



STATE OF
COLORADO

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1 message

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To: "amy.eschberger@state.co.us" <amy.eschberger@state.co.us>

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CMC PARTIAL RESPONSE LETTER MAY 16, 2019

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Amy Eschberger: Attached to this email are CMC's Responses to some more of the Adequacy Review questions that you included in your letter dated January 14, 2019. I will be sending additional responses in the final draft.

Thank you,

Mark A. Steen for the Colorado Milling Company, LLC.

3) The operator's response to item no. 9 states that water will be drawn from the Times and Wynona Mine workings from drill holes and pumps that will be connected to these mine workings. It was the Division's understanding that water would only be pumped out for mill use from the Wynona Mine shaft. Please describe any other locations proposed for obtaining water from these workings. Additionally, please be sure these locations are clearly identified on the E-5 - Mill Site map.

CMC Response: CMC will pump water from both the Times Mine and the Wynona Mine workings from existing drill holes and pumps that will be installed in these mines. Both of these drill holes are clearly identified on Map E-5-Millsite Map.

4) The operator's response to item no. 10 states the operation will access the water pipeline easement using four historic mine roads. Please describe these existing roads. Will the roads need to be improved and/or widened for use by the operation? Will any vegetation need to be removed from these areas? This information is needed for the Division to determine whether the access roads are considered affected land pursuant to Rule 1.1(4). Please show these historic mine roads on the E-1 through E-5 maps.

CMC Response: The Gold Hill Mill Waterline will be accessed using four historic mine roads. The main historic mine access road to the Gold Hill Mill Pipeline Easement is located off of Licksillet Road on the Paris Millsite, MS No. 5149B. This lowermost access road connects with the historic mine road from Left Hand Canyon to Gold Hill. It provides access

to the Pipeline Easement in both directions towards Left Hand Creek to the North, and as far as the Cold Spring No. 2 Lode Claim to the South. The second historic mine access road to the Pipeline Easement extends from Lickskillet Road with two branches to the Red Cloud and Cold Spring Mines, which are located in this area. The third historic access road to the Pipeline Easement also extends from Lickskillet Road with two branches to the Alamakee Mine. The fourth, uppermost historic access mine road extends from Sunshine Canyon Road to the portal of the Times Mine. All of these historic mine access roads are shown on the Surface Ownership & Permit Area Map E-2, the Mine Reclamation Plan Map E-3, the Surface Ownership & Permit Area Map E-4, and the Access-Water Line and Easements Map E-6. None of these historic mine access roads will need to be improved or widened for use by the Gold Hill Mill operation. The only vegetation that will need to be removed consists of deadfall on the roads and live tree branches that will need to be cut back to provide access to the Gold Hill Mill Waterline. These historic mine access roads are not considered affected lands pursuant to Rule 1.1(4).

7) The operator's response to item no. 13 indicates the Times Mine bulkhead is already impounding some water. Please provide demonstration the bulkhead is designed to impound water for the full height of the bulkhead, with completely flooded workings (Times Mine cross-cut filled with water). This demonstration must include certification by a professional engineer. Alternatively, the operator can commit to maintaining water levels in the mine workings below the collar elevation of the 50 foot winze (said to be 8,360 feet). In either case, please describe the monitoring system that will be utilized to monitor bulkhead pressure.

CMC Response: Deer & Ault Consultants, Inc., of Longmont, Colorado, were retained by CMC to provide an evaluation of the Times Mine Bulkhead, and their Technical Memorandum addresses all of the outstanding issues related to the Times Mine Bulkhead. Their Evaluation of the Times Mine Bulkhead by Christoph Goss, PhD, P.E. dated May 15, 2019 has been attached to this Response Letter to the DRMS as part of this Amendment to the Gold Hill Mill Limited Impact Permit.

8) The operator's response to item no. 12 states that water levels will be monitored by periodic manual measurements in the Wynona Mine shaft well casing. Please state the frequency that water levels will be monitored during operations. Additionally, please commit to maintaining the monitoring records on site to be made available for Division review during inspection.

CMC Response: The water levels in the Wynona Mine will be monitored on a weekly basis when the Gold Hill Mill begins processing ore. This will help CMC determine the frequency and duration of pumping operations from Left Hand Creek to replenish the water being consumed in the Gold Hill Mill. Once the milling operation determines the rate of water

consumption from mineral processing, the frequency of monitoring the water levels in the Wynona Mine may decrease. CMC will maintain the monitoring records on site for review during inspections by the DRMS.

9) The operator has indicated the Wynona Mine workings are currently flooded to some extent. Therefore, please commit to measuring water levels in these workings on a quarterly basis for five quarters, and submitting this data to the Division a minimum of 60 days prior to commencing with operations. This information will help demonstrate whether the proposed water storage is a closed system, thus minimizing disturbances to the prevailing hydrologic balance.

CMC Response: The use of the Wynona Mine workings for underground water storage was accepted when the Gold Hill Mill was approved by the Mined Land Reclamation Board on September 25, 1985. The Wynona Mine workings are currently storing water as originally permitted under the 1985 Cash Mine Permit Amendment. The Wynona Mine workings have been filled with water since 1987, when water was first pumped behind the Times Mine Bulkhead, and there has never been any observed, or reported, disturbance to the prevailing hydrologic balance in this area. No downgradient water rights or wells located in the town of Gold Hill have been affected by the underground storage of water in these mine workings. There has not been a single claim made by anyone during the last three decades asserting that their water rights have been injured by the water that was stored in the Times and Wynona Mines. The most recent water level measurements in the Wynona Mine shaft drill hole found the water to be approximately ninety (90) feet below the ground surface; and the water level in the Times Mine drill hole encountered water approximately eighty-nine (89) feet below the ground surface. This demonstrates that both of these mines are sharing the same underground water pool through the connection of the Times Mine winze with the Wynona Mine. Accordingly, any requirement to measure the water level in the Wynona Mine for fifteen months prior to starting milling operations in the Gold Hill Mill would be redundant and unnecessary.

A Hydrologic Study of this area was conducted by Adrian Brown Consultants, Inc. in 2006 for the last permitted operator of the Gold Hill Mill. This report provided useful information about the groundwater flow system of the area around the Gold Hill Mill. It was filed with the DRMS on December 8, 2006. Adrian Brown, P.E. reached several conclusions from his study of the hydrogeology of this area that confirms the same observations that were included in CMC's December 8, 2018 Response Letter to the DRMS's Adequacy Review No. 1. The groundwater level was measured in the four monitoring wells located below the Millsite. Groundwater was found to be approximately thirty (30) feet to sixty (60) feet below ground surface in all four wells. This indicated that the rockmass comprising Horsfal Flat is saturated close to the ground surface, which can only occur if the permeability of the rockmass is sufficiently low to be unable to remove the infiltration from precipitation in this area. The precipitation at Gold Hill is 19.5 inches per year, and the infiltration to groundwater at this

elevation would be expected to be in the order of 10% of this total, or 2 inches per year. This is equivalent to 0.1 gallons per minute per acre of area. Groundwater in the vicinity of the Millsite exists in a low permeability/low yield system typical of the granitic rocks of the Front Range. Yield of wells completed in the bedrock in this area is small; typically, a few gallons per minute at most. According to this report, the groundwater table is a muted reflection of the ground surface, and it intersects the ground surface in the deeper gulches and creeks. The Times Mine and the Wynona Mines are near the highest part of Horsfal Flat, where the groundwater water table is much lower than the steeper areas found in Lickskillet and Cash Gulches.

The general quality of the groundwater in the granitic country rock is good, as reflected in the water quality samples taken from the wells that are downgradient of the Millsite; while the ambient groundwater quality in the mineralized veins and fissures in the mines is of substantially lower quality. The groundwater found in the mines generally contains higher concentrations of sulfate and some metals, notably iron, manganese, and zinc that are elevated above that found in the groundwater in the granitic country rocks. The absence of any elevated sulfate or the presence of higher concentrations of these metals in any of the analyses of the water samples taken from these monitoring wells indicates that the water stored in these mines for more than thirty years is not flowing out of the mine workings. This confirms that the water stored in the Times and Wynona Mines is not migrating from these mines into any of these downgradient monitoring wells.

As part of the Comprehensive Water Monitoring Plan for the Cash Mine, a monitoring well located downgradient to the Gold Hill Mill was selected to monitor the quality of water in this area. This monitoring well is one-hundred and eighty-eight (188) feet deep and it was drilled in solid granitic country rock. The depth to groundwater ranges between fifteen (15) feet and thirty-five (35) feet. CMC has been sampling the groundwater in this well on a quarterly basis since it became the permitted operator of the Gold Hill Mill and the Cash Mine. Nothing has ever been detected in this downgradient monitoring well that would indicate that the water contained in the Wynona Mine workings was affecting the water quality in this area. This confirms the impermeable nature of the granitic country rocks surrounding the Times and Wynona Mines.

11) The operator's response to item no. 15 states the discrepancy between the estimated annual water usage for the mill and the amount of water the operator is authorized (per Decree) to withdraw from Left Hand Creek during irrigation season was a mathematical error. However, no further explanation was provided. Please describe the error. Will the mill be limited to operating less than 50 tons of ore per day and/or less than 260 days per year due to the water requirements (4 tons water/1 ton ore)?

CMC Response: The underground water storage capacity in the Times Mine is approximately 187,000 gallons, and the water storage capacity in the Wynona Mine is approximately 660,000 gallons. The actual underground storage capacity of water for processing ore in the Gold Hill Mill has not yet been determined, because the last permitted operators of the milling facility did not utilize the Times and Wynona Mines for water storage. CMC will not know the actual underground water storage capacity until it resumes milling operations. The meters that will be installed at the Pump Station and the Wynona Mine will help determine how much water is being consumed during ore processing operations, and the actual underground water storage capacity of the Times and Wynona Mines. The recycling of some of the process water has always been a part of the plan of operations for the Gold Hill Mill, and that is expected to be employed at some point during future milling operations.

Additionally, it is CMC's intention to increase the tailings storage capacity at the processing facility on property retained for this purpose. At such time, the current tailings storage pond will be converted for use as a lined water storage feature. CMC anticipates that the Gold Hill Mill will then process at a level of 50 tons of ore per day for 260 days per year.

Exhibit E – Map (Rule 6.3.5):

14) The operator's response to item no. 25 included revised Exhibit E maps. Map E-3 – Revised Mine Reclamation Plan indicates the proposed pump station, fuel tank, and 2" water line will be removed for reclamation. However, the map does not clearly describe the components of the reclamation plan for the Times Mine adit, or the mill site, including the Wynona Mine shaft. Please include these details on the reclamation plan map. Because Map E-3 is very busy due to the surface ownership information being included, it would be helpful to also include the reclamation information for the Times Mine and the mill site on a map showing a closer view of those areas (i.e., Map E-5). Please be sure any mining plan and reclamation plan maps are labeled accordingly.

CMC Response: As described above, the Wynona Mine shaft and the Times Mine drill hole will not be reclaimed or sealed in order to use these two features for emergency water sources for forest fire protection. Map E-5 has been amended to include the reclamation information for the Times Mine Portal, and to clearly show that the Wynona Mine drill hole is located

inside a Concrete Well Enclosure. It also shows the location of the Times Mine Well Head, and that the Mill Pond will be reclaimed to a natural ground surface following reclamation. This map has been renamed E-5 Millsite – Colorado Milling Co. - Gold Hill Mill Reclamation. The scale on this map has been increased to 1-inch equals 150-feet to provide a closer view of these features.

Exhibit L – Permanent Man-Made Structures (Rule 6.3.12):

15) The operator's response to item no. 30 included proof of hand-delivery of structure agreements to Xcel Energy (for the power poles and lines) and to Boulder County (for Lefthand Canyon Dr., Lickskillet Rd., and Sunshine Canyon Dr.). Please submit copies of the executed structure agreements, or per Rule 6.3.12(b), provide an appropriate engineering evaluation that demonstrates these structures will not be damaged by activities occurring at the mining operation.

CMC Response: CMC is awaiting the signed Structure Agreements that were hand delivered to Xcel Energy and to Boulder County. CMC has been in communication with these two entities and believes that these Structure Agreements will be accepted and executed by the respective parties. These will be forwarded to the DRMS as soon as they are received from these two adjacent property owners.

For the structures owned by Gene L. Sapp and Dene F. Sapp, the operator states they are covered by the Easement for Water Line with Access (submitted with the response) which grants the operator legal right of entry to their property, the Eureka Millsite, MS 601B to access the water line easement. The Division could not find any language in the agreement

regarding structures owned by the landowners. Therefore, the easement agreement does not satisfy the requirements of Rule 6.3.12(a), as it does not include language that the operator will provide compensation for any damage to structures. Please provide demonstration that structure agreements have been attempted for these structures (proof of hand-delivery or Certified Mailing). If a structure agreement cannot be reached for these structures, per Rule 6.3.12(b), please provide an appropriate engineering evaluation that demonstrates these structures will not be damaged by activities occurring at the mining operation.

CMC Response: CMC mailed a Structure Agreement to Gene L. Sapp and Dene F. Sapp on January 25, 2019. This Structure Agreement was sent via Certified Mail Numbered 7018 1130 0000 4221 7577. The Structure Agreement was not signed or returned to CMC. Attached to this Response Letter is a letter dated May 10, 2019 from Cynthia T. Kennedy, Attorney-at-Law. She has reviewed the Easement for Water Line With Access dated September 24, 2015 between the Sapp Brothers and CMC with regard to addressing the question of the extent of the indemnity afforded the owners of the Eureka Millsite , MS No. 601B, and agrees that CMC is required to indemnify and restore any structures and raw land damaged by the construction, operation, maintenance, repair, or replacement of the Gold Hill Mill Waterline.

For the structures owned by James K. McCumber and Amy Fortunato, the operator provides discussion as to why the proposed infrastructure at the Left Hand Creek pump station should pose no potential for adverse damage to these structures. The Division understands the proposed activities in this area are minimal with no excavations. However, the operator's information does not fully demonstrate the stability of these structures will not be adversely affected by the operation. Therefore, please provide demonstration that structure agreements

have been attempted for these structures (proof of hand-delivery or Certified Mailing). If a structure agreement cannot be reached for these structures, per Rule 6.3.12(b), please provide an appropriate engineering evaluation that demonstrates these structures will not be damaged by activities occurring at the mining operation.

CMC Response: CMC mailed a Structure Agreement to James K. McCumber and Amy Fortunato on January 25, 2019. This Structure Agreement was sent via Certified Mail Numbered 7018 1130 0000 4221 7591. The Structure Agreement was not signed or returned to CMC. Therefore, CMC retained James M. Beck, PE to provide an engineering evaluation that demonstrates that the three wooden frame structures located on the Mammoth Millsite, MS No. 17576 within two-hundred (200) feet of the Gold Hill Mill Waterline shall not be damaged by any activities occurring on the Gold Gulch No.3 unpatented lode mining claim. Irrespective of this engineering evaluation, CMC commits to ensuring appropriate compensation for any damage determined in a court of law to be directly attributable to CMC's activities or operations at this site. A copy of the Memorandum prepared by James M. Beck; P.E. dated May 15, 2019 Evaluating the Risk Potential for the Mammoth Millsite is attached to this Response Letter.