M E M O

To: Ben Mossman, Rise Grass Valley
Braiden Chadwick, Mitchell Chadwick, LLP

From: Jonathan Flecker, P.E.

Date: March 10, 2023

Re: City of Grass Valley letter dated February 15th 2023 comments on the Final EIR

I have reviewed the traffic comments in the City of Grass Valley letter and provide the below responses.

Agency Response 8.29

City of Grass Valley comment on Draft EIR

> *Vehicle Miles Traveled Standard of Significance (page 4.12-27) indicates that VMT impact may be considered less than significant if the Project total weekday VMT / Service Population is equal to or less than 14.3 percent below the subarea mean under baseline conditions and the Project is consistent with the jurisdiction's General Plan. Grass Valley was used as the subarea, which has a Home-Based VMT per worker of 18.6. The 18.6 Grass Valley VMT standard (Table 4.12-4) appears to be sourced from Table A-3 of the Senate Bill 743 Vehicle Miles Traveled Implementation (Fehr & Peers, July 6, 2020). However, the Home-Based Attraction VMT per Employee presented in Table A-4 of the same document which addresses "issues with trip lengths for trips with origins or destinations outside the model" and other known trip issues is 13.1 for Grass Valley. Because the 13.1 value addresses trip issues, please update the standard to reflect this value.*

City of Grass Valley comment on Final EIR

> *VMT analysis has been revised from Home Based Work Attraction VMT / Employee (Grass Valley standard of 13.1, Unincorporated Western Nevada County standard of 13.1) to Total VMT per Service Population (Grass Valley standard of 28.0, Unincorporated Western Nevada County standard of 18.1). The TIA preparer has indicated that a VMT per service population ratio of 14.3 percent below 18.1 would be the impact criteria. The guidelines offer the option to calculate based upon VMT / Employee or VMT / Service Population. In either case, the estimated Project VMT per service population (employee) has been determined by including the number of Project employees in the Project traffic analysis zone. Interaction with the employees is then extracted using typical modeling procedures. Although this modeling process calculates passenger car VMT activity, truck activity associated with the export of engineered fill from the Brunswick site, as well as off-site transport of gold concentrate do not appear to have been captured in this analysis. Further articulation of these effects must be discussed and, as necessary, mitigated.*

Response from Jonathan Flecker

The City of Grass Valley states that vehicle miles travelled from truck activity associated with the export of engineered fill and gold concentrate were not analyzed and must be discussed and mitigated.

As discussed on page 10 of the Traffic Impact Analysis, Appendix O of the DEIR, OPR stated in their 2018 guidance that "Proposed Section 15064.3, subdivision (a), states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project." Here, the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. As discussed on page 4.12-52 through 4.12-55 of the DEIR, SB 743 and the associated CEQA Guidelines Section 15064.3 were established in order to reduce statewide GHG emissions, and do not require an analysis of VMT related to heavy truck use for the movement of goods. Nevada County has not yet adopted transportation analysis guidelines for heavy trucks, but other jurisdictions in the State have supported the exclusion of heavy truck trips from VMT analysis. As such, this EIR does not include heavy truck trips associated with the transport of fill in the VMT analysis.

Agency Response 8.30

City of Grass Valley comment on Draft EIR

> ***Table 4.12-8*** *presents Project Trip Generation which includes automobiles and trucks but does not reflect passenger car equivalents (PCEs). To represent the impact that large trucks, buses and recreational vehicles have on traffic flow; trucks should be converted into PCEs. By their size alone, these vehicles occupy the same space as two or more passenger cars. In addition, the time it takes for them to accelerate and decelerate is also much longer than for passenger cars and varies depending on the type of vehicle and number of axles, particularly when considering the topography of the roads proposed for the haul route. Typical PCE factors are 1.5 for 2-axle trucks, 2.0 for 3-axle trucks and 3.0 for 4+-axle trucks. Please update trip generation to reflect truck PCEs.*

City of Grass Valley comment on Final EIR

> *The response indicates that the LOS/ Queuing software accounts for PCE, which is true ONLY IF heavy vehicle factors are appropriate to the truck share on study area roadways. Many of the analysis worksheets include 2% heavy vehicles rather than correct truck percentages.*

Response from Jonathan Flecker

Table 4.12-8 of the DEIR shows project trip generation which includes heavy truck trips. In response to the City of Grass Valley's DEIR comment, the heavy truck percentages in the Traffic Impact Report were reviewed and adjusted where appropriate. Updates to the Synchro / SimTraffic analyses for heavy vehicle factors were completed and presented in the revised Traffic Impact Analysis included in Appendix N of the Final EIR.

The City of Grass Valley states that many of the analysis worksheet include 2% heavy vehicles rather than correct truck percentages. However, heavy truck percentages used in the revised Traffic Impact Analysis in Appendix N of the Final EIR are representative of existing and project conditions.

The relevant intersections where the Project truck traffic will travel through on Brunswick Road are intersections 9 through 14 and 24. The percentage heavy vehicles for intersections 12, 13, 14, 24, analyzed using the Synchro software are shown in pages 950 through 1555 of Volume VIII of the Final EIR and pages 1 through 96 of Volume IX of the Final EIR. As can be seen in the worksheets, the percentage heavy vehicles at all of these intersections vary and are not restricted to a 2% factor. For example, on page 68 of Volume IX, at intersection 13: Brunswick Rd & Whispering Pines Ln for the Cumulative plus project 1530 PM, heavy vehicles percent ranges from 2% to 9%.

It is noted that heavy vehicle percentages at the project driveway intersections 16, 17 and 18 are assumed at the default value of 2%. Modification of the truck percentage will have minimal effect on LOS due to the low truck volumes entering or exiting the site. There are up to 12 trucks entering either site, one every 5 minutes on average. The change in LOS will be minor as there is adequate capacity at the project intersections due to

the low volumes; these intersections operate with the driveway traffic operating at LOS B conditions. Inbound movements at these locations operate at LOS A. Furthermore, these intersections have been specifically analyzed for project truck traffic turn assessment and sight distance in sections IX and X of the Traffic Impact Analysis.

Agency Response 8.34

City of Grass Valley comment on Draft EIR

> *Table 11 of the TIA references daily trips (maximum and average) but does not indicate any truck to automobile equivalency (passenger car equivalent) factors to represent the trucks heavy vehicle effect on the roadway system. Truck traffic should be adjusted to PCEs (or otherwise fully represented) for analysis purposes.*

City of Grass Valley comment on Final EIR

> *As in Agency Response 8.30, this response repeats the claim that the LOS / Queuing software accounts for PCE, which is true ONLY IF heavy vehicle factors are appropriate to the truck share on study area roadways. Many of the analysis worksheets include 2% heavy vehicles rather than appropriate truck percentages. An adequate study must be performed.*

Response from Jonathan Flecker

Please see response above regarding Agency Response 8:30.

Agency Response 8.35

City of Grass Valley comment on Draft EIR

> *Please convert trucks to PCEs for LOS analysis OR update heavy vehicle factors. Heavy vehicle percentages in the LOS worksheets indicate 2% to 5% heavy vehicles (most are 2%). The appendix page labeled HCM 6th Signalized Intersection Summary MIT/GS Cumulative plus Project PM Peak 14: E. Bennett Rd/Brunswick Rd includes 2% Heavy Vehicle factor. However, Section XI (Acceleration on Grade) states that along Brunswick Road:*
>
> *"Trucks currently account for about 6% of all traffic between SR 49 and SR 174, with the truck traffic increasing to about 9% between Whispering Pines Lane and E. Bennett Road. Trucks also account for about 8% of traffic along Whispering Pines Lane."*

City of Grass Valley comment on Final EIR

> *The response indicates that the analysis was updated to include a higher percentage of trucks. However, the appendices still include 2% heavy vehicles for intersections 13 and 14. For intersection 14, the Cumulative and Cumulative plus Project AM still shows 2% heavy vehicles (pdf page 182 and 191 of document 9: Volume IX of IX Appendix N Continued - Appendix R). Intersection 13 includes 2% heavy vehicles for Cumulative plus Project PM (page 193 of document 9) etc. As indicated above, Section XI (Acceleration on Grade) states that along Brunswick Road, trucks currently account for about 6% of all traffic between SR 49 and SR 174, with the truck traffic increasing to about 9% between Whispering Pines Lane and E. Bennett Road.*

Response from Jonathan Flecker

Please see response above regarding Agency Response 8:30. All truck percentages for scenarios relevant to

the analysis have been updated in the Final EIR.

As discussed in Section 1.1 of the Traffic Impact Analysis the study addresses the following scenarios for LOS analysis:

1. Existing Setting
2. Existing Plus Approved Projects [EPAP] (5-year)
   - A. Existing Plus Approved Projects [EPAP] Conditions
   - B. EPAP plus Project Conditions to Centennial site
   - C. EPAP plus Project Conditions to SR 49
3. Cumulative Impacts (2035)
   - A. 2035 Traffic Conditions
   - B. 2035 Plus Project Conditions to Centennial site
   - C. 2035 Plus Project Conditions to SR 49

The pages referenced, 182, 191, and 193 of Volume IX of the Final EIR are annotated in the top right corner of the page as MITIG8. This MITIG8 scenario represents an analysis of the effect of improving certain intersection operations. The results of the MITIG8 scenario in the appendix of the Traffic Impact Analysis are not used in the Traffic Impact Analysis and are provided for informational purposes only.

Agency Response 8.36

City of Grass Valley comment on Draft EIR

Tables 14A, 14B, 17A, 17B, 20A, 20B, 23A, 23B, 26A, 26B should be updated to reflect LOS analysis results with trucks fully represented.

City of Grass Valley comment on Final EIR

As in Agency Responses 8.30 and 8-34, this response repeats the claim that the LOS / Queuing software accounts for PCE, which is true ONLY IF heavy vehicle factors are appropriate to the truck share on study area roadways. Appropriate truck percentages do not appear in the Appendices (see 8-34 and 8-35 above). Again, an adequate study must be performed.

Response from Jonathan Flecker

Please see response above regarding Agency Response 8:30.

LOS tables were updated as appropriate in the Final EIR. Please see Response to Comment Agcy 8-36 in the Final EIR.

Agency Response 8.37

City of Grass Valley comment on Draft EIR

Tables 15A, 15B, 18A, 18B, 21A, 21B, 24A, 24B, 27A, 27B: should be updated to reflect queuing analysis once trucks are fully represented. The TIA indicates "It is assumed that one additional vehicle (25') can store in the available left or right turn taper and this occurs at six locations". Overflow trucks may be significantly longer than 25' -please update to fully account for trucks.

City of Grass Valley comment on Final EIR

The queueing analysis has not been updated in response to this comment.

Response from Jonathan Flecker

Please see response above regarding Agency Response 8:30.

The queue results account for truck traffic and the tables were updated as appropriate in the Final EIR. Please see Response to Comment Agcy 8-37 in the Final EIR.

Agency Response 8.38

City of Grass Valley comment on Draft EIR

> *Section 11.4 Findings/Results of the TIA indicates the Project generated VMT result is 14.7 for 2012 Base Year and 13.9 for 2035 Future Year. The TIA states that because 13.9 is less than the 18.6 average for Grass Valley, there is no VMT impact. However, VMT impacts are calculated on baseline condition. Interpolation between 14.7 for 2012 and 13.9 for 2035 indicates the Project generated VMT would be 14.4 in 2020. The Grass Valley VMT/SP is 13.1 (a reduction of 14.3% results in a threshold of 11.2). The interpolated 2020 VMT/SP of 14.4 is more than the threshold and an impact is found. Please update the VMT findings.*

City of Grass Valley comment on Final EIR

> *The County's response states that "Service Population is defined in the Nevada County TIAG (page 3) as the total number of residents, employees, and students. The Project does not have residents or students and, therefore, the VMT per Employee is the VMT per Service Population for the project." It is agreed that the Project Service Population is the Project Employment. However, VMT / Employee only includes home-work attraction trips, but VMT / Service Population is based on total trips, so the VMT / Employee does not equal VMT / Service Population. The guidelines do offer the option to calculate based upon VMT / Employee or VMT / Service Population. The VMT / Service Population calculation seems to include all trip types.*

Response from Jonathan Flecker

Please see Response to Comment Agcy 8-38 in the Final EIR. As stated in the FEIR Response, the use of home-based VMT per resident and home-based work VTM per employee is discussed in Section 4.1 but only for screening purposes. Section 7.0 of the Nevada County TIAG states that a project's VMT impact may be considered less than significant if the project total weekday VMT per service population is equal to or less than 14.3% below the subarea mean under baseline conditions. Section 4.1 of the TIAG report states: "VMT per service population is how much VMT is generated by the residents, employee, and students of the project."

MEMORANDUM

To:	Ben Mossman, Rise Grass Valley, Inc.
From:	Matthew Morales, Dudek
Subject:	Idaho-Maryland Mine Projects – Additional Response to Comments
Date:	April 14, 2023
cc:	Jennifer Reed, Dudek
Attachment(s):	A. Baseline Environmental Consulting Comments

This memorandum addresses additional comments from Baseline Environmental Consulting (February 2, 2023, included as attachment 1), as well provides a revision to the Final Environmental Impact Report (EIR) response to the Agcy 1-14 Comment.

1 Response to Baseline Environmental Consulting Comments

Response to Comment BEC 1

This comment is an introduction to the comments to follow. No further response is required or necessary.

Response to Comment BEC 2

This comment summarizes the previously provided comment and response to GRP 21-122 included in the Final EIR, which pertains to what could happen with materials to be off hauled if the Centennial Site were not available for fill. Comment BEC 2 states that the Final EIR did not assess the worst-case scenario, since it evaluated fill going to the Brunswick Site rather than to off-site locations if the Centennial Site were not available. Further, the comment questions the feasibility of implementing Condition of Approval (COA) 4 included in the Final EIR. COA 4 states that "in the event that sand tailings or waste rock material is transported from the Brunswick Site prior to 2033 to locations other than the Centennial Site, all transport of such material shall be accomplished using electric vehicles" (Final EIR page 2-926).

In response to the Final EIR not addressing the worst-case scenario, California courts have consistently held that "an EIR is not required to engage in speculation in order to analyze a worst-case scenario." (see Napa Citizens for Honest Government v. Napa County Bd. of Supervisors (2001) 91 Cal.App.4th 342, 373.). Regarding feasibility of implementing COA 4, the commenter does not provide substantiation of this assertion, as there are already electric Class 8 trucks currently available from a number of established manufacturers, including Volvo, Freightliner, and Kenworth.

Response to Comment BEC 3

This comment reiterates the previous Final EIR comment GRP 21-123 regarding the disclosure of the effectiveness of applicant proposed measures (APMs), which was already addressed in the Final EIR. The commenter also correctly identifies an error in the following Final EIR revision:

> The emission data presented in Table 4.3-17 (i.e., unmitigated emissions) reflect the reductions that would occur without implementation of APM-AQ-1 and APM-AQ-2. (Final EIR page 2-182)

As indicated by the commenter, the original sentence in the Draft EIR was correct, which is reflected in Appendix E.1 of the Draft EIR, in that the unmitigated emissions inventory already accounts for implementation of APM-AQ-1 and APM-AQ-2. This inclusion of APMs in the unmitigated inventory is appropriate, as explained in the Final EIR Response to Comment GRP 21-63:

> As the applicant proposed these measures as part of the project, prior to analysis of air quality impacts of the project, they are properly considered part of the Project Description. Regarding project design, CEQA Guidelines 15070(b)(1) and 15126.4(a)(1)(A) specifically permit the incorporation of project design features into a project. Nonetheless, to clarify that the APMs are enforceable conditions, a condition of approval shall be imposed on the project, and incorporated into the MMRP to require that applicant proposed measures APM-AQ-1, APM-AQ-2, and APM-AQ-3 will be implemented by the mine operator, as already discussed in Response to Comment Grp 21-7.

Finally, the mitigation measures proposed by the commenter are not necessary because they would not reduce any significant impact of the project. See also Final EIR Response to Comment Ind 237-3.

Response to Comment BEC 4

This comment reiterates the previous Final EIR comments GRP 21-125 and GRP 21-126, which were addressed in the Final EIR. In addition, it states that the summary of health risks (Table 1 in the Comment BEC 4) included in Response to Comments GRP 21-122 and GRP 21-123 should have been added in the Air Quality Chapter or Appendix E.1 of the Draft EIR. Finally, the comment states that the Final EIR fails to provide an explanation for how a 27% reduction in cancer risk can be achieved by implementing Mitigation Measure 4.3-1b and provides a table of diesel particulate matter (DPM) emissions to justify the assertion.

In response, the summary of health risks outlined in Response to comments GRP 21-122 and GRP 21-123, this was not added to the Draft EIR as it was provided for clarification purposes and there was no change to the analysis or the impact significance conclusion from the Draft EIR. Unmitigated and mitigated health risks were already included in the Draft EIR and compared to the CEQA threshold. Further, the emissions of DPM shown in Table 2 of Comment BEC 4 are not accurate or consistent with the DPM emissions presented in Tables 5 and 10 of Appendix E.1 of the Draft EIR. For example, in 2021, during construction, the project emitted 0.28 tons of DPM prior to mitigation and 0.08 tons of DPM with mitigation. The commenter claims that 0.32 and 0.13 tons of DPM were emitted during construction prior to and with mitigation, respectively. Similarly, the commenter shows DPM emissions of 0.22 to 0.42 tons per year during operation compared to 0.01 to 0.02 tons per year of DPM in the health risk assessment. As such, the commenter's claim is not accurate with respect to the level of DPM emissions from the project.

As shown in the commenter's Table 1, the majority of the health risk is attributable to asbestos emissions, not DPM emissions. However, Mitigation Measure 4.3-1(b) reduces DPM emissions during construction. This is relevant as described in Section 2.1 of Appendix E.1 of the Draft EIR as follows:

> The cancer risk methodology described in the exposure assessment and stochastic analysis technical support document and the 2015 Risk Assessment Guidelines Manual accounts for the higher sensitivity of infants and children by applying age-specific daily breathing rates and age-sensitivity factors (ASFs). According to the technical support document, "accounting for effects of early-in life exposure requires accounting for both the increased potency of early in life exposure to carcinogens and the greater exposure on a per [kilogram] body weight that occurs early in life due to behavioral and physiological differences between infants and children, and adults" (OEHHA 2012). In the absence of chemical-specific data, OEHHA recommends a default ASF of 10 for the third trimester to age 2 years, and an ASF of 3 for ages 2 through 15 years to account for potential increased sensitivity to carcinogens during childhood (OEHHA 2015). The ASF for adults is 1. In addition to the ASFs, children have higher daily breathing rates per unit of body weight than adults. The OEHHA guidance manual considers the age-specific breathing rates in the cancer risk calculations.

This is relevant as Mitigation Measure 4.3-1(b) reduces emissions of DPM specifically during construction, which would be the first year of sensitive receptor exposure and during the highest ASF of 0 to 2 years of age. Thus, mitigating DPM emissions during the most sensitive early-in life exposure results in a greater reduction in overall cancer risk (i.e., it is not a direct 1:1 ratio of percent DPM reduction to percent cancer risk reduction).

Response to Comment BEC 5

This comment reiterates the previous Final EIR comment GRP 21-127, which was addressed in the Final EIR. The comment also asserts that the Bay Area Air Quality Management District (BAAQMD) is in the process of considering updating the greenhouse gas (GHG) threshold for industrial/ stationary source projects, and thus the County "blindly applied a threshold of 10,000 MT [metric ton] CO_2e [carbon dioxide equivalent]", and that the application of the threshold should be further justified. In response, the recognition that an air district is "considering" updating a particular threshold does not provide substantial evidence that an applied threshold was erroneous. In fact, as of the preparation of this memorandum, the BAAQMD's stationary source threshold has not yet been updated. All of the air districts cited as expert agencies have justification documents for the development of the 10,000 MT CO_2e threshold and continue to use said threshold in CEQA documents where those air districts are the lead agency. As an example, here is an excerpt from the Placer County Air Pollution Control District's *California Environmental Quality Act Thresholds of Significance Justification Report* (October 2016):

> As discussed in the criteria pollutant threshold justification, there is a direct nexus between direct emissions from stationary sources and indirect emissions associated with land use sources. GHG emissions, once emitted, are indistinguishable as to the source – "air pollution is air pollution" – and have the same detrimental effect on climate change regardless of the source. According to this concept, the District proposes 10,000 MT CO_2e/yr as a Bright-line threshold in Placer County for all projects (including stationary source projects) subject to CEQA, since this threshold has been used by CARB as a regulatory requirement and was adopted by several air districts as a CEQA significance threshold for stationary sources. Table 10 demonstrates that 10,000 MT CO_2e/yr can be used to determine if a project would be considered a substantially large enough of a contribution to cumulative impacts and therefore significant in Placer

County. A project which exceeds this proposed Bright-line threshold should identify mitigation to lessen the emissions for its cumulative impact.

Finally, it should be highlighted that a non-mobile source of GHGs, specifically electricity, is the primary source of GHGs during all years of active operation. This is an important note since the GHG intensity of the utility (PG&E) was kept constant during the entire duration of the project, which was a conservative assumption in the Draft EIR, since multiple regulations require increased proportions of renewables in the mix over time. For instance, Senate Bill (SB) 100 requires the following percentage of retail sales of electricity to California end-use customers to come from eligible renewable energy resources and zero-carbon resources: 44% by December 31, 2024; 52% by December 31, 2027; and 60% by December 31, 2030. Further, Senate Bill 1020 (approved in September 2022) requires the following percentage of retail sales of electricity to California end-use customers to come from eligible renewable energy resources and zero-carbon resources: 90% by December 31, 2035, 95% by December 31, 2040, and 100% by December 31, 2045. With electricity representing about 50% to 66% of the total project GHG inventory (depending on scenario), the substantial reductions in GHG intensity from increased renewables in the utility provided electricity would also translate to substantial reductions in the project's GHGs, which had not been accounted for.

2 Revision to Agcy 1-14 Response to Comment

The comment is stating that the commenter believes that Mitigation Measure 4.3-1(b) and APM-AQ-1 are duplicative and that emission reductions were double counted.

In response, Mitigation Measure 4.3-1(b) and APM-AQ-1 are not duplicative since they pertain to different aspects of the project. Mitigation Measure 4.3-1(b) requires Tier 4 Final engines for equipment owned by contractors during construction, whereas APM-AQ-1 has been incorporated into the project design and specifies Tier 4 Final engines for off-road surface equipment will be used during operations. This is explained in Final EIR Master Response 19.

Finally, as noted in Response to Comment BEC 3 above, the text revision in the Final EIR Response to Comment Agcy 1-14 was an error and the original sentence in the Draft EIR was correct.

Attachment A

2 February 2023
22204-01

Ellison Folk
Shute, Mihaly & Weinberger LLP
396 Hayes Street
San Francisco, CA 94102-4421

Subject: **Review of Idaho-Maryland Mine Project, Final Environmental Impact Report, SCH# 2020070378** BEC 1

Dear Ms. Folk:

In February 2022, Baseline Environmental Consulting (Baseline) peer reviewed the Draft Environmental Impact Report (DEIR) for the proposed Idaho-Maryland Mine Project (project) and prepared a comment letter that identified flaws in the analysis used to support the significance determinations for air quality and greenhouse gas (GHG) emissions (as well as other topics). Baseline has reviewed the Air Quality and GHG Emissions sections of the Final Environmental Impact Report (FEIR) for the proposed project. Based on our review of the revisions and responses to comments presented in the FEIR, we have identified flaws that remain in the overall CEQA analysis. The specific concerns identified in our review of the air quality and GHG sections of the FEIR are described in detail below. BEC 1

Comment GRP 21-122: Underestimated Emissions from Off-Site Haul Truck Trips

Baseline previously prepared a comment for the DEIR (FEIR comment GRP 21-122) regarding the inadequate analysis of criteria air pollutant and GHG emissions from haul trucks transporting waste rock and mine tailings to various destinations over the lifetime of the project. The DEIR air quality analysis assumed that waste rock and mine tailings would be used as engineered fill at the following locations over time:

- Years 2022–2026: Fill placement at the Centennial Industrial Site;
- Years 2027–2032: Fill placement at the Brunswick Industrial Site; and
- Years 2033–2102: Fill placement at off-site locations.

BEC 2

The air quality and GHG analysis in the DEIR assumed that remediation of the Centennial Industrial Site would be completed and approved by the DTSC prior to the opening year. However, since remediation of the Centennial Industrial Site is not included as part of the CEQA analysis for the project, there is no assurance that remediation of the site will be completed prior to the opening year of the project or within the lifetime of the project. The DEIR acknowledged this on page 3-26, stating that "if the remediation of the Centennial Industrial

Site, currently under DTSC oversight, is not complete upon commencement of mining, in which case engineered fill would be placed at the Brunswick Industrial Site and/or transported off-site to be utilized in local and regional construction markets."

As Baseline previously commented (FEIR comment GRP-122), the DEIR should have analyzed the worst-case scenario for estimating emissions from haul trucks transporting engineered fill, which would be to assume trucks may need to haul the engineered fill to off-site locations about 60 miles away in the opening year (2022). Baseline prepared an updated analysis of the project's daily nitrogen oxide (NOx) emissions in the opening year related to haul trucks transporting engineered fill to the off-site locations instead of the Centennial Industrial Site. Based on the updated analysis, the project would generate about 193 pounds per day of NOx, which would exceed the Northern Sierra Air Quality Management District's (NSAQMD's) Level C threshold of significance of 136 pounds per day. This would result in a significant and unavoidable impact if emissions are not mitigated below the NSAQMD's Level C threshold.

In response to comment GRP 21-122, page 2-957 of the FEIR states that "if the Centennial site were not available, fill placement would take place initially at the Brunswick site rather than being hauled to local and regional construction projects." Based on this assumption, the FEIR states that emissions from haul trucks transporting engineered fill to the more distance off-site locations would not occur before 2027, after placement of engineered fill at the Brunswick site is completed. According to the FEIR response to comment, the project's total NOx emissions in 2027 would be about 125 pounds per day, which is below NSAQMD's Level C threshold of significance of 136 pounds per day (page 2-958 of FEIR).

BEC 2 cont.

However, the FEIR did not provide any revisions to the Project Description or other chapters of the DEIR explicitly stating that engineered fill will not be transported to off-site locations prior 2027. The current language in the Project Description clearly states that if the Centennial Industrial Site were not available, then "engineered fill would be placed at the Brunswick Industrial Site and/or transported off-site" (page 3-26 of DEIR). Because there is no explicit requirement preventing the project from transporting fill to off-site locations prior 2027, the FEIR has failed to analyze the worst-case scenario for the project's criteria air pollutant and GHG emissions.

Aside from failing to analyze the worst-case scenario, Baseline acknowledges that Master Response 4 of the FEIR attempts to address the air quality and GHG emission concerns associated with haul trucks traveling to off-site locations. As stated on page 2-10 of the FEIR, "the applicant has agreed to a condition of approval that would require the applicant to use electric trucks for any offsite sale or transport of waste rock or sand tailings from the Brunswick site (other than to the Centennial Site) if such transport occurs prior to 2033." The purpose of this condition of approval (referred to as "COA 4") is to ensure the project would not have greater air quality and GHG emissions impacts than analyzed under the DEIR if the Centennial

Site is not available for placement of engineered fill. Baseline appreciates that the applicant has adopted COA 4 with the intent to address the potentially significant air quality and GHG emissions impacts not properly analyzed in the DEIR. However, there is currently limited commercial availability for electric-powered haul trucks. According to the California Air Resources Board's Advanced Clean Trucks regulation, only about 5% of the heavy-duty trucks that will be manufactured in California in 2024 will be zero-emission vehicles (i.e., battery electric or hydrogen fuel cell electric). Also, the FEIR does not address the need to install charging infrastructure for heavy-duty trucks at the project site. While COA 4 was incorporated into the project with good intentions, the FEIR fails to evaluate the feasibility of implementing COA 4. Therefore, the assumption that 100 percent of the project's heavy-duty trucks used for transporting engineered fill to off-site locations prior to 2033 will be electric is unsubstantiated. BEC 2 cont.

Comments GRP 21-123 and GRP 21-124: Incomplete Evaluation of Applicant Proposed Measures and Mitigation Measures

Baseline previously prepared a comment (FEIR comment GRP 21-123) about the need to incorporate the applicant proposed measures (APMs) related to air quality and GHG emissions into the project design to ensure they are implemented. In response to comment GRP 21-123 (and others), the FEIR revised the Project Description in the DEIR to include the following APMs:

- APM-AQ-1: Exhaust Emission Controls
- APM-AQ-2: Surface Fugitive Dust Controls

Baseline acknowledges and appreciates that the requested revisions were made to ensure the APMs are implemented. However, the FEIR also revised the following sentence in the Air Quality chapter of the DEIR (page 2-182 of FEIR): "The emission data presented in Table 4.3-17 (i.e., unmitigated emissions) reflect the reductions that would occur without implementation of APM-AQ-1 and APM-AQ-2." This statement is not true. According to page 50 of Appendix E.1 of the DEIR, the unmitigated criteria air pollutant emissions summarized in Table 4.3-17 includes implementation of APM-AQ-1 and APM-AQ-2. In other words, Table 4.3-17 of the DEIR summarizes the project's mitigated emissions with APM-AQ-1 and APM-AQ-2 instead of the unmitigated emissions. BEC 3

As Baseline previously commented (GRP 21-123), the DEIR should have been revised to disclose the project's unmitigated emissions without implementation of the APMs and evaluate the effectiveness of the APMs to reduce the project's air quality impacts. Similarly, Baseline commented (GRP 21-124) that the DEIR analysis should have been updated to identify and evaluate feasible mitigation measures that would reduce the project's criteria air pollutant emissions during operation. In response, the FEIR incorporated APM-AQ-1 and APM-AQ-2 into the Project Description, which requires the use of Tier 4 final engines for all off-road equipment

and dust control measures during project operation. However, the FEIR did not evaluate the effectiveness of APM-AQ-1 and APM-AQ-2 to reduce the project's unmitigated emissions.

According to Table 4.3-17 of the DEIR, it appears that emissions of NOx from off-road equipment (about 6.7 pounds per day) after implementing APM-AQ-1 accounts for about 7% of the project's total NOx emissions (100.2 pounds per day) during operation in 2022. Because the unmitigated NOx emissions without APM-AQ-1 have not been disclosed, it's not clear what level of reduction in NOx emissions is achieved by implementing APM-AQ-1. According to Table 4.3-17 of the DEIR, operation of on-road vehicles and emergency generator testing would account for about 46% and 19% of the project's NOx emissions in 2022, but the FEIR does not evaluate potential mitigation measures such as increasing electric vehicle charging infrastructure or using battery-powered emergency generators to reduce NOx emissions from these sources. As a result, the FEIR failed to evaluate and disclose the effectiveness of implementing the APMs or other potential mitigation measures to reduce the project's air quality impacts during operation.

BEC 3 cont.

Comments GRP 21-125 and 21-126: Unsubstantiated Health Risk Assessment

Baseline previously prepared comments for the DEIR (FEIR comments GRP 21-125 and 21-126) about the inadequacy of the supporting documentation for the project's air quality health risk assessment (HRA). The DEIR did not include documentation of the individual health-risk contributions from up to 25 emission sources during each phase of project construction and operation. In addition, no graphics were provided to show the location of the modeled emission sources, sensitive receptors, and results of the air dispersion modeling. As a result, there was no reasonable method for the public or decision makers to review the validity of the HRA findings and evaluate the effectiveness of proposed Mitigation Measure 4.3-1(b).

According to the HRA, the estimated unmitigated cancer risk at the maximally exposed individual resident (MEIR) was reported to be 10.4 in a million, which is above the threshold of significance (10.0 in a million). With implementation of higher-tier engines during construction, as required by Mitigation Measure 4.3-1(b), the DEIR estimated that the project would result in an incremental cancer risk of 7.6 in one million. This 27% reduction in cancer risk is surprising, because Mitigation Measure 4.3-1(b) only reduces emissions during 1 year of construction and does not reduce any of the other emission sources over the 80 years of operation. However, there is no way to review the validity of the HRA results and effectiveness of Mitigation Measure 4.3-1(b) because the results of the HRA analysis are poorly documented and non-existent in some cases.

BEC 4

In partial response to comments GRP 21-122 and 21-123, a Health Risk Memorandum was attached to the Final EIR as Appendix K that included health risk isopleths and sensitive receptor locations, which helps to clarify some of missing HRA documentation in the DEIR. The

FEIR also provided a summary table of health risks in response to comments GRP 21-122 and 21-123 (see **Table 1** below). This information was not included in the Air Quality chapter or Appendix E.1 of the DEIR. Table 4.3-21 *Project-Related Health Risk Results* of the DEIR should have been revised to disclose this information to the public.

Table 1. Calculated Cancer Risks at the MEIR

Activity	Cancer Risk per million Mitigated	Unmitigated
Construction - Asbestos in Dust	3.7	3.7
Construction - Diesel Exhaust	1.2	4.1
Operations - Asbestos in Dust	1.8	1.8
Operations - Diesel Exhaust	0.6	0.6
Operations - Arsenic in Dust	0.3	0.3
Total	7.6	10.4

Note: MEIR = maximally exposed individual resident.
Source: Page 2-942 of FEIR

BEC 4

The HRA was based on a 30-year exposure scenario. As summarized in **Table 2** below, the project would generate about 8.60 tons of diesel exhaust on-site from offroad equipment and on-road vehicles over a 30-year period. Implementation of Mitigation Measure 4.3-1(b) during construction in 2021 would reduce the project's total diesel exhaust emissions over the 30-year period by about 2% to 8.41 tons. This is a relatively minor reduction in the project's total on-site diesel exhaust emissions. However, according to **Table 1**, implementation of Mitigation Measure 4.3-1(b) would reduce the project's overall cancer risk by about 27%, which does not seem to correlate with the project's 2% reduction in diesel exhaust over the 30-year period. It appears that the cancer risk associated with diesel exhaust during project operations from 2022 to 2050 has been substantially underestimated.

The FEIR fails to provide an explanation for how a 27% reduction in cancer risk can be achieved by implementing Mitigation Measure 4.3-1(b). To verify the results of the HRA, the public would need to know the emission rates used for each modeled source for each year of construction and operation from 2021 to 2050, as well as the location of each source. This level of information is not documented Appendix E.1 of the DEIR or Appendix K of the FEIR.

Table 2. Annual On-Site Diesel Exhaust Emissions

Year	Unmitigated Diesel Exhaust Emissions (tons)	Mitigated Diesel Exhaust Emissions (tons)	% Reduction
2021	0.32	0.13	59%
2022	0.36	0.36	0%
2023	0.36	0.36	0%
2024	0.36	0.36	0%
2025	0.36	0.36	0%
2026	0.36	0.36	0%
2027	0.42	0.42	0%
2028	0.42	0.42	0%
2029	0.42	0.42	0%
2030	0.42	0.42	0%
2031	0.42	0.42	0%
2032	0.42	0.42	0%
2033	0.22	0.22	0%
2034	0.22	0.22	0%
2035	0.22	0.22	0%
2036	0.22	0.22	0%
2037	0.22	0.22	0%
2038	0.22	0.22	0%
2039	0.22	0.22	0%
2040	0.22	0.22	0%
2041	0.22	0.22	0%
2042	0.22	0.22	0%
2043	0.22	0.22	0%
2044	0.22	0.22	0%
2045	0.22	0.22	0%
2046	0.22	0.22	0%
2047	0.22	0.22	0%
2048	0.22	0.22	0%
2049	0.22	0.22	0%
2050	0.22	0.22	0%
TOTAL	**8.60**	**8.41**	**2%**

Note: Based on PM10 emissions from offroad equipment and on-road vehicles reported in Appendix E.1 pages 114-119.

BEC 4

Comment GRP 21-127: Unsubstantiated GHG Threshold of Significance

Baseline previously prepared a comment (FEIR comment GRP 21-127) about the DEIR failing to provide justification for using an annual GHG threshold of significance of 10,000 metric tons of carbon dioxide equivalents (MTCO2e) to demonstrate how the project would achieve the statewide GHG reductions goals for 2030 and beyond over the proposed 80-year lifetime of the mining permit.

In response to the comment GRP 21-127 (and others), page 2-116 of the FEIR provides the following explanation:

> *As a basis for choosing 10,000 MT CO2e as the threshold of significance for operational GHG emissions, the DEIR provided the following reasoning: "For operations, because the project is an industrial project that includes stationary sources (i.e., diesel generators used for emergency power), the project's GHG emissions were compared to the 10,000 MT CO2e per year quantitative threshold, which, as described above, is used by SMAQMD, PCAPCD, BAAQMD, and SCAQMD for industrial and/or stationary source emissions of GHGs. The substantial evidence for this GHG emissions threshold is based on the expert opinion of various California air districts, which have applied the 10,000 MT CO2e per year threshold in numerous CEQA documents where those air districts are the lead agency." (DEIR, p. 4.3-43.)*

BEC 5

Based on the California Supreme Court findings for *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) (62 Cal.4th 204), a project's GHG emissions should be evaluated based on its effect on California's efforts to meet its long-term climate goals. As the Supreme Court held in that case, a project that would be consistent with meeting those goals can be found to have a less-than-significant impact on climate change under CEQA. If a project would contribute its "fair share" of what will be required to achieve those long-term climate goals, then a reviewing agency can find that the impact will not be significant because the project will help to solve the problem of global climate change (62 Cal.4th 220–223).

In accordance with Executive Order B-55-18, California is committed to achieving carbon neutrality by 2045. The 10,000 MTCO2e threshold used in the FEIR has no correlation to the State's carbon neutrality goal for 2045. As Baseline previously commented, the other air districts originally adopted the 10,000 MTCO2e threshold to achieve the 2020 statewide GHG goal under California Assembly Bill 32. The Bay Area Air Quality Management District (BAAQMD), which is referenced above, is in the process of considering an updated GHG threshold for industrial projects to address California's long-term GHG goals such as carbon neutrality by 2045.[1] In effect, the FEIR has blindly applied a GHG threshold of 10,000 MTCO2e

[1] Bay Area Air Quality Management District (BAAQMD), Air District Update to CEQA Thresholds of Significance for Greenhouse Gases; Public Workshop. December 9, 2021.

per year adopted by other air districts without understanding the justifications each air district had for originally adopting the threshold. The FEIR should be able to reference specific supporting documentation provided by these air districts to justify how the threshold would help the project achieve California's long-term GHG goals. As a result, the FEIR analysis of project impacts from GHG emissions remains inadequate.

BEC 5 cont.

Conclusions

Based on our review of the FEIR, many of the previous comments on the DEIR have not been resolved and the overall analysis related to air quality and GHG emissions is inadequate.

Sincerely,

Patrick Sutton,
Principal Environmental Engineer

Patrick Sutton, P.E.

Principal Environmental Engineer

Areas of Expertise

Air Quality, GHGs, Noise, Hazardous Materials, Geology, and Hydrology

Education

M.S., Civil and Environmental Engineering, University of California – Davis

B.S., Environmental Science, Dickinson College

Registration

Professional Engineer No. 13609 (RI)

Years of Experience

19 Years

Patrick Sutton is an environmental engineer who specializes in the assessment of hazardous materials released into the environment. Mr. Sutton prepares technical reports in support of environmental review, such as Phase I/II Environmental Site Investigations, Air Quality Reports, Greenhouse Gas (GHG) Reduction Plans, and Health Risk Assessments. He has prepared numerous CEQA/NEPA evaluations for air quality, GHGs, geology, hazardous materials, and water quality related to residential, commercial, and industrial projects, as well as large infrastructure developments. His proficiency in a wide range of modeling software (AERMOD, CalEEMod, RCEM, CT-EMFAC) as well as relational databases, GIS, and graphics design allows him to thoroughly and efficiently assess and mitigate environmental concerns.

For mixed-use development projects, Mr. Sutton has prepared health risk assessments for sensitive receptors exposed to toxic air contaminants based on air dispersion modeling. He has also prepared GHG Reduction Plans to demonstrate how projects can comply with State and/or local GHG reduction goals. For large highway infrastructure improvement projects, Mr. Sutton has prepared air quality and hazardous materials technical reports in accordance with Caltrans requirements. Air quality assessments include the evaluation of criteria air pollutants, mobile source air toxics, and GHG emissions to support environmental review of the project under CEQA/NEPA and to determine conformity with the State Implementation Plan. Hazardous materials investigations include sampling and statistically analysis of aerially-deposited lead adjacent to highway corridors.

Project Experience

Oakland Downtown Specific Plan EIR. Prepared a program- and project-level Air Quality and GHG Emissions analysis. Developed a mitigation measure with performance standards to ensure GHG emissions from future projects comply with the Citywide 2030 GHG reduction target.

I-680 Express Lanes from SR 84 to Alcosta Boulevard Project. Prepared Initial Site Assessment and Preliminary Site Investigation to evaluate contaminants of potential concern in soil and groundwater. Prepared Air Quality Report to determine the project's conformity to federal air quality regulations and to support environmental review of the project under CEQA and NEPA.

Altamont Corridor Expressway (ACE/Forward) Project EIR/EIS. Prepared a program- and project-level Hazardous Materials analysis for over 120 miles of railroad corridor from San Jose to Merced. Hazardous materials concerns, such as release sites, petroleum pipelines, agricultural pesticides, and nearby school sites were evaluated in GIS.

Stonegate Residential Subdivision EIR. Prepared a project-level Hydrology and Water Quality analysis for a residential development located within the 100-year floodplain. The proposed project included modifications to existing levees and flood channels.

BART Silicon Valley Extension Project. Prepared Initial Site Assessment and Hazardous Materials EIS/EIR section for extending 6 miles of proposed BART service through the Cities of San Jose and Santa Clara.

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TECHNICAL MEMORANDUM

TO:	**Ben Mossman**	**4091**
FROM:	**Grady O'Brien** **Houmao Liu**	
DATE:	**18 April 2023**	
SUBJECT:	**Additional Responses to Comments GRP 8-127 through -133**	

COMMENTS FROM JUNE A. OBERDORFER, 16 FEBRUARY 2023

Comment 1:

Current groundwater flow to drains along Wolf Creek at tens to a few hundred of gallons per minute (gpm), according to EMKO Environmental in Draft EIR. Itasca does not state discharge rate to drains in calibrated present-day model. This discharge causes a maximum of around 10 ft of drawdown in the shallow aquifer relative to pre-mining levels. Increasing the dewatering discharge to over 900 gpm would, according to Itasca, only cause an additional 10 ft of drawdown. The much greater discharge would be expected to produce much greater drawdown, not a similar magnitude of drawdown as the current much lower discharge to the drains.

Response:

The drain flow to Wolf Creek is likely a combination of bedrock groundwater flow through the mine workings and surface runoff through localized preferential pathways of older mine workings or fractures of shallow rock units. It was not possible to quantify the flow from each of these components. The shallow aquifer is not connected to the drains, and its drawdown would not be influenced by the drain flow. Higher groundwater levels in the shallow aquifer compared to the mine shafts and the lack of seasonal variation in mine shaft water levels support the lack of hydraulic connections between the shafts and the shallow aquifer.

It should be noted that the 10-foot (ft) shallow aquifer drawdown in 2019 relative to the pre-mining levels is the result of water filling the existing mine void. Thus, the historical mining drawdown in the shallow groundwater system has been quantified by the difference between the current (2019) water levels and the pre-mining water levels. Future mining, dewatering, and drawdown will be deeper than the historical mining zone, and these new areas will have minor drawdown effects on the shallow groundwater system. The current (2019) shallow aquifer drawdown (Figure 5-3) and the future mining drawdown (Figure 5-4) cumulatively have greater

drawdown than the predicted drawdown due to historical mining (FEIR Vol. VIII, Appendix L, Sheet 16, titled "Well Locations and Itasca Drawdown, Monitoring Wells & Projected Drawdown after Initial Dewatering"). Drawdown predictions are consistent and reasonable for all mining periods.

These topics were discussed as follows:

> Itasca (2020), page 7: "Analyses of water levels in the domestic wells suggested that shallower wells had higher water levels than the deeper wells (Todd 2007). In addition, the measured water levels in domestic wells near the historical Idaho-Brunswick Mine are more than 90 ft higher than the water level in the mine void (Sierra-Pacific 1995; Todd 2007; Rise 2019b, pers. comm.)."
>
> Itasca (2020), page 8: "In contrast to the seasonal water-level variations of 10 to 50 ft in the domestic wells, water levels measured in the New Brunswick shaft over the past 17 years have only fluctuated by about 7 ft (with the exception of one outlier), as shown in Figure 3-7 of the EMKO (2020) report. In addition, where more than one measurement per year has been made in the shaft, there is no clear wet and dry season variability, unlike in the domestic wells. These observations indicate that there are not specific connections (e.g., via fractures) between the domestic wells and the underground mine workings."
>
> DEIS, page 2-74: "The current flow rate of mine water from the drains was not used for the calibration of the groundwater model because the preferential pipe flow in the mine workings is not simulated in the model and the purpose of the model is to calibrate to "current" groundwater levels, based on measurements taken from 1994 through 2007, and the current water level in the mine which is controlled by the drain outlet elevations. Additionally, there could be additional preferential recharge from surface runoff through mine workings reporting to the drains. This extra recharge, not related to groundwater flow, is not quantifiable and could result in inaccurate calibration of the groundwater model."

Comment 2:

Dewatering of the mine will increase discharge from the mine works by about one third above the discharge rates at the end of historic mining. Drawdowns in the shallow aquifer would be expected to be greater than drawdowns at the end of the historic mining. Itasca does not provide a figure and/or hydrograph presenting the drawdown in the shallow aquifer from the calibrated simulation of historic mining with discharge at 700 gpm so the drawdown in the shallow aquifer in 1956 is unknown. While the future drawdown in the shallow aquifer would be expected to be greater than the historic drawdown, it is not possible to know the magnitude of that drawdown from the report.

Response:

Predicted shallow aquifer drawdown at the end of historical mining in 1956 is provided in FEIR Vol. VIII, Appendix L, Sheet 16, titled "Well Locations and Itasca Drawdown, Monitoring Wells & Projected Drawdown after Initial Dewatering."

Figure 4-7 in Itasca (2020) showed the good model calibration of measured water levels at Union Hill. The Itasca model calibration and predictions of past and present conditions provide confidence in the model's predictions of future mining conditions. This is addressed in detail in Response 3 below.

Comment 3:

The one place we know shallow drawdown at the end of the historic mining period at shallow depths is in the closed Union Hill Mine. The calibrated historic pumping created just slightly over the observed drawdown in 1956 of 20 feet (Figure 4-7 top). This drawdown of 20 feet occurs in the shallow aquifer as the current depth to water at the Union Hill Mine is a few feet. The drawdown under current flow-to-drain conditions is ~0 feet. The predicted future drawdown with increased pumping would be expected to be greater than 20 feet. The drawdown given in the figure of predicted drawdown towards the end of future mining, as shown in Itasca Fig. 5-4, is 3 to 5 feet, much less than the greater-than-20-feet expected.

Response:

The measured Union Hill Mine shaft drawdown in 1956 was reported as 20 ft (Clark 2005). This represents drawdown in the deep bedrock system, not the shallow aquifer. The bedrock system and the water level in the Union Hill Mine shaft has recovered to near pre-mining conditions since 1956.

The 10-ft simulated drawdown contour at the end of future mining is provided in Itasca (2020), Figure 5-5. This indicates that there was more than 10 ft of predicted drawdown near the Union Hill Mine shaft. To clarify, a more detailed view of this area from Figure 5-5 was prepared for this memorandum and is shown in Figure 1 (attached).

Comment 4:

In order to calibrate the historic much higher water levels in the computer model at the Union Hill Mine, Itasca had to insert a low permeability layer (Itasca, p. 22), isolating the Union Hill Mine hydrogeologically from the adjacent mining areas. This hydrogeologic isolation means that the drawdown on the other/active mining side of the hydrogeologic barrier would be considerably greater than the historic value of 20 feet measured in the Union Hill Mine. Since Itasca does not present either water levels or drawdown in 1956, at the end of historic mine dewatering, it is not possible to know what that greater simulated drawdown was.

Response:

The relatively smaller hydraulic conductivity for the slate unit near the Morehouse Fault and the Union Hill Mine was justified and reasonable. This unit was required to simulate the large drawdown difference (20 ft to 1,500 ft) between the Union Hill Mine and the Brunswick Mine. Predicted water levels in shallow aquifer wells shown in Itasca (2020), Figure 4-8, are within the measured ranges. These wells are located across the mine area, as shown in Figure 2-6, and are on both sides of the slate unit. This illustrates that the predicted drawdown on the active mining side of the barrier is reasonable.

Predicted shallow aquifer drawdown at the end of historical mining in 1956 is provided in FEIR Vol. VIII, Appendix L, Sheet 16, titled "Well Locations and Itasca Drawdown, Monitoring Wells & Projected Drawdown after Initial Dewatering."

Comment 5:

The most likely cause of this disconnect between probable future drawdown (based on the observations above) and the predicted future drawdown presented in Figure 5-4, is the selection of the 1956 water levels as the initial condition (starting point) for the future predictive simulations. The 1956 water levels represent "when the mine workings were pumped dry" (Itasca, p.23); instead of starting with the 1956 water levels, they should have used the 2019 water levels they simulated for "present conditions" as the starting point. If one models future impact of 900 gpm pumping beginning with a condition in equilibrium with 700 gpm pumping (as in 1956), one will get much less additional drawdown than if one starts with no dewatering pumping and only moderate discharges to drains. The additional 10 feet of drawdown shown in Figure 5-4 most likely represents the incremental drawdown from increasing the pumping rate from 700 gpm to 900 gpm.

Response:

The predictive model simulated the recovery period from 1956 to 2019 and the 25-year future mining period. The simulated groundwater levels from the end of the mining period (1956) were used as the initial groundwater levels for the recovery of the groundwater system from 1957 to 2019 (Itasca 2020, page 21). The simulated 2019 groundwater system was nearly fully recovered from the historical dewatering (700 gallons per minute [gpm]) that ended in 1956, and there was a good match to the measured water levels. As suggested, the simulated 2019 water levels, when there was no dewatering, were the initial conditions for the future mining period.

The model simulated the mine plan in monthly increments. Future dewatering rates represent simulated groundwater inflow to the mine workings as the mine plan was implemented (Figure 5-2). Total inflow to the entire mine will reach a maximum of approximately 1,100 gpm with a stable predicted inflow rate of approximately 900 gpm. Predicted impacts are based on these dewatering rates rather than the incremental increase from historical dewatering. The

drawdown shown in Figure 5-4 and Figure 5-5, which highlights areas with at least 10 ft of drawdown, is the total predicted drawdown as measured from the simulated 2019 water levels.

FOLLOW-UP COMMENTS TO GROUP 8 COMMENT RESPONSES

The commentor was not satisfied with the previous responses to initial Group 8 comments of 27 March 2022 and had the following follow-up comments.

GRP 8-127:

The response does not clarify why the modeling reports states that the predictive modeling begins with the 1956 water levels (#5 above) nor explain the underestimation of Drawdown in the vicinity of the Union Hill Mine (#3 above) and presumably much greater underestimation elsewhere in the future scenarios. "Initial conditions" has a very specific meaning in groundwater modeling: the starting water levels from which changes are measured. The model appears to have used the wrong initial conditions.

Response:

Responses 3 and 5 above address this comment.

GRP 8-128:

Response 5: We don't know what the simulated water levels in the shallow aquifer at the end of historic mining (1956) are since the report does not present those results even though they are crucially important. Since the drawdown in the shallow aquifer would be expected to be somewhat greater in 2025 than in 1956, because the extraction rate is greater, the report needs to be forthcoming about those important calibrated historic water levels in 1956. We know that the shallow aquifer recovered to a significant degree after the cessation of mining as seen in the essentially zero drawdown at present in the vicinity of the Union Hill Mine when it was simulated to be over 20 feet in 1956. The predictive modeling should have started with the current (2019) water levels to predict future drawdown.

Response:

Responses 2 and 3 above address this comment.

GRP 8-130:

In response to my request for a figure showing a drawdown map for 1956, at the end of historic mine dewatering, the response directs to inserted Sheet 16 (FEIR Vol. VIII, Appendix L). This sheet is labeled as Monitoring Wells and Projected Drawdown after Initial Dewatering. This figure cannot represent the water levels from 1956 since the drawdown in the shallow aquifer in the

vicinity of the Union Hill Mine is a few feet, not the greater-than-20-feet indicated for 1956 (Figure 4-7 top).

Response:

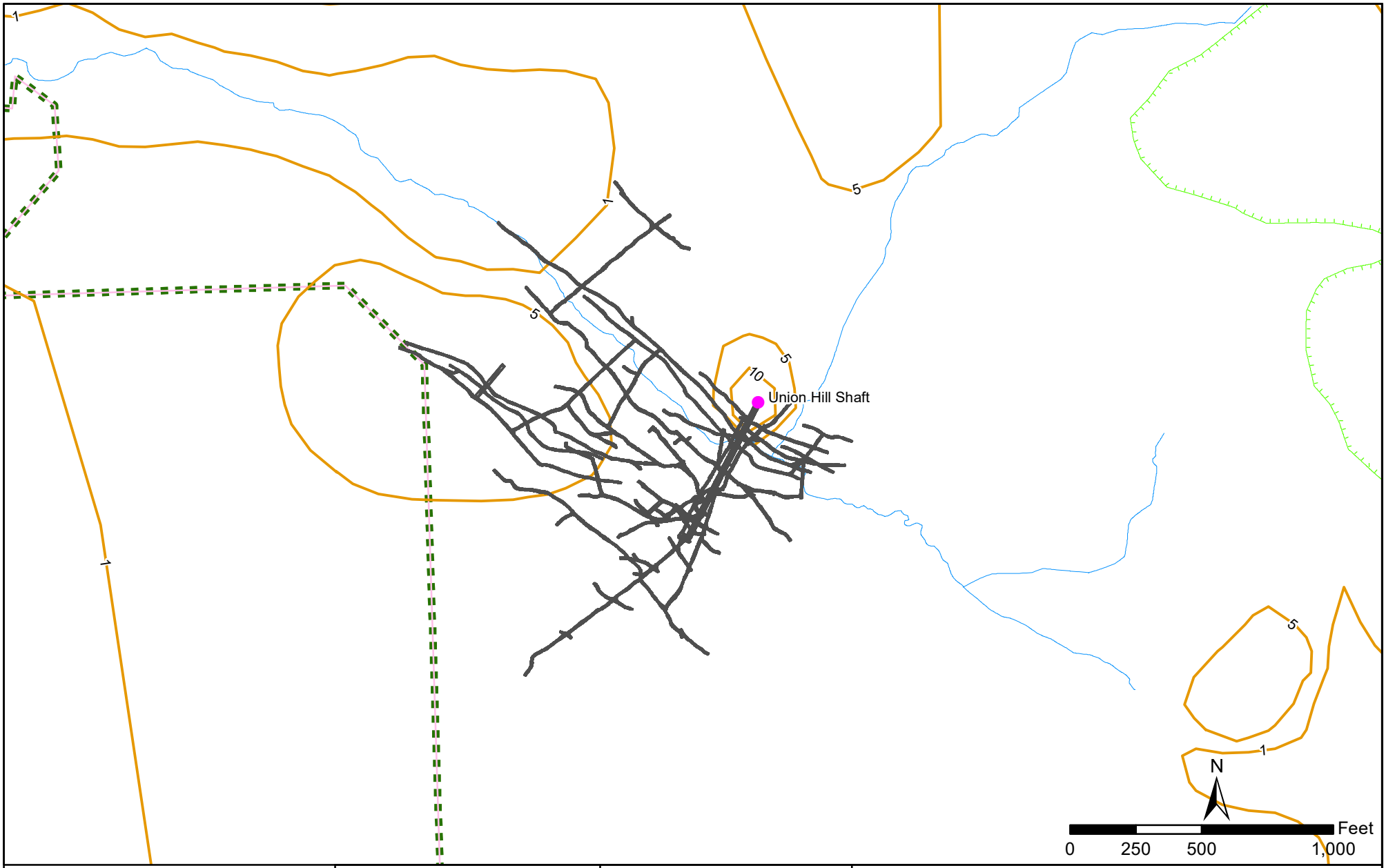
Regarding Sheet 16, "Well Locations and Itasca Drawdown, Monitoring Wells & Projected Drawdown after Initial Dewatering" (FEIR Vol. VIII, Appendix L), this sheet illustrates predicted drawdown in the shallow aquifer in 1956, which can exceed 20 ft in areas. The 20-ft drawdown contour in the Union Hill Mine was shown south of well W1 on Sheet 16.

REFERENCES

Itasca. 2020. Predictions of groundwater inflows to the underground mine workings at the Idaho-Maryland Mine. Report prepared for Rise Grass Valley Inc. by Itasca Denver, Inc., November. (Provided as Appendix K.3 in DEIR.)

Clark, J. 2005. Gold in quartz: The legendary Idaho-Maryland Mine. Grass Valley, CA: Comstock Bonanza Press.

Attachments: Figure 1 – Simulated Shallow Aquifer Drawdown near Union Hill Mine at the End of Future Mining Relative to 2019 Water Level



Legend

- Shaft Location
- Union Hill Mine Plan
- Drawdown (ft) - End of Future Mining
- NID Canals
- Creeks
- Mineral Rights Boundary

PROJECT NO.	4091
BY	GO
CHECKED	HL
DRAWN	NP
DRAWING NAME	EOM_2023
DRAWING DATE	Apr. 13, 2023
REVISION DATE	Apr. 14, 2023

ITASCA™ Denver, Inc.

Simulated Shallow Aquifer Drawdown near Union Hill Mine at the End of Future Mining Relative to 2019 Water Level

CLIENT: Rise Grass Valley Inc.

FIGURE NO. 1

Attachment 6

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