP currently states, "Results of regular sampling and testing of the contact waters stored in the TSF and reclaim pond to demonstrate they consistently remain non-toxic to wildlife species that might come into contact with them. Monitoring will include at least quarterly repetition of the ecological risk assessment for likely wildlife receptors initially completed by SRK in 2021 (see Tailings Chemical Monitoring Plan (Calico 2021b))." We request that a table be included in the WPP that details the metals and baseline water quality (temperature, pH, DO, hardness, salinity, conductivity, metals, etc.) constituents that will be monitored quarterly, the anticipated modeled levels, the target ranges, and levels of concern). The appropriate agencies (including the Service) should be notified if any values exceed thresholds that put wildlife at risk and the WPP should detail appropriate adaptive management actions that will be implemented. The WPP should also include quarterly observations to determine if fish, aquatic invertebrates, and aquatic vegetation are occurring in the TSF. Positive findings of any of these wildlife attractants over more than two monitoring periods should trigger consultation with appropriate agencies (including the Service) and the WPP should discuss possible adaptive management actions (deterrents, removal of food sources, etc.)</p>		
<p><b>Agency Comment (July/Aug 2023):</b> PARTIALLY RESOLVED: The response notes that "Wastewaters Accessible to Wildlife" section has been updated to state that the TSF and the reclaim pond will not be connected to streams or other water features that support fish. However, FWS is concerned if groundwater could be a pathway from the TSF and reclaim ponds to surface water in the event that liners fail or malfunction over time, as has happened in the past at other facilities. Also, FWS notes that additional wildlife protection measures have been added, and "quarterly observational monitoring" will be conducted, but monitoring needs to be conducted by qualified personal on a daily basis during the initial stages, with quarterly reporting. So, daily and weekly monitoring should be conducted, as indicated in some management plans, with quarterly REPORTING. This needs to be clarified. FWS also notes that the TSF pond will likely have concentrations of cyanide above levels that fish or aquatic invertebrates will survive or be in sufficient abundance to serve as dietary items, regardless of mechanical disturbance. FWS notes that quarterly monitoring of the TSF and reclaim pond for signs of wildlife or potential wildlife use, a table of water quality monitoring constituents, and toxicity threshold monitoring and reporting is included, but MONITORING and REPORTING elements of the wildlife protection plan and cyanide management plan still need clarification. Also, see response to 454 and 322 regarding the ecological risk elements of this comment, especially regarding the drinking water pathway comments and uncertainty in monitoring.</p>		
<p><b>Response to Comment (August 9, 2023):</b> The Ecology Risk Assessment for the Proposed Tailings Storage Facility (CPA Appendix H) has been updated to address comments regarding wildlife exposure pathways, temporal considerations for monitoring, and uncertainty analysis – see response to Comment 457A.</p> <p>A robust monitoring program is proposed – see responses to Comment 457A.</p>		

**Comment Number:** 460A

**Category:** 1

**Status:** B

In response to this comment, the Wildlife Protection Plan (CPA Appendix D14) provides a description of “quarterly observational monitoring” to further stipulate it will be conducted by qualified personnel on a daily basis initially, and weekly later on, with reporting performed quarterly.

**Comment Number: 463C**

<b>Comment Number: 463C</b>		<b>Category: 1</b>	<b>Status: B</b>
<b>Topic:</b> Groundwater drawdown		<b>CPA Reference:</b> CPA p.44, Groundwater Baseline Report (Vol. III, p. 51)	
<b>Commentor:</b> USFWS			
The extent of impact may be exacerbated by climate change, yet the Groundwater Baseline report does not include climate change effects in its projections.			
<b>Initial Response to Comment:</b> The Groundwater Baseline Report has been accepted.			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b> The conclusions drawn in CPA p. 44 do not consider impacts resulting from drought and climate change. This is a major data gap. At minimum, adaptive management to respond to negative impacts to ground water in light of drought/climate change should be incorporated in to the permit.	
<b>Agency Comment:</b> The conclusions drawn in CPA p. 44 do not consider impacts resulting from drought and climate change. This is a major data gap. At minimum, adaptive management to respond to negative impacts to ground water in light of drought/climate change should be incorporated in to the permit.			
<b>Response to Comment (Feb 2023):</b> Section 2.9.3.2 on page 44 of the CPA summarizes the results of the baseline characterization studies for groundwater that are defined in the Environmental Baseline Study Work Plans (CPA Appendix B23) that were approved by the Technical Review Team. The baseline studies are a characterization of existing conditions, not impacts. The Technical Review Team has accepted the Groundwater Baseline Data Report.  Perhaps the potential environmental effects that could result from the project in consideration of possible climate change scenarios will be assessed as part of the environmental impact assessment that must be performed by the Bureau of Land Management.			
<b>Agency Comment (July/Aug 2023):</b> NOT RESOLVED - The compounding impacts of the mine's water consumption, drought, and climate change still have not been addressed, nor have any adaptive management measures been included to address drought or climate change. Although the Groundwater Baseline Report has been finalized, the comment should be addressed within the Mitigation Plan and/or CIA.			
<b>Response to Comment (August 9, 2023):</b> The Spring and Seep Monitoring and Mitigation Plan (CPA Appendix D18) details the proposed monitoring and mitigation efforts to address identification and corrective action for impacts to springs and seeps from mine operations  Cumulative effects and potential climate change effects are considered in the Environmental Impact Statement (EIS) which is a separate process from the CPA. This comment should be considered resolved for the CPA process.			

## Comment Number: 465

<b>Comment Number:</b> 465		<b>Category:</b> 2	<b>Status:</b> B
<b>Topic:</b> Collection pond lining system		<b>CPA Reference:</b> Reclamation Plan (p. 17)	
<b>Commentor:</b> USFWS			
What is the collection pond lining system made of? The Reclamation Plan states that it will be buried in place. What is the potential for soil contamination as the lining system degrades underground?			
<b>Initial Response to Comment:</b> The design of the containment systems (liners, drains, etc.) for the TSF, TWRSF, and Reclaim Pond have been the focus of review by ODEQ engineers and they are largely satisfied that the designs are protective in the long and short term. The closure and reclamation plans have been the focus of DOGAMI and ODEQ engineers, and they are generally satisfied that the closure and reclamation plans are protective of the environment (although there are outstanding comments and requests for information on details of the plans).			
<b>Stantec – Comment Addressed as Indicated?</b> NA	<b>Stantec – Preliminary Assessment – Sufficient Response?</b> NA	<b>TRT Response:</b> While it is encouraging that ODEQ engineers have been focusing on this concern, insufficient information regarding the potential for leakage and the design life span of methods/products in the containment system have been provided. This information should be included in the TSF Design Report. FWS would welcome the opportunity to review these plans with ODEQ and other subject matter experts.	
<b>Agency Comment:</b> While it is encouraging that ODEQ engineers have been focusing on this concern, insufficient information regarding the potential for leakage and the design life span of methods/products in the containment system have been provided. This information should be included in the TSF Design Report. FWS would welcome the opportunity to review these plans with ODEQ and other subject matter experts.			
<b>Response to Comment (Feb 2023):</b> Response acknowledged.			
<b>Agency Comment (July/Aug 2023):</b> NOT RESOLVED - This comment does not appear to have been addressed and remains unresolved.			
<b>Response to Comment (August 9, 2023):</b> The lining system of the Collection Pond (a storage pond for industrial stormwater) is described in Section 3.3.11 of the CPA. It consists of an upper liner and lower plastic liner system. The upper liner will be 80 mil HDPE and the lower liner will be 60 mil HDPE.  The Reclamation Plan (CPA Appendix D1) was prepared in consultation with BLM and burial in-place of closed stormwater features is a common practice. The potential for soil contamination from the buried in-place collection pond lining system is very low as the liner system is folded onto itself encapsulating any dry sediment remaining in the bottom of this stormwater collection pond and those dry stormwater sediments are anticipated to have low potential for leaching of metals and/or minerals if present.			