COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources

April 1, 2022

Jim Harrington
Colorado Legacy Land, LLC
12150 E. Briarwood Ave., Suite 135
Centennial, CO 80112

RE: Schwartzwalder Mine, Permit No. M-1977-300, 112d-2 Designated Mining Reclamation Permit Amendment Application (AM-6), Adequacy Review No. 2

Mr. Harrington:

The Division of Reclamation, Mining and Safety (Division) has completed its 2nd adequacy review of your Amendment Application (AM-6) submitted for the Schwartzwalder Mine. All comment and review periods for the application began on July, 29, 2021, when the application was called complete for filing purposes. The decision date for the application is currently set for May 25, 2022.

The Division has identified adequacy items in the application requiring clarification or additional information. These items are identified below under their respective exhibit heading, and are numbered sequentially.

Exhibit E – Reclamation Plan (Rule 6.4.5):

1) The operator has provided Figure E-2 to address the Division's adequacy item #3 (from the preliminary adequacy review letter). However, not all components requested were added to the map. Please revise Figure E-2 to include "any significant fracture/fault systems and other potential groundwater migration pathways that intersect the mine workings, and the point at which any such pathways intersect the creek system between the mine site and Ralston Reservoir".

2) In its response to the Division's adequacy item #4, the operator stated the diversion pipeline and two bollards which hold the pipeline in place will be removed for reclamation. However, the operator did not describe how the upgradient cutoff wall and riprap/grouted boulder areas along the creek will be reclaimed. Is the operator proposing to leave these structures in place for final reclamation? If so, please describe how leaving these structures would be in compliance with county requirements and with the applicable regulatory agencies (e.g., CDPHE, USACE, USFWS). Additionally, please explain how leaving these structures would support the proposed plan to remove the bypass pipeline and re-establish creek flows across the mine site for final reclamation.

3) The operator is proposing to remove the bypass pipeline and re-establish creek flows across the mine site once the alluvial valley excavation project has been completed. Does this proposal include plans to keep the bypass system readily accessible, at least for a particular length of time after flows have been

re-established, so the system could be reinstalled in the event that surface water monitoring at SW-BPL shows impacts from the mine site?

4) Please provide a detailed grading plan for the valley, showing how the valley floor will be reconfigured to establish positive drainage to the creek. (Please keep in mind, if the grading plan changes significantly from what is approved in this application, it can be updated through the Technical Revision process.) If on-site material will be used to fill/grade the valley for reclamation, please describe exactly where these materials will be derived from on site, and how the operator will confirm the materials are "clean" for use in reclamation.

5) The operator is proposing to use on site materials for growth medium in reclamation, rather than importing this material. Please specify exactly where the growth medium will be derived from on site and how the operator will confirm this material is suitable for use in reclamation. Will any soil tests be conducted?

6) Please include the proposed revegetation plan, including the specific seed/plant mixtures to be used for each area. Each seed mixture must include the plant species, the planting rate for each species (in pounds of pure live seed per acre or number of trees/shrubs per acre), and the application method.

7) Please include a detailed plan for abandoning the 13 monitoring wells on site, which includes the diameter and depth of each well, a description of the proposed plugging materials to be used, and the type and quantity of equipment to be used. This information is needed in order for the Division to calculate the reclamation bond.

8) Please provide a detailed plan for removing the master sump for reclamation, including the anticipated disposal location for the materials demolished/removed.

9) Please describe the existing mine closures (and/or provide photographs of each closure) installed in the following mine openings: Minnesota Adit, Sunshine Decline, Steve Adit, CV/Charlie Adit, and Pierce Adit.

10) In comparing the recent mine pool chemistry (2018-present) to the mine pool chemistry during the period when the mine workings were flooded (2000-2007), the operator states that bulk TDS of the mine water has not changed, indicating the mine is chemically stable. Please provide a graph showing available TDS data compared with Uranium concentration data for these two periods. Additionally, please add TDS data on either the revised Figure E-4 or E-7.

11) In its response to the Division's adequacy item #18(e), the operator states the location of return of the RO concentrate to the mine pre-2017 included a return injection port that included RO concentrate being added to the "open hole" adjacent to the Minnesota Adit (as shown in Figure E-3a). Figure E-3a depicts an "open hole" located in the Steve Adit (directly behind the concrete bulkhead). It is the Division's understanding the Minnesota Adit is located 3 levels higher than the Steve Adit, but does include a "glory hole", in which the operator placed contaminated alluvial material from the valley excavation project. However, this "glory hole" is not shown on Figure E-3a. Please clarify the location of the "open hole" referred to in this response.

12) On the revised Figure E-7, the operator has included the points in time in which RO reject was injected into the mine, the last of which occurred in 2017. It is the Division's understanding that RO reject is injected into the mine when the water treatment plant is in operation. If this is correct, there should be four additional times between 2018 and 2021 during which, RO reject was injected into the mine. Please provide clarification on this matter and add additional information to this figure, if needed.

13) Please describe how re-establishing creek flows across the mine site, as proposed, is expected to affect the mine pool management/water treatment plant operations, if at all.

14) Please provide some additional discussion regarding the location at which the Schwartz Trend intersects the creek downgradient of the mine site, and whether this geologic feature might act as a migration corridor for mine water downgradient of the site (at mine pool levels at or below the regulatory limit of 150 feet below Steve Level). Please include in this discussion an evaluation of elevation differences between the mine pool and the creek bed at the location where the Schwartz Trend intersects the creek, as well as a discussion of how monitoring well MW-15 was installed to identify any offsite mine water flows through this feature.

15) The Division has the following comments regarding the revised Conceptual Site Model presented in Appendix 1:

    a. In its response to the Division's adequacy item #29(b), particularly to the question of whether sampling for tracers was conducted at any of the groundwater or surface water monitoring locations, the operator states "While tracer sampling was not performed in monitoring wells or surface water near the mine, the hydraulic head in the mine pool is lower than the hydraulic heads associated with these features, so it is highly unlikely that tracer would ever be found at these sampling locations". The Division understands the hydraulic head in the mine pool is lower than the hydraulic head at monitoring locations within the permit area. However, there are four surface water monitoring locations along the creek downstream of the mine site which could potentially be affected by water from the mine workings (if viable migration corridors exist). Given the known hydrogeology of the site, are there any tracer studies that could be performed specifically to investigate potential migration corridors in which water from the mine workings interacts with the creek downstream of the mine site?

Exhibit F – Reclamation Plan Map (Rule 6.4.6):

16) The Division has the following comments on the Figure F-1 Reclamation Plan map provided:

    a. Please explain the "diversion structure" shown to remain along the southern edge of the creek. Is this structure meant to represent the existing bypass pipeline? If so, please remove it from this map as the proposed reclamation plan includes removing this pipeline for reclamation. If this structure represents something else, additional clarification on the map is needed to differentiate it from the NWRP stormwater diversion channel (also identified on the map as "diversion structure").

b. Please identify the areas to receive each of the revegetation plans proposed for reclamation.

c. Please ensure all structures proposed to remain for reclamation (e.g., upgradient cutoff wall, riprap/grouted boulder areas, bridges, culverts, wells, buildings, powerlines, pipelines, roads, graveled or paved parking areas) are shown on this map.

d. Please show the location of the Jeffrey Air Shaft and any structures currently installed at the surface of this shaft which are proposed to remain for reclamation.

17) Please provide a separate reclamation plan map depicting a detailed grading plan for the valley floor. This map should show how the valley floor will be reconfigured to establish positive drainage to the creek. This map should also show any structures proposed to remain in the valley.

Exhibit L – Reclamation Costs (Rule 6.4.12):

18) The Division has the following comments specific to the Water Treatment Plant Operations section:

a. The operator has removed costs for demolishing the water treatment plant since the proposed reclamation plan includes continued operation of this plant. While the Division agrees that removing demolition of the water treatment plant is consistent with the proposed reclamation plan, the Division must continue to hold costs for this task until the operator has provided demonstration that leaving this building and associated structures for final reclamation is consistent with local land use and zoning laws. Therefore, please add these costs back to the bond estimate or provide the required demonstration.

b. The costs for Caustic Soda (Sodium Hydroxide, Liquid 25%) is said to cover a total of 66,720 pounds (for 6 months of operation) at $0.30 per pound, for a total of $19,682.40. Based on the information provided, the Division estimates the total costs for this task are $20,016.00. Please correct this error in the total cost.

19) The Division has the following comments specific to the In-Situ Treatment section:

a. The operator's initial bond estimate included costs for six months of Mine Pool Sampling following an injection, at $950.00 per month (for 5 additional injections over a 10 year period). The Division could not find this task in the revised estimate. Please explain why these costs were removed.

20) The Division has the following comments specific to the Alluvial Valley Excavation section:

a. For the Excavate and Place Soil Onsite task, the operator did not provide the information requested in the Division's adequacy item #35(c). The Division had asked where exactly the fill material will be obtained from on site, whether the estimated 0.585 acre of disturbance requiring fill pertains only to the South Zone, and how the operator chose an average depth of 2 feet (for a total of 6,256 CY) when the excavation depth in the valley is said to vary from 0 to 10 feet. The operator's response states "suitable fill material shall be sourced from the alluvial

valley itself" and "CLL intends to regrade the alluvial valley consistent with the surrounding slopes by pushing adjacent fill materials to fill in excavated pot holes". This response indicates the operator believes there is enough "clean" material available in the valley where the excavation project is occurring to merely regrade disturbed areas to achieve the final reclamation grade. Has the operator performed a survey of the excavation project area to confirm there will be enough "clean" soil available to regrade the valley in a manner that creates positive drainage to the creek? In order for the Division to calculate the bond estimate for regrading (rather than backfilling) the disturbed valley areas for reclamation, additional information is needed. Please provide an approximate total acreage that will require regrading and an average push distance for each of the two main excavation areas (north and south zones).

b. The operator has added a line item in this section for Remove 18-in Bypass Pipeline, in accordance with the proposed reclamation plan. Because the operator provided a lump sum estimate of $8,000.00 for this task, it is not clear if this estimate includes demolition/removal costs for the two bollards or disposal costs for all of these materials. Please provide a breakdown of this estimate or submit a copy of the bid prepared by Kessler Reclamation and Construction. Where is the anticipated disposal location for these materials?

c. The Division has requested additional information in Exhibit F regarding any additional structures associated with the creek (e.g., upgradient cutoff wall, riprap/grouted boulder areas) which will be removed for reclamation. Please be sure to add costs for reclaiming any such structures in this section, as needed.

d. For the Top Soil/Plant Growth Medium task, the operator did not provide the information requested in the Division's adequacy item #35(d). The Division had asked where exactly the growth medium will be obtained from on site, whether any topsoil would need to be imported for reclamation, whether the estimated 0.585 acre of disturbance covers all disturbed areas in the valley which will require topsoil replacement, and how replacing only 3 inches of topsoil will be sufficient to achieve successful revegetation. The operator's response is exactly the same as its response to the Division's question regarding fill material, stating "suitable fill material shall be sourced from the alluvial valley itself" and "CLL intends to regrade the alluvial valley consistent with the surrounding slopes by pushing adjacent fill materials to fill in excavated pot holes". Is this an error? The operator also removed all costs from the bond estimate for topsoil replacement. Please be advised, the reclamation bond must include costs for retopsoiling any areas to be revegetated for reclamation. Therefore, please add retopsoiling costs back to the bond estimate. In order for the Division to calculate the bond estimate for retopsoiling disturbed areas, additional information is needed. First, please clarify whether the operator intends to borrow topsoil from undisturbed areas within the permit area and/or create a growth medium from a combination of on-site materials. Second, please specify exactly where on site the operator intends to obtain the growth medium required for reclamation. Third, please describe how the operator will verify the on-site material is suitable for revegetation. Fourth, please provide an average depth of growth medium placement (that is no less than 6 inches). Lastly, please clarify the total amount of disturbed lands to be retopsoiled is 12.7 acres.

e. The line item for Seed Mix covers seeding 12.7 acres with the grass/wildflower mixture approved in AM-5. Below this task, there are separate line items for planting trees and shrubs in disturbed areas above and below the cutoff wall. Please clarify the grass/wildflower mixture will be planted on all disturbed areas, and the tree and shrub mixtures would be planted in addition to the grass/wildflower mixture in the areas specified.

f. The line items for Trees (planted above the cut-off wall) and Willow Stakes (planted above the cut-off wall) each state that approximately 4 acres will be planted with the species specified for that line item. Please clarify whether the same 4 acres will be planted with each of these mixtures or if 4 acres will receive the tree mixture and a separate 4 acres will receive the willow mixture. In other words, will a total of 4 or 8 acres above the cutoff wall be planted with these mixtures? (Note the Division is requesting the specific seed mixtures in Exhibit F, as the seed mixture approved in TR-23, which is referenced in this estimate, does not include trees and shrubs.)

g. The line items for Trees (planted in reclaimed valley below cut off wall), Shrubs (planted in reclaimed valley below cut off wall) transported as 1 gallon pots, and Shrubs (planted in reclaimed valley below cut off wall) transported as 5-gallon pots each state approximately 6 acres will be planted with the species specified for that line item. Please clarify whether the same 6 acres will be planted with each of these mixtures. In other words, will a total of 6, 12, or 18 acres below the cutoff wall be planted with these mixtures? (Note the Division is requesting the specific seed mixtures in Exhibit F, as the seed mixture approved in TR-23, which is referenced in this estimate, does not include trees and shrubs.)

h. Please explain why the total quantity of Trees (planted in reclaimed valley below cut off wall) went from 147 down to 89 in the revised estimate.

i. The line item for Hydro mulching includes no costs, because it is “only required on 2H:1V and steeper slopes, which are not present in the valley”. The Division understands the disturbed areas in the valley proposed for revegetation are flatter than 2H:1V. However, there are no costs included for conventional mulching in these flatter areas. Is the operator proposing to not apply mulch on areas in the valley that will be seeded/planted for reclamation? If a mulch will be applied, please add a line item for this task including the type of mulch, application rate per acre, and application method.

j. If the operator intends to incorporate any amendments into the growth medium for reclamation, please include costs for this task. Additionally, please specify the type of amendment(s) to be used and the proposed application rate

21) The Division has the following comments specific to the Environmental Monitoring section:

a. In its adequacy item #36(a), the Division required the operator to adjust the Surface Water Monitoring costs to cover quarterly sampling over a full 10-year period. In its response, the operator stated “revised as requested”. However, the revised cost for this item does not cover quarterly sampling over a 10 year period, which would include a total of 520 sampling events

(not 260) for 13 monitoring locations. Given the operator's proposed plan to remove the bypass pipeline and re-establish creek flows across the mine site, it is especially important the Division continues to hold costs for sampling all surface water monitoring locations at the required quarterly frequency over the full 10 year period. Please adjust these costs accordingly.

b. In its adequacy item #36(b), the Division required the operator to adjust the Groundwater Monitoring costs to cover quarterly sampling over a full 10-year period. In its response, the operator stated "revised as requested". However, the revised cost for this item does not cover quarterly sampling over a 10 year period, which would include a total of 560 sampling events (not 280) for 14 monitoring locations (12 wells with water quality sampling + 2 spigots). Please adjust these costs accordingly.

Exhibit U – Designated Mining Operation Environmental Protection Plan (Rule 6.4.21):

22) Under Section 7 of the revised EPP, please add a description of the bulkheads installed in the Steve and Pierce adits, which are considered Environmental Protection Facilities. If CLL has access to the as-built drawings for these bulkheads, please provide copies of these drawings.

23) Under Section 7, Table 7-1 provides a list of reclamation activities completed and in progress. The two items from this list shown to be "in progress" are the Fill Material Borrow Area and Ore Sorter Area Decommissioning. Please describe where these areas are located within the permit area and what reclamation activities remain in these areas.

24) Under Section 7.1, the operator provides a list of four chemicals used in the water treatment process. Please provide the maximum volume of each of these chemicals that is stored in the plant at any time.

25) Under Section 7.1, the operator states "the plant floor was constructed with an 8-inch high berm to serve as secondary containment for all the structures in the building". Please provide additional details on the secondary containment system installed inside the plant, including whether it was designed to contain at least 110 percent of the maximum storage capacity of all primary containers holding hazardous chemicals.

26) Under Section 7.1, the operator states "the tanks are located within a lined, bermed excavation that serves as secondary containment". Please provide additional details on the secondary containment located outside of the water treatment plant in which the backfill slurry tanks are stored, including whether it was designed to contain at least 110 percent of the maximum storage capacity of the tanks with sufficient freeboard for precipitation.

Emergency Response Plan (Rule 8.3):

27) Rule 8.1 requires an operator to notify the Division, as soon as reasonably practicable, but no later than 24 hours, after the operator has knowledge of a failure or imminent failure of any impoundment, embankment, stockpile or slope that poses a reasonable potential for danger to human health, property, or the environment, or in the case of a designated mining operation, any EPF designed to contain or control designated chemicals or process solutions as identified in the permit. For the Schwartzwalder

Mine, the Division would consider a failure or imminent failure of the waste rock piles, the water treatment plant (including the pump/treat regime that keeps the mine pool level below the regulatory limit or a loss of containment situation), or the bulkheads installed inside the Steve and Pierce adits a situation in which the operator would need to notify the Division in accordance with Rule 8.2. Please commit to providing the required emergency notification to the Division in accordance with Rule 8.2 in the event of a failure or imminent failure of the facilities listed above.

Additional Item(s):

28) Please remember that, pursuant to Rule 1.6.2(1)(c), any changes or additions to the application on file in our office must also be reflected in the public review copy which was placed with the County Clerk and Recorder. Pursuant to Rule 6.4.18, you must provide our office with an affidavit or receipt indicating the date this was done. This "proof" should be submitted with your adequacy response.

This concludes the Division's 2nd adequacy review of AM-6. Please ensure the Division sufficient time to complete its review process by responding to these adequacy items no later than two weeks prior to the decision date, by **May 11, 2022**. If additional time is needed to respond, you must submit an extension request to our office prior to the decision date.

If you have any questions, you may contact me by telephone at 303-866-3567, ext. 8129, or by email at amy.eschberger@state.co.us.

Sincerely,

Amy Eschberger
Environmental Protection Specialist

Cc: Paul Newman, Colorado Legacy Land, LLC
Eric Williams, Colorado Legacy Land, LLC
Elizabeth Busby, Ensero Solutions US, Inc.
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Michael Cunningham, DRMS