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

September 27, 2022

RE: Recommendation to Approve a 112d-2 Permit Amendment Application (AM-6) with Objections; Colorado Legacy Land, LLC; Schwartzwalder Mine; Permit No. M-1977-300

Dear Party and/or Interested Person:

The Division of Reclamation, Mining and Safety (Division) hereby issues its recommendation for approval of the 112d-2 permit amendment application (Application) for the Schwartzwalder Mine, Permit No. M-1977-300, submitted by Colorado Legacy Land, LLC (Operator).

This recommendation is based on the Division's determination that the Application satisfied the requirements of Section 34-32-115(4) of the Colorado Mined Land Reclamation Act, 34-32-101 *et seq.*, C.R.S. (Act). The Applicant addressed all adequacy issues which were identified by the Division during the adequacy review process to the Division's satisfaction. Therefore, on September 27, 2022, the Division determined the Application satisfied the requirements of C.R.S. 34-32-115(4) and issued its recommendation to approve the Application over objections. The Division's rationale for approval (Rationale) identifies the jurisdictional issues raised by objecting parties, and groups them into the following categories:

1) Conceptual Site Model
2) Physical Stabilization of the Mine Pool
3) Chemical Stabilization of the Mine Pool
4) Environmental Protection Plan
5) Reclamation Plan
6) Reclamation Bond
7) Other Agency Involvement

The Division's Rationale provides a full and thorough analysis of the seven broad categorical issues (listed above) which were raised by objecting parties. A copy of the Division's Rationale is enclosed, and is also available for public review on the Division's website at https://drms.colorado.gov, by clicking on DRMS Weblink (Laserfiche) then entering the file number "M1977300" into the Permit No field and hitting Enter.

The Division's recommendation to approve the Application is to the Colorado Mined Land Reclamation Board (Board). The Division received timely written objections to the Application. Therefore, pursuant to Rules 1.4.9(2)(a) and 1.7.4(2), the Division has scheduled the Application for consideration by the Board. During the hearing, the Board will consider the Application with objections and may decide to approve, approve with conditions, or deny the Application.

The Pre-hearing Conference is scheduled to occur virtually (via Zoom) on Wednesday, October 5, 2022 starting at 9:30 a.m. and ending no later than 11:00 a.m. The Formal Board Hearing is scheduled to occur (also via Zoom) during the October 19-20, 2022 Board meeting, beginning at 9:00 a.m., or as soon thereafter as the matter can be considered. The Division will provide an authorization code to attend the meeting by

Zoom prior to the meeting date. Additional details on the Pre-Hearing Conference and Formal Board Hearing were provided to all parties on September 13, 2022.

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

Encl: Rationale for Recommendation to Approve a 112d-2 Permit Amendment Application (AM-6) with Objections; Colorado Legacy Land, LLC; Schwartzwalder Mine; Permit No. M-1977-300, dated September 27, 2022

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Introduction

On September 27, 2022, the Division of Reclamation, Mining and Safety (Division or Office) issued its recommendation to approve, over objections, the permit amendment application for the Schwartzwalder Mine, Permit No. M-1977-300 (Application or AM-6). This document seeks to explain the process by which the Division arrived at its recommendation to approve the Application over objections, and respond to the issues raised by objecting parties. The Division reserves the right to further supplement, amend, modify, or clarify this document and recommendation with additional details as necessary.

Summary of the Review Process[1]

Colorado Legacy Land, LLC (Operator) filed the Application with the Division on July 29, 2021. The Application does not propose an expansion of the current permit area of 76.22 acres. The Application provides a conceptual site model, a plan addressing the physical and chemical stabilization of the mine pool, specifically addressing the concentration of dissolved uranium and other constituents as required under the conditions of the permit, and updated reclamation and environmental protection plans. The Application also provides a plan addressing the long-term cost of operating the water treatment plant and managing the mine pool, based on a minimum of three consecutive years of data which verify the physical and chemical stabilization of the mine pool. The Application is meant to address conditions no. 2 and 3 of the Division's approval of the Succession of Operators (SO-01) from Cotter Corporation to Colorado Legacy Land, LLC, as outlined in its letter dated February 20, 2018 (see Attachment A).

Pursuant to Rules 1.1(17) and 1.4.1(7), the Division deemed the Application "complex", and extended the typical 90-day decision deadline by 60 days, from October 27, 2021, to December 26, 2021. During the 365 day review period, the Application decision date was extended six additional times at the Operator's request, to allow sufficient time for adequacy items identified by the Division to be addressed. On August 17, 2022, the Mined Land Reclamation Board (Board) approved the Operator's request to extend the Application decision date 60 days beyond the 365 day deadline of July 29, 2022, moving the Application decision date to September 27, 2022.

[1] Herein, all references to the Act and Rules refer to the Colorado Mined Land Reclamation Act, 34-32-101 *et seq.*, C.R.S. (Act), and to the Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for Hard Rock, Metal, and Designated Mining Operations, 2 C.C.R. 407-1 (Rules or Rule). The Act and Rules are available at https://drms.colorado.gov.

The Applicant published notice of the Application once a week for four consecutive weeks, in accordance with Rules 1.6.2(1)(d) and 1.6.5(1). The notice was published in the Denver Post, with the last publication occurring on August 26, 2021. Per Rule 1.7.1(2)(a), the public comment period closed twenty (20) calendar days after the last date for the newspaper publication, on September 15, 2021. During this period, the Division received a total of two timely objections on the Application, from City of Arvada and Denver Water. Additionally, the Division received agency comments from History Colorado and the Division of Water Resources. The Division forwarded copies of all timely comments and objections to the Applicant in accordance with Rule 1.7.1(3).

The Division has scheduled the Application for consideration by the Mined Land Reclamation Board (Board), to occur during the October 19-20, 2022 Board meeting. The Pre-hearing Conference is scheduled for October 5, 2022. The Division provided notice of the scheduled Board hearing and Pre-hearing Conference to all parties in accordance with Rule 1.4.9(2)(b).

During the review period, the Division considered all timely comments and objections received on the Application. The Division generated a total of five adequacy review letters enumerating all adequacy issues for the Application. The Operator addressed all adequacy items to the Division's satisfaction. Therefore, on September 27, 2022, the Division determined the Application satisfied the requirements of C.R.S. 34-32-115(4) and issued its recommendation to approve the Application. On that same date, the Division forwarded a copy of its recommendation and rationale for approval to all parties in accordance with Rule 1.4.9(2)(c), and also made this document available to the public through the Division's website.

Jurisdictional Issues

The jurisdictional issues raised by objecting parties have been grouped into seven broad categories, including:

1) Conceptual Site Model
2) Physical Stabilization of the Mine Pool
3) Chemical Stabilization of the Mine Pool
4) Environmental Protection Plan
5) Reclamation Plan
6) Reclamation Bond
7) Other Agency Involvement

The categories are listed below in bold text. Under each category, objector concerns are attempted to be summarized in italic text, with the objector specified at the end in parentheses. The Division's response follows the issue(s) in standard text.

1. Conceptual Site Model

- *CLL's Conceptual Site Model (CSM) is deficient. It lacks sufficient data and quantitative analysis. It does not meet ASTM or EPA standards and guidance for the content of a CSM. (City of Arvada)*

- *There is inadequate evidence that the subsurface hydrogeology and groundwater flows are well-characterized. Is uranium migrating offsite in the regional groundwater? This has not been studied with a quantitative groundwater model. (City of Arvada)*

- *The CSM is "preliminary" and does not include recent data (2018-present). CLL should incorporate data collected and work performed since 2018 into the CSM. (Denver Water)*

- *The CSM contains a list of data gaps without a plan for addressing data gaps. CLL should develop and present a plan to address the data gaps outlined in the CSM, especially with regard to the characterization and monitoring of the hydraulic gradient around the mine pool. (Denver Water)*

- *The CSM provided is more characteristic of the Baseline CSM Stage as described by USEPA guidance. Based on the Reclamation Plan in Exhibit E, the CSM should be updated and revised to meet the criteria of the Remediation/Mitigation CSM stage. According to USEPA guidance, a more detailed diagram and description depicting geologic, hydrogeologic, chemical information, and fate and transport processes, in support of remedy design are necessary to assist key stakeholders (including Denver Water) in understanding complex site information. A CSM should also identify and characterize all contaminant sources, including the mine pool and potential migration pathways through faults/fractures (such as the Illinois Fault) or bedrock groundwater. A more robust CSM will also increase confidence that the Reclamation Plan will ensure protectiveness of the environment, effectively manage resources, and limit the environmental footprint of site cleanup activities. CLL should update and revise the CSM to USEPA's Remediation/Mitigation CSM Stage and the ASTM Standard for Developing Conceptual Site Models. (Denver Water)*

- *More data is necessary to demonstrate the established regulatory limit of 150 feet below Steve Level Adit. CLL should install a bedrock groundwater monitoring well downgradient of the mine pool. CLL should collect additional data on hydraulic gradients at different mine water levels and develop potentiometric surface diagrams at different levels. CLL should collect data on uranium concentrations and oxidizing conditions through indicator parameters such as dissolved oxygen, oxidation reduction potential, and total organic carbon in the mine pool on a monthly basis, including when the mine is refilling. (Denver Water)*

The submittal of a conceptual site model (CSM) was a condition (condition #2) of the Division's approval of the Succession of Operators (SO-1) to Colorado Legacy Land, LLC, as outlined in its SO-1 approval letter dated February 20, 2018. The Act and Rules do not provide guidance for the development of a CSM. However, the purpose and intent of the CSM was to provide an overview of site conditions, to identify contaminants of potential concern and their source(s), and to describe potential reclamation/mitigation measures.

The U.S. Environmental Protection Agency (USEPA) has provided guidance on developing a CSM, as

outlined in their Quick Reference Fact Sheet titled "Environmental Cleanup Best Management Practices: Effective Use of the Project Life Cycle Conceptual Site Model", dated July 2011. This fact sheet defines a CSM as an iterative, 'living representation' of a site that summarizes and helps project teams visualize and understand available information. The stated purpose of the fact sheet is to demonstrate the utility of using the CSM to assist Superfund project teams, hazardous waste site cleanup managers, and decision makers throughout the life cycle states of investigation and cleanup. The focus of the fact sheet is on defining stages and products of CSMs along with their potential applications at various stages of a project life cycle. The six stages outlined in the fact sheet (Preliminary, Baseline, Characterization, Design, Remediation/Mitigation, and Post Remedy) are presented in a Superfund Program context. While the information presented in this guidance document can certainly be useful for other agencies and programs that regulate sites with contamination issues, the stages outlined in the document are not programmatic requirements, nor are they meant to be prescriptive. As stated in the document, the stages represent the common progression of the environmental cleanup process, and the level of effort necessary to develop specific components should correlate with the level of site maturity, site complexity, and the magnitude of the characterization and cleanup challenges presented at the site.

In the case of the Schwartzwalder Mine, the site does have documented contaminant sources that exist from previous mining activities (e.g., mine pool, waste rock deposited in valley). However, this mine is not a Superfund Site or an environmental cleanup project. It is a permitted mining operation (in final reclamation) that is regulated by the Division as well as other state and federal agencies. This operation is in compliance with the Act and Rules. The Division reviews and approves all aspects of a mining operation, including the reclamation plan, the requirements of which are defined by the Act and Rules. As mentioned above, the Act and Rules contain no provisions for developing a CSM. Therefore, the Division's review of the CSM provided in AM-6 was guided by the intent behind the Division's decision to add this requirement as a condition of SO-1 approval in 2018.

The CSM provided in AM-6 includes an operational site history, a description of site conditions and current operations, the identification of potential contaminants and their source(s), a description of reclamation/mitigation work completed, and a summary of ongoing reclamation/mitigation work, environmental monitoring, and agency reporting. During the course of the Division's adequacy review process, the operator updated the initially submitted CSM to include data collected and work performed since 2018. The operator also updated the section of the CSM pertaining to data gaps/issues that were identified in 2018, to reflect how these issues have been addressed since that time.

The CSM incorporates the proposed long-term strategy of maintaining the mine pool elevation below the regulatory limit of 150 feet below the Steve Level. This strategy has been successfully implemented by the operator since 2018. Data from three bedrock monitoring wells, MW-13, MW-15, and MW-18, as well as from the transducer installed in the mine, were used to demonstrate that a hydraulic gradient toward the mine workings (and away from Ralston Creek) is maintained under the current operational strategy. This concept is best illustrated on the figure presented on slide 28 of the CSM, which shows a bedrock contour map of the site (when the mine pool elevation is below the regulatory limit). In addition to the updated CSM, the operator also submitted a technical memorandum by Ensero titled "Schwartzwalder Mine – Hydrogeology Associated with the Current Water Management Program", dated December 3, 2021, which provides an analysis of hydraulic gradients southeast of the mine. This memorandum provides technical support that the mine operates as a large-scale hydraulic sink when the

mine pool is kept below the current regulatory limit. The memorandum explains how under these conditions, there does not exist hydraulic mechanisms by which water in the mine pool can exit the mine and migrate into the surrounding bedrock groundwater system or into Ralston Creek. Regardless, the operator has committed to installing an additional bedrock monitoring well downgradient of the mine site, to better demonstrate the inward hydraulic gradient. This additional monitoring well will be installed once the alluvial valley excavation project is completed, currently estimated to occur during the summer of 2023.

With regard to the mine pool monitoring plan, the currently approved plan includes recording mine pool elevations on a daily basis and collecting water quality samples from the mine pool on a quarterly basis (during operations). This data is provided to the Division in the quarterly monitoring report which includes data collected from other site monitoring locations. The Division believes the current monitoring plan, along with the operational strategy at the site, is sufficient to protect the hydrologic resources in the area. However, the operator has committed to increasing the sampling frequency to monthly for all approved surface water monitoring locations once creek flows have been re-established across the mine site (after completion of the alluvial valley excavation project).

The Division found the CSM submitted in AM-6 to be adequate, and to have satisfied condition #2 of the Division's approval of SO-1.

2. Physical Stabilization of the Mine Pool

- *With only two monitoring wells used to estimate groundwater gradients, there is insufficient evidence that the mine pool is contained. Data on only two wells (MW-15 and MW-18) were provided in the amendment in Table E-1. (City of Arvada)*

- *Water levels in the mine pool are measured by a single transducer. The transducer and pump in the mine pool are infrequently inspected and calibrated. In the Reclamation Plan, CLL describes an event where the transducer measuring mine pool levels was recording inaccurate readings, which was only verified by a team physically entering the mine. Reliance on a single measurement from a single piece of equipment to make decisions for dewater operations is inherently risky. CLL should submit a monitoring contingency plan describing inspection and maintenance procedures for the mine pool pump and transducer. CLL should install a secondary backup transducer to confirm water level readings and in case of a malfunction of the primary transducer. (Denver Water)*

- *CLL does not provide sufficient data to assert that physical stabilization of the mine pool has occurred. CLL uses only two bedrock monitoring wells, one of which only has three data points dating back to Q2 2020. This does not demonstrate physical stabilization of the mine pool for the last three consecutive years, as required by the SO-1 approval letter. CLL should continue collecting bedrock groundwater data and consider installation of additional bedrock wells to further refine the CSM. (Denver Water)*

- *CLL claims only 6 months of operation is needed to maintain the mine pool at 150 feet below the Steve Level Adit, however there is only one full year of data that supports this claim. (Denver Water)*

Condition #2 of the Division's approval of SO-1 required the operator to provide a plan addressing the physical stabilization of the mine pool. Condition #3 of SO-1 approval required the operator to address the long term cost of operating the water treatment plant and managing the mine pool, which the Division expected would be based on three consecutive years of data that verify the physical and chemical stabilization of the mine pool. No criteria for physical stabilization of the mine pool were specified in SO-1. However, based on site conditions prior to SO-1 approval in which the mine workings were flooded, physical stabilization referred to achieving a mine pool elevation below the regulatory limit of 150 feet below the elevation of the Steve Level (as required by the Modified Board Order, dated October 4, 2012; see Attachment B), and developing an operational strategy to maintain these conditions.

Physical stabilization of the mine pool began when a 10-horsepower (hp) pump was installed in the #2 Shaft behind the Steve Adit bulkhead (by the previous operator, Cotter Corporation). This pump was capable of dewatering the mine pool at 100 gallons per minute (gpm). The 10-hp pump was replaced with a 25-hp pump in February 2017 to increase the mine dewatering rate and speed up the process of achieving the regulatory limit. The pump was installed in the #2 Shaft behind the Steve bulkhead at 210 feet below the Steve Level and was capable of dewatering the mine pool at 190 gpm. The 25-hp pump dewatered the mine pool to below the regulatory limit (150 feet below Steve Level) by November 2017. In April 2019, the current operator installed a 60-hp pump in the Jeffrey Air Shaft at 410 feet below the Steve Level. This pump is capable of dewatering the mine pool at approximately 300 gpm. While the 25-hp pump is no longer needed, this pump remains in the mine as a contingency measure, in the event there are issues with the 60-hp pump. The 25-hp pump was used for this purpose in April 2020, when there was a malfunction with the 60-hp pump. During that time, operation of just the 25-hp pump was sufficient to keep the mine pool below the regulatory limit.

The transducer that records mine pool elevations hangs in the mine pool in Shaft #2 (behind the Steve Adit bulkhead). In October 2020, the mine was entered to verify the mine pool elevation and to calibrate the transducer. It was discovered at that time the mine pool had been dewatered to 22 feet lower than the elevation recorded by the transducer, which resulted in higher measurements being recorded. The transducer was lowered from 294 feet to 354 feet below the Steve Level and calibrated to accurately measure the mine pool elevation. The mine pool transducer provides real-time data (by the second) and records mine pool elevations every 30 minutes. This data is monitored remotely by the operator. In the event of a transducer malfunction, the operator would be alerted to this issue within the hour. The operational strategy of maintaining a 20 foot buffer from the regulatory limit allows the operator ample time (a minimum of 30 days, during mine refill) to respond to any issues.

Because the Steve Level is sealed with a bulkhead closure, the mine pool transducer can only be accessed by entering the Sunshine Decline and working backwards toward the Steve Adit. In order to minimize health and safety risks (e.g., radon exposure, falls), only essential underground work is conducted. The Division believes the current transducer is appropriate, and it supports operation of the water treatment plant while balancing the risks of underground site work. However, the operator has agreed to install an additional transducer in monitoring well MW-18 to act as a secondary tracking of mine-influenced groundwater levels.

The water treatment plant has operated approximately 50% of the year for the last four consecutive years to treat water pumped from the mine workings. The treated water is discharged to Ralston Creek under a permit held with the Colorado Department of Public Health and Environment (CDPHE). The mine pool has been consistently below the regulatory limit since late 2017. Additionally, the operator has had no issues with treating the pumped water to meet the stream standards specified by the CDPHE permit and is currently in full compliance with the requirements of this permit. In AM-6, the operator proposes to continue the current operational strategy of dewatering the mine pool for 4-6 months, then allowing the mine to naturally refill during the remainder of the year. The water treatment plant is typically brought back online once the mine pool has reached a level of 20 feet below the regulatory limit. At this level, (with a natural mine refill rate of approximately 0.6 feet/day), the operator has approximately 30 days to get the plant back online and work through any issues encountered prior to the mine pool reaching the regulatory limit. Typically, the plant is brought online two weeks prior to the start of dewatering. However, in an emergency situation, the plant could be brought online in as little as four days.

Data obtained over the past four consecutive years from bedrock monitoring wells MW-13, MW-15, and MW-18 (see Attachment C), and also from the transducer installed in the mine pool (which acts as a pumped well), indicate that maintaining the mine pool elevation below the regulatory limit of 150 feet below the Steve Level has established a hydraulic gradient inward toward the mine pool and away from Ralston Creek, as was intended when the regulatory limit was established by the Board in 2012. Monitoring well MW-13 (total depth = 500.8 feet bgs) was installed as a deep upgradient monitoring well; MW-15 (total depth = 1,007.13 feet bgs) was installed east of the mine targeting the Schwartz Trend geologic transition zone, and downgradient of the mine relative to pre-mining static water levels; MW-18 (total depth = 239.9 feet bgs) was installed in the valley floor targeting the Illinois Fault in the area where this fault is adjacent to the creek. The two geologic features (Schwartz Trend and Illinois Fault) targeted by monitoring wells MW-15 and MW-18 were thought to be potential migratory pathways for the mine pool at the time when the mine workings were flooded. These three deep groundwater monitoring wells were installed in 2012, prior to the mine pool being dewatered below the regulatory limit in late 2017. Once the mine pool was brought below the regulatory limit, the gradient from the bedrock wells ranged from 0.014 to 0.304 feet per foot. This data indicates the hydraulic gradient in the mine area is toward the mine workings.

The available data indicate the regulatory limit is set at an appropriate depth to protect the creek and reduce the potential for groundwater to migrate along the recognized permeable features that intersect the mine. The operator provided a bedrock groundwater contour map (on Figure E-4; see Attachment D) that illustrates the capture zone associated with the mine pool. This map indicates that all groundwater near the mine flows towards the mine, bedrock water levels are below the creek elevation northeast of the mine, and there is a groundwater divide to the southeast of the mine, north of which, groundwater flows into the mine, and south of which, groundwater flows towards the creek. As stated in the technical memorandum prepared by Ensero Solutions, Inc. titled “Schwartzwalder Mine – Hydrogeology Associated with the Current Water Management Program”, dated December 1, 2021, under the current groundwater conditions, hydraulic mechanisms do not exist by which the mine pool water can exit the mine workings and discharge to the creek or into the surrounding bedrock groundwater system. This condition will persist as long as the mine pool is kept below the regulatory limit, which the operator proposes to continue doing via the current operational strategy.

Based on the operator's ability to keep the mine pool elevation below the regulatory limit of 150 feet below the Steve Level since 2018 (over 4 consecutive years), the Division believes the operator has sufficiently demonstrated physical stability of the mine pool in accordance with Conditions #2 and #3 of SO-1 approval.

3. Chemical Stabilization of the Mine Pool

- *CLL has not stabilized the mine pool. Uranium and radium levels in the mine pool are extremely high. On page 21 of the amendment, CLL states the mine pool contains uranium at levels of 12 mg/L, which is 400 times the Maximum Contaminant Level of 0.03 mg/L allowed in drinking water. According to Table E-2 on page 23 of the amendment, the average level of radium-226 in the mine pool is 61 pCi/L, which is over 12 times the MCL of 5 pCi/L for combined radium allowed in drinking water. (City of Arvada)*

- *The data in Figure E-5 demonstrate that uranium levels are increasing in the mine pool. This is logical because concentrated brine from the Reverse Osmosis treatment process is not being removed from the site, but rather is being discharged back into the mine pool. (City of Arvada)*

- *CLL has not provided sufficient evidence to exclude the "suspect data" showing very high levels of uranium in Figure E-3. This needs additional study before we have confidence in the stability of the mine pool. (City of Arvada)*

- *Increased levels of uranium or other contaminants can harm public health as well as cause increased treatment and residual disposal costs due to TENORM. When the City is required to dispose of TENORM, the cost is 700% higher than our standard disposal cost. Accordingly, it is imperative this site is sustainably operated with drinking water source water protection and public health as priorities in both the near and long-term. (City of Arvada)*

- *CLL has not described the effect of injecting the reverse osmosis (RO) concentrate from the water treatment plant (WTP) back into the mine pool. The addition of concentrated brine to the mine pool may significantly affect the geochemical behavior of uranium and other constituents of concern. (Denver Water)*

- *It is unclear how the RO concentrate affects in-situ treatment performance. CLL should demonstrate that the addition of RO concentrate to the mine pool will not negatively impact on-going in-situ treatment. (Denver Water)*

- *RO concentrate mixed with various additives is used during in-situ treatment to increase solution density and deliver carbon to the mine pool. This information is a critical component of the in-situ uranium bioremediation process and should be included in Exhibit E as well as the reclamation cost tables in Exhibit L. CLL should provide additional operational details for the generation and injection of backfill slurry. (Denver Water)*

- *Uranium concentrations did not significantly decrease after the 2020 in-situ treatment event. Other than speculative reasons for why the latest in-situ treatment was not successful, CLL offers no solutions or changes to their current treatment strategy to resolve these issues. CLL should develop and present a plan to characterize the factors that influence uranium concentrations during in-situ treatment. A contingency should also be developed and presented in the event that in-situ treatments are no longer effective. (Denver Water)*

- *CLL identifies a possible labeling error as an explanation for elevated uranium concentrations in the months preceding the 2017 in-situ treatment. It is unlikely that 10 samples collected over multiple sampling events were incorrectly labeled. If this is the case, sampling quality assurance/quality control (QA/QC) procedures need to be evaluated and reconsidered. CLL should develop a QA/QC plan and sampling plan to collect high quality data reliably. (Denver Water)*

- *We do not agree that three consecutive years of data verifying the physical and chemical stabilization of the mine pool has been provided in AM-6. (Denver Water)*

- *CLL excludes significant data needed to confirm concentration trends regarding physical and/or chemical stabilization of the mine pool. Specifically, a) concentration trends for samples taken from the mine pool do not demonstrate its chemical stability. Although in-situ treatment often helps to decrease uranium concentrations on a temporary basis, the upward trend of uranium concentrations appears to resume after each treatment. Furthermore, in a troubling sign, there was not a significant decrease in uranium concentrations after the most recent in situ treatment; b) AM-6 reveals several concerns with respect to data collection, analysis, and planning, including CLL's exclusion of data, errors in data presentation, faulty monitoring equipment, and need for contingency planning; and c) a long-term plan for reclamation of the mine pool is not clearly presented, which raises the question of whether CLL will pump from the pool and treat extracted water indefinitely. (Denver Water).*

Condition #2 of the Division's approval of SO-1 required the operator to provide a plan addressing the chemical stabilization of the mine pool and specifically addressing the concentrations of dissolved uranium and other constituents as required under the conditions of the permit. Condition #3 of SO-1 approval required the operator to address the long term cost of operating the water treatment plant and managing the mine pool, which the Division expected would be based on three consecutive years of data that verify the physical and chemical stabilization of the mine pool. The requirement to demonstrate chemical stabilization of the mine pool was to ensure the mine pool chemistry was acting in a more predictable manner and that the treatment methods used by the operator are adequate to maintain water quality compliance over the 20 year treatment period.

Water in the underground workings is a strongly-buffered calcium-magnesium-sodium-sulfate water with near neutral pH (median value = 7.17), high concentrations of total dissolved solids (approximately 3,000 mg/L), and elevated concentrations of sulfate, antimony, arsenic, iron, manganese, molybdenum, thallium, uranium, and radium 226. The primary constituents of concern are uranium and molybdenum. As the mine pool is dewatered (to comply with the regulatory limit), the pumped water is run through an on-site reverse

osmosis (RO) treatment system prior to the water being discharged into Ralston Creek downgradient of the mine site, at the monitoring location SW-BPL. This outfall is regulated under a permit the operator holds with the CDPHE. The CDPHE permit requires the discharge to meet specified water quality standards for the creek, including the standard of 0.03 mg/L for uranium and 0.15 mg/L for molybdenum. For more than four consecutive years, the RO treatment system has consistently produced water quality that meets these standards. It should be noted, an ion exchange (IX) treatment system is also installed in the plant and at this time is used mainly for polishing purposes after the water has run through the primary RO treatment system. However, the IX system could be used for primary treatment, if needed.

While the mine chemistry is in a "brackish" water chemistry designation, where dissolved solids are higher than the freshwater range, the water is not so saline that it cannot be treated to make fresh water acceptable for other uses (as demonstrated over the past four years). Limiting oxidation processes in the mine has been the primary approach to stabilizing the chemistry of the mine pool, so that the RO treatment system can continue to effectively treat water pumped from the mine. Limiting oxidation processes has been accomplished by decreasing oxygen flux into the mine by closing/filling mine openings and stopping active ventilation of the mine, as well as by performing periodic in-situ treatments of the mine pool, during which microbial reagents are added in situ to consume oxygen and reverse historical oxidation that occurred when the mine was open and air was blown through the mine to decrease radon exposure.

The in-situ treatments consist of injecting carbon sources (e.g., molasses, alcohols such as ethanol and methanol) to stimulate the activity of native sulfate-reducing bacteria (SRB). SRB obtain energy by coupling the oxidation of organic compounds to the reduction of sulfate or other sulfur compounds to sulfide. Soluble sulfides are produced that react with chalcophile metals (e.g., zinc, cadmium, lead, copper) to precipitate low solubility metal sulfide phases. A phosphate source such as phosphoric acid is also added during the in-situ treatments when necessary, as a nutrient for the microbes. During in-situ treatments, iron sulfides are precipitated because a reducing environment has been formed to allow this reaction to continue. The iron sulfides are known to be dense such that they will sink in the mine pool and attach to and coat mine rocks, etc. where they are formed. The mine pool is acting as a long-term in-situ bioreactor in which a reducing environment will be maintained such that the precipitates remain insoluble.

A total of five in-situ treatments of the mine pool have occurred to date, including in 2013, 2015, 2017, 2020, and 2021. While the initial in-situ treatments were substantially effective in reducing uranium concentrations in the mine pool (for example, the first treatment brought the uranium concentrations from approximately 23 mg/L down to 2 mg/L), these treatments have shown less effectiveness over time in reducing uranium concentrations. Additionally, the initial decrease in uranium concentrations observed after an in-situ treatment has typically been followed by a rebound in these concentrations. For example, after the 2013 in-situ treatment, uranium concentrations in the mine pool were reduced to approximately 2 mg/L, and then increased to a maximum of approximately 7-8 mg/L prior to the next in-situ treatment in 2015. Molybdenum concentrations in the mine pool have shown a similar pattern of decreased concentrations with in-situ treatments followed by an increase in concentrations. After the first in-situ treatment in 2013, molybdenum concentrations were reduced from approximately 1.5 mg/L to a minimum of approximately 0.14 mg/L, but then rebound to a maximum concentration of approximately 1.2 mg/L prior to the next in-situ treatment in 2015.

While the 2013, 2015, and 2017 in-situ treatments resulted in a significant or fairly significant decrease in uranium concentrations in the mine pool, a significant decrease in uranium concentrations was not observed after the 2020 or 2021 in-situ treatments. The operator has suggested these results may indicate the mine pool chemistry has reached a point at which continued in-situ treatments may not achieve substantially reduced uranium concentrations below the current concentrations of approximately 15-20 mg/L. This is attributed to calcium uranium carbonate complexes that effectively limit the rate and extent of uranium reduction and removal that can be expected by stimulating microbial activity (via in-situ treatments). Accordingly, the operator is proposing to utilize in-situ treatments only for maintaining uranium concentrations at the current levels (rather than reducing uranium concentrations). It should be noted, the 15-20 mg/L range in uranium concentrations is substantially lower than the uranium concentrations recorded prior to beginning the in-situ treatments in 2013, which ranged from approximately 25 to 70 mg/L. Additionally, these concentrations are still within the range of concentrations in which the RO treatment system can produce compliant water from the mine and maintain the mine pool below the regulatory limit.

While calcium and bicarbonate/carbonate concentrations have risen over time compared to their concentrations when the mine workings were initially allowed to refill after mining ceased in 2000, the concentrations of both are now effectively saturated and are not expected to continue to increase substantially even with the continued operation of the RO treatment program (and associated recirculation of RO concentrate into the mine). The operator estimates further calcium increases will be limited at best (5-10%) during the next 20 years of operations, and that uranium concentrations, which are heavily controlled by calcium and alkalinity, will also have limited further increase in concentrations based on these solubility controls.

The operator stated the current treatment system is robust enough to sustain more than a 400% increase in uranium concentrations without threatening the treatment system's ability to maintain compliant discharge. Given the mine chemistry and limiting factors described above, the operator does not expect uranium and molybdenum concentrations in the mine pool to increase to the point at which the current treatment system could no longer treat the water to meet discharge standards. The concentration of total dissolved solids (TDS) in the mine pool has remained relatively unchanged since the fill period (2,917 mg/L in 2000-2007 compared with 2,850 mg/L in 2018-2021), which indicates the bulk mine pool chemistry is stable.

Reject brine generated from the RO treatment process is amended with barium chloride and injected back into the mine on a continuous basis (during operations, which occurs 4-6 months per year). The RO reject is injected into the deep mine workings through the Steve Adit bulkhead via a pipeline that discharges at the 1,100 level. The RO reject is a higher TDS solution that is more dense (approximately 3x more concentrated) than the mine water, and will sink in the mine pool where it is discharged and meet equilibrium with the mine water around it. The operator estimates approximately 30% of the total volume of water pumped from the mine is returned to the mine as reject. The RO reject remains isolated in the deep mine workings because of inward hydraulic gradients and density stratification in the mine pool.

The injection of RO reject into the mine pool, as well as the use of in-situ treatments, were approved by the Division in Amendment No. 4 (AM-4; approved on April 29, 2013). AM-4 includes extensive details on these processes. Therefore, the operator was not required to resubmit these details in AM-6. Through its review of AM-6, the Division did have some questions regarding these processes as it relates to data collected at the site over the past four years. The operator addressed these questions to the Division's

satisfaction. However, the effects of these processes on the mine pool chemistry and the efficiency of the water treatment system will continue to be evaluated at the site as additional data is collected. At this time, there is insufficient data to determine whether returning RO reject to the deep mine workings during plant operations is causing an increase in uranium concentrations in the mine pool and/or impacting the effectiveness of in-situ treatments. As the operator noted in AM-6, TDS concentrations in the mine pool have remained virtually unchanged since the mine refill period, which indicates the bulk chemistry of the mine pool is stable. While some constituents have shown a modest increase in concentrations since the mine refill period (e.g., chloride, arsenic, iron, copper), no constituent is increasing to a level that prevents RO technology from being used to maintain the mine water balance.

In general, the mine chemistry is consistent with a mildly reducing environment, which is what is observed when looking at the redox potential in mine water pumped for treatment. In mildly reducing environments, arsenic and iron can be slightly increased in concentration. These minor variations do not affect RO treatment effectiveness. The bulk water chemistry has shifted from a calcium sulfate water toward a calcium sulfate-bicarbonate water, where bicarbonate concentrations have doubled (from 374 mg/L to 790 mg/L) and mean sulfate concentrations have decreased (from 1,725 mg/L to 1,362 mg/L). Iron is typically insoluble in oxidized and neutral conditions observed when the mine initially filled and transitioned to slightly soluble conditions when the mine became mildly reducing (from being sealed and the introduction of in-situ treatment). Arsenic concentrations generally follow the same trend as iron - low solubility in oxidized conditions with iron present, and slightly more soluble in mildly reducing conditions. However, the increase in mean iron concentrations (from 0.02 mg/L to 4.1 mg/L) and mean arsenic concentrations (from 0.0036 mg/L to 0.013 mg/L) from the mine refill period to now in no way impacts the effectiveness of the RO treatment system, as shown by over four years of data. Radium-226 does not show an increasing trend. The data show a current radium-226 mean concentration of 127 pCi/L versus 178 pCi/L for the period after mine filling.

In the water quality data provided for the mine pool, the operator indicated a number of data points collected in the months preceding the 2017 in situ-treatment as being “suspect”. The operator believes this data is suspect because over the past 10 years of monitoring, uranium concentrations have not exceeded 25 mg/L and molybdenum concentrations have not exceeded 2 mg/L, with the possible exception of one sampling event in November 2017. It is thought there may have been a mix-up in the labeling of the samples at that time or the samples were collected from the wrong sample port (for RO reject). The previous operator (Cotter Corporation) conducted the mine sampling at the time the suspect data was collected. Therefore, the current operator cannot state for certain what transpired during this period. However, the current operator has made significant efforts to trace historical mine pool samples back to the original data packets and field forms. In the absence of definitive data, the operator can only infer what may have led to the suspect data. The current team that conducts the mine sampling is trained in the location and identification of the sample ports, and follows strict sampling and QA/QC procedures. Regardless of the cause for the suspect data, the elevated concentrations in uranium and molybdenum recorded during that time have not occurred since then, and the RO reject has been injected back into the mine pool continuously since late 2017. Therefore, it is unlikely the suspect data from 2017 represents elevated constituents in the mine pool due to RO reject being injected back into the mine during plant operations.

There have been notable reductions in particular constituents of concern in the mine pool since in-situ treatments began in 2013. For example, the mean concentration of dissolved uranium prior to in-situ

treatment was 41.14 mg/L compared with the current range of approximately 15-20 mg/L. The mean concentration of dissolved molybdenum prior to in-situ treatment was 1.85 mg/L compared with the post-in-situ treatment mean of 0.58 mg/L. However, based on the results of the last two in-situ treatments, the operator believes these treatments may no longer achieve a significant reduction in the concentrations of these constituents due to the mine pool reaching a chemical equilibrium in its reduced state (as described in more detail above). Therefore, moving forward, the in-situ treatments will be utilized primarily for maintaining current conditions. It should be noted, costs for continuing in-situ treatments for a 10 year period are included in the operator's bond estimate provided in Exhibit L of the application.

With respect to the various errors and data exclusions referenced by objectors, the operator has revised the application to correct these errors and to include the missing data.

The Division believes the operator has achieved chemical stability of the mine pool compared with previous conditions (during the mine refill period) by working to create and maintain a reducing environment in the mine (e.g., sealing the mine, performing in-situ treatments). Furthermore, the Division believes it is appropriate to evaluate chemical stability of the mine pool from the perspective of the effectiveness of the water treatment operations. As long as the chemistry of the mine pool does not affect the ability of the RO and IX treatment systems to treat water pumped from the mine to meet discharge standards, the mine pool can be considered chemically stable.

It should be noted, the mine pool will never be considered a drinking water source and will never meet drinking water standards. However, by keeping the mine pool below the regulatory limit and ensuring the mine water can be effectively treated by onsite treatment technology to meet discharge standards, disturbances to the prevailing hydrologic balance of the affected land and surrounding area is minimized in accordance with Rule 3.1.6.

Based on the operational data collected over the past four consecutive years, the Division believes the operator has sufficiently demonstrated chemical stability of the mine pool in accordance with Conditions #2 and #3 of SO-1 approval.

4. Environmental Protection Plan

- *The environmental protection plan (EPP) was not updated in AM-6 as required by condition number 2 of the SO-1. (Denver Water)*

- *Our concern with the reclamation of this mine and the future impacts to the watershed also includes long-term management of evolving environmental conditions including climate change and wildfires. Climate change and wildfires pose a natural threat to conditions at the mine. For example, after the 2013 floods, the underground workings were inaccessible, and the floods impacted in-situ treatment conditions. More frequent and intense flooding is expected in the future due to climate change. In addition, wildfires in Colorado have posed significant threats to tree and shrub coverage that are necessary to help control flow from large rain events. This could impact infiltration into the mine and waste rock pile stability if a wildfire occurred in the area. We recommend the EPP be updated to include strategies for management and mitigation of these pending environmental conditions. (Denver Water)*

- *CLL does not monitor for total carbon or organic carbon. No data are presented in AM-6 or elsewhere showing how much organic carbon is present in the mine pool, and it is unclear how the amount of carbon added during in-situ treatment is determined. CLL should explain how carbon dosing volumes are determined during in-situ treatment, and update the EPP in Exhibit U to include total carbon to the list of mine pool analytes. (Denver Water)*

The Environmental Protection Plan (EPP) for the site was last revised through Technical Revision No. 23 (TR-23), approved on March 17, 2017. This plan was prepared by Whetstone Associates, Inc., and is titled "Schwartzwalder Mine Environmental Protection Plan – Revision 1.0", dated September 2016. This EPP was provided as Attachment B in the operator's TR-23 adequacy response received on October 8, 2016.

Condition #2 of the Division's approval of SO-1 required the operator to provide an updated EPP. The SO-1 approval did not specify which portions of the EPP approved in 2017 would require updating.

In its preliminary adequacy review letter for AM-6 submitted to the operator on October 22, 2021, the Division asked the operator to review the 2017 EPP and provide updated information for all applicable sections in accordance with Rule 6.4.21. One of the required changes included updating the EPP to address the three new Environmental Protection Facilities (EPFs) identified by the Division in its review of AM-6, including the water treatment plant and the bulkheads installed in the Steve and Pierce Adits. The 2017 EPP covered the previously identified EPFs, the two existing waste rock piles in the valley.

The operator provided an updated EPP in AM-6 titled "Schwartzwalder Mine Environmental Protection Plan – Revision 2.0" which was prepared by Ensero Solutions. Changes were made to this EPP through the adequacy review process for AM-6, with the most recently updated version dated August 2022 (submitted with the operator's adequacy response on August 29, 2022). As requested, the operator updated applicable sections of the 2017 EPP, including Section 7 – Facilities Evaluation and Section 15 – Mitigation Options and Construction Schedule. Other sections, including Section 4 – Other Permits and Licenses, Section 8 – Groundwater Information, and Section 12 – Water Quality Monitoring Plan, refer to updated information that was provided in Amendment No. 5 (AM-5; approved on January 13, 2021) or elsewhere in AM-6.

The operator incorporated the requested information into the updated EPP, including details on the new EPFs designated by the Division. The updated EPP also includes a summary of reclamation activities that have occurred at the site since the 2017 EPP was approved, as well as a description of the long-term water management strategy proposed for the site.

An EPP is not required to include specific strategies for mitigating potential threats from climate change or wildfires. However, per Rule 6.4.21(1), an EPP shall describe how the operator will assure compliance with the provisions of the Act and Rules in order to protect all areas that have the potential to be affected by designated chemicals, toxic or acid-forming materials or acid mine drainage, or that will be or have the potential to be affected by uranium mining.

The operator provided an updated Emergency Response Plan in accordance with Rules 6.4.21(1) and 8.3. This plan discusses the operation's response to fires at the site. The water treatment plant can be monitored remotely, and in the event the main access road (Glencoe Valley Road) is not accessible, there is another

access point through the adjacent White Ranch Open Space. After the September 2013 flood event, the main site access road was impaired, which delayed the planned in-situ treatment from being conducted at the site. However, the site could still be accessed during that time by foot or all-terrain vehicle for monitoring and other purposes. The mesa on which the water treatment plant is located and the existing waste rock piles were stable through the 2013 flood. However, an additional protective measure (stormwater diversion channel) was installed on the North Waste Rock Pile (NWRP) in 2020 per Technical Revision No. 28 (TR-28; approved on March 27, 2020). This engineered channel would provide additional protection from any similar storm events that occur in the future.

Other contingency measures at the site include: remote monitoring capabilities for the water treatment plant and mine pool elevations; maintaining a 20 foot buffer from the mine pool regulatory limit (which allows a minimum of 30 days to work out any issues prior to the mine pool reaching the regulatory limit); retaining the 25-hp pump as a backup to dewater the mine in the event there are issues with the 60-hp pump (could be put back in operation in less than 2 days); the ability to bring the water treatment plant back online within 4 days if needed; the operational strategy of pumping the mine pool to approximately 400 feet below the Steve Level during summer months and allowing the mine to refill during winter months when access to the site is generally more restrictive (which allows a period of time for any maintenance issues with the pump/treat systems to be addressed while these systems are not needed); the ability to use other mine openings as an alternative injection location for RO reject (at least temporarily) in the event there are issues with the existing infrastructure that prevents the existing location from being utilized (this would allow the plant to continue operating if needed to maintain the mine pool below the regulatory limit); and the existence of an upgradient cutoff wall/headgate and bypass pipeline which can be used to divert creek flows around the mine site when necessary.

The approved water monitoring plan for the site (last revised in AM-5) does not require the operator to monitor the mine pool for total carbon or organic carbon. Although not required, the operator did conduct a two-chemical tracer test in 2020 to evaluate the system hydraulics and the degree at which organic carbon placed underground would disperse within the mine workings to facilitate in-situ treatment. A detailed description of the tracer test and its results is provided in Appendix 2 of the Application.

The Division determined the updated sections of the EPP, in combination with the information provided in the 2017 EPP, satisfy the requirements of Rule 6.4.21. Additionally, the EPP has been updated as required by Condition #2 of SO-1 approval.

5. Reclamation Plan

- *There is inadequate protection of the environment in case of a flood or wildfire emergency. (City of Arvada)*

- *We understand the timeframe for CLL to operate the site is less than 20 years. After that time, will this site become a public obligation to operate and care for into the indefinite future? This question remains unanswered. (City of Arvada)*

- *The Reclamation Plan (Exhibit E) is not written as a plan for reclamation activities, rather it summarizes those activities that have been performed. (Denver Water)*

- *The reclamation plan presented in Exhibit E does not meet the requirements of the Mineral Rules and Regulations of the MLRB for Hard Rock, Metal, and Designated Mining Operations (2 CCR 407-1). Unlike previous amendments, there is no description of the type of reclamation proposed for the affected lands (for example the Black Forest Mine area or the North Waste Rock Pile upland area), or a closure plan for mine entrances and portals, or time estimates as to the duration of these reclamation activities. No justification or description of the alluvial valley excavation, environmental monitoring, mine opening closures, or backfilling is provided in the reclamation plan. (Denver Water)*

- *We recognize that CLL has successfully completed several reclamation tasks related to surface conditions at the mine site. However, to date CLL has not addressed the management of the mine pool and its potential to impact downstream drinking water resources in the future and does not establish a viable reclamation plan for minimizing disturbances to the prevailing hydrologic balance of the affected land and the surrounding area and to the quality and quantity of water in surface and groundwater systems. (Denver Water)*

Condition #2 of the Division's approval of SO-1 required the operator to provide an updated reclamation plan. The SO-1 approval did not specify which portions of the approved reclamation plan required updating. However, since SO-1 approval, the reclamation plan for the site has been updated through a series of permit revisions, including Technical Revision No. 26 (updated inventory list for items to be disposed of in the Minnesota Adit; approved on July 6, 2018), Technical Revision No. 27 (mine pool dewatering upgrade, sampling methodology and reporting, and change to groundwater sump sampling location; approved on January 17, 2019), Technical Revision No. 28 (revised North Waste Rock Pile drainage design, construction, and schedule for implementation; approved on March 27, 2020), Technical Revision No. 29 (removal of alluvial monitoring wells MW-1, MW-2, MW-3A, and MW-9 to ensure the surrounding contaminated alluvial soils are appropriately excavated; approved on December 2, 2019), and Amendment No. 5 (increase permit area by 3.98 acres to accommodate anticipated reclamation activities in former Black Forest Mine and North Waste Rock Pile upland area, and revise reclamation plan to include disposal of radionuclide-impacted alluvial valley soils into the Black Forest Mine; approved on January 13, 2021).

It should be noted, Rule 1.10(1) states that an amendment application is not required to include information which duplicates applicable previous submittals. However, the operator shall clearly describe where in the original application and supporting documents the information not included in the amendment application, but necessary to render the application technically adequate, may be found. Therefore, the operator was not required to submit in AM-6 portions of the reclamation plan (e.g., mine closures, waste rock pile reclamation) that have been approved in previous application/revision submittals.

While no significant changes to the current approved reclamation plan for surface disturbances are proposed in AM-6, the updated plan does include specific details on how the remaining affected lands in the valley (mainly associated with the alluvial valley excavation project) will be reclaimed. This plan includes details on how the lands will be graded, retopsoiled, and revegetated. It also addresses existing structures at the site (e.g., upgradient cutoff wall, bypass pipeline, grouted boulder areas, roads, water treatment plant and associated structures). One change proposed for the valley reclamation plan was to place the remaining soils

to be excavated from the alluvial valley excavation project at the southeastern edge of the existing South Waste Rock Pile (SWRP), thereby extending this pile to the southeast. This extended area will receive a 3 foot cap and be revegetated with the same grass/wildflower mixture used for the existing waste rock piles. The operator expects to complete all reclamation earthwork and initial seeding in 2023. AM-6 does not propose an increase in affected lands or a change to the current approved post-mining land use of wildlife habitat.

The updated reclamation plan addresses the long-term management of the mine pool and its potential to impact downstream drinking water resources. The proposal to continue maintaining the mine pool below the regulatory limit and treating the pumped water through the on-site RO and IX treatment systems to meet discharge standards will minimize disturbances to the prevailing hydrologic balance of the affected land and surrounding area, in accordance with Rule 3.1.6. This strategy is more protective than previous site conditions (after mining ceased in 2000) at which time the mine workings were allowed to flood and discharge to Ralston Creek (without prior treatment). Given that the mine pool will never meet drinking water standards, the Division believes the proposed operational strategy is an acceptable plan for long-term management of the contaminated mine pool. This strategy has proven effective over the past four years.

A reclamation plan is not required to include specific strategies for mitigating potential threats from climate change or wildfires. However, the reclamation requirements outlined in Rules 3 and 6.4.5 ensure that a mining operation is reclaimed to a stable configuration with minimal disturbances to the hydrologic balance. Section 3 (above) discusses the updated Emergency Response Plan submitted in AM-6 and the contingency measures in place at the site, which would help mitigate potential threats from an emergency situation.

With regard to the objector's question of whether the site will become a public obligation, it should be noted, this is not a Superfund Site or an environmental cleanup project (as mentioned in Section 1 above). It is a privately owned permitted mining operation (in final reclamation) that is regulated by the Division as well as other state and federal agencies. The Division reviews and approves all aspects of the reclamation plan for a mining operation, and also requires the operator to maintain a financial warranty that is sufficient for completing reclamation of affected lands in accordance with the approved plan. At this time, there is no indication the site will become a public obligation. The operator is in the process of completing the last stages of surface reclamation at the site (all earthwork and initial seeding expected to be completed in 2023), and the Division holds a financial warranty that covers operating the water treatment plant for a 20 year period. The adequacy of the financial warranty is reassessed periodically throughout the life of the mine. These measures are protective of the state in the event of forfeiture.

The Division determined the reclamation plan submitted in AM-6 satisfied all applicable requirements of Rules 3 and 6.4.5. Additionally, the reclamation plan for the site has been updated as required by Condition #2 of SO-1 approval.

6. Reclamation Bond

- *CLL's financial warranty should be increased due to the inability of CLL to stabilize the mine pool chemistry with its current method of operation. (City of Arvada)*

- *The long-term operational costs to minimize harm to the prevailing hydrologic balance and avoid unauthorized discharges should be reevaluated. On page 44 of the amendment, there is a statement that the costs are "consistent with the remaining scope of work at the site". However, the current method of operating the site will require perpetual pumping and onsite treatment. This inconsistency of planning periods (limited scope vs perpetual) is very concerning. (City of Arvada)*

- *The estimate of cost of operating this site (Table L-1) appears unrealistically low, and it also does not reflect perpetual operation. We believe the operational costs need a more detailed review, and an increase in CLL's financial warranty to be set accordingly. (City of Arvada)*

- *It is difficult to compare Exhibit L Reclamation Costs with the current reclamation activities specifically related to the mine pool. The Reclamation Plan also does not include a schedule for completion of reclamation and water treatment plant operations, nor does CLL sufficiently describe the bases used for durations and quantities for specific reclamation activities. CLL should incorporate previously submitted material from Amendment 4 in the Reclamation Costs, and modify as needed based on water treatment plant operational costs and other data that have been collected. CLL should provide description and justification for all assumptions used for costing. (Denver Water)*

- *Based on the current data presented, there is no clear end date to cease pumping. CLL has also not established that the mine pool is physically or chemically stable. Because there is no timeline to cease pumping, no costs should be released for the "completion of 3 years of operation". Geosyntec does not believe that the current reclamation costs are enough to cover water treatment plant operations and mine pool treatments if the Division has to complete reclamation due to forfeiture. CLL should develop a long-term plan for operation of the mine pool pump and water treatment plant in the Reclamation Plan and establish a clear reclamation schedule and timeline. (Denver Water)*

The reclamation plan provided in Exhibit E of the application proposes to continue operating the water treatment plant seasonally for approximately 6 months or less to manage the mine pool. The plan also describes how lands disturbed in the valley (mainly from the alluvial valley excavation project) will be reclaimed. While portions of the surface reclamation plan for the site were approved in previous application/revision submittals, efforts were made in AM-6 to compile all relevant details for reclaiming the remaining disturbed lands in the valley. AM-6 does not propose an increase in affected lands.

According to the reclamation plan provided, remaining reclamation at the site includes: completing the alluvial valley excavation project (estimated to include the excavation of an additional 12,000 cy of contaminated soils, placement of these soils at the southeastern edge of the existing SWRP, placement of a 3 foot cap on this area, and revegetation of this area with a grass/wildflower mixture); removing some structures; reclaiming the 7.1 acres of lands disturbed by the alluvial valley excavation project (including grading these lands for positive drainage to the creek, retopsoiling these lands, and revegetating them with a grass/wildflower mixture in combination with various tree and shrub mixtures); continuing operation of the water treatment plant for a period of 20 years; continuing in-situ treatments of the mine pool for a period

of 10 years; and continuing monitoring at all approved surface water and groundwater monitoring locations for a period of 10 years.

Based on the reclamation plan proposed in AM-6, the Division determined the currently held financial warranty amount ($7,674,022.00) is sufficient for completing all surface reclamation at the site. However, the Division is still reviewing and calculating the financial warranty based on current information, and continues to evaluate costs for the long-term operation of the water treatment plant. This aspect of the proposed reclamation plan is not typical in that an end date (for mine pool management) is not specified. Therefore, the Division has determined that 10 and 20 year time periods for the reclamation bond are appropriate given the long-term reclamation plan proposed for managing the mine pool. Importantly, the operator agreed to bond for these time periods when they took over the permit in 2018 through SO-1 approval. The Division has no immediate concerns at this time regarding the adequacy of the currently held financial warranty amount. However, given the complex nature of the site and the inherent uncertainties involved with calculating costs for managing a mine pool for an extended period of time, this amount must be consistently reevaluated.

It should be noted, the Division's approval of AM-6 does not constitute an approval of the operator's bond estimate proposed in Exhibit L. Per Rule 6.4.12(1), the operator must provide all information necessary to calculate the costs of reclamation. The Division reviews the information provided and performs its own calculation based on the costs that would be incurred by the state in the event of forfeiture. If the operator seeks a reduction in the required financial warranty amount, this proposal must be submitted through a surety reduction request, which is a separate revision process. A reduction in the financial warranty amount cannot be approved through the amendment process.

As described above, the Division requires the operator to post a financial warranty that covers running the water treatment plant in accordance with the proposed reclamation plan for a period of 20 years. Considering the decreased reliance on the in-situ treatments to maintain chemical stability of the mine pool, the Division is requiring the operator to post a financial warranty that covers performing in-situ treatments for a period of 10 years. Costs for continuing the surface water and groundwater monitoring program for a period of 10 years must also be included. These liability timeframes and the long-term effectiveness of the water treatment system would be major considerations of any future request for a financial warranty reduction.

7. Other Agency Involvement

- *DRMS should consult with CDPHE and the USEPA, Region 8 on this amendment. CDPHE and USEPA need to have a role in oversight of this mine operation in the context of the Clean Water Act and state and federal regulatory authority related to radioactive contaminants. As part of this amendment, we request a meeting with DRMS, CDPHE, USEPA Region 8, Denver Water, and the City of Arvada to discuss the future of this site. (City of Arvada)*

The Division oversees all mining operations in the State of Colorado. The Division's Act and Rules were promulgated to regulate mining operations and the reclamation of lands affected by these operations. While other agencies on the local, state, and federal level also have regulations pertaining to mining

operations, all mining operations conducted in this state require a permit from the Division including a detailed reclamation plan that meets the requirements of the Act and Rules. The Division also requires an operator to submit a performance warranty and a financial warranty for completing reclamation of a site in accordance with the approved plan, in the event of forfeiture.

Notice of AM-6 was sent to multiple local, state, and federal agencies in accordance with the Act and Rules. While the U.S. Environmental Protection Agency (USEPA) is not one of the agencies noticed for mine permit applications, notice of AM-6 was sent to the Air Pollution Control Division (APCD) and the Water Quality Control Division (WQCD) of the Colorado Department of Public Health and Environment (CDPHE). The Division did not receive any comments on AM-6 from CDPHE.

The operator maintains various permits, licenses, and approvals for the operation from different agencies, as listed in Exhibit M of the application. This includes a discharge permit for the water treatment plant, which is regulated by the CDPHE, WQCD in accordance with the Clean Water Act. The operator also maintains a radioactive materials license for the ion-exchange water treatment system and alluvial excavation project, which is regulated by the CDPHE Hazardous Materials and Waste Management Division (HMWMD), Radiation Control Program (RCP). Additionally, the operator has obtained a Class V Injection Well Rule Authorization for mine backfilling and returning brine from the water treatment plant to the mine workings, which was issued by the USEPA Region 8 Underground Injection Control Program (UICP). Therefore, the CDPHE and the USEPA currently have regulatory oversight of aspects of the reclamation of the Schwartzwalder Mine.

The Division would also like to note that an update on site conditions and activities are provided to the CDPHE, WQCD every year in accordance with Senate Bill 181 (SB 89-181).

Given the information provided above, the Division does not believe it is appropriate or necessary to meet with the CDPHE or the USEPA in order to approve AM-6. The Division has met with the City of Arvada multiple times over the years to discuss the site, and will continue to notice both the City of Arvada and Denver Water of any amendments or surety reduction requests submitted for the site.

Non-Jurisdictional Issues

A. <u>Concerns regarding the tracer test performed on the mine pool in 2020:</u>

- *The data do not prove CLL's conclusions of the tracer test that the mine pool is fully mixed. The water in the mine pool (i.e., the various levels of saturated laterals) may not be thoroughly mixed; the tracer may have transported downward. The bulk of the 25 pounds of injected rhodamine tracer (with a density 30% greater than water), may have sunk to the bottom of Shaft #2 (~2,000 ft deep) and may not have been accessible by pumping from the Jeffrey Shaft (1,100 ft deep). Additional sampling and analysis of tracer dyes in bedrock and alluvial groundwater and surface water from Ralston Creek would provide more informative data indicating that no mine pool water is leaving the mine. (Denver Water)*

In Exhibit E and Appendix 2 of the application, the operator provided information on a two-chemical tracer test that was conducted in the mine in 2020 to evaluate the system hydraulics and the degree at which

organic carbon placed underground would disperse within the mine workings to facilitate in-situ treatment. While the results of this study did not provide all the information sought by the operator, the results do appear to support the operator's claim that, at least under the current operational conditions (mine pool kept 150 feet below the Steve Level), the mine is a hydrologic sink (i.e., mine water is not exiting the mine).

The tracer test was not required by the mine permit. However, because the test results were discussed in AM-6, the Division had some questions regarding this test during the application review period. The operator answered these questions to the Division's satisfaction.

It should be noted, the operator's demonstration that the mine pool is chemically and physically stable is not dependent on the results of the tracer test.

Attachments:

A – Revised Approval of SO-01 with Conditions, Transfer of Permit for Colorado Legacy Land, LLC as Successor Operator, Schwartzwalder Mine, Permit No. M-1977-300, dated February 20, 2018.

B – Modification of Findings of Fact, Conclusions of Law and Order, Cotter Corporation File No. M-1977-300, dated October 4, 2012.

C – Figure E-4 Groundwater Monitoring Locations, dated October 2020 (approved with AM-5).

D – Figure E-4 Bedrock Groundwater Contour Map, dated May 2022 (submitted with AM-6).

ATTACHMENT A

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

1313 Sherman Street, Room 215
Denver, CO 80203

February 20, 2018

Paul Newman
Colorado Legacy Land LLC
4601 DTC Blvd., Suite 130
Denver, CO 80231

RE: Revised Approval of SO-01 with Conditions, Transfer of Permit for Colorado Legacy Land, LLC as Successor Operator, Schwartzwalder Mine, Permit No. M-1977-300

Dear Mr. Newman:

On February 16, 2018, the Division of Reclamation, Mining and Safety approved the transfer of permit and succession of operator from Cotter Corporation to Colorado Legacy Land, LLC ("CLL") for the Schwartzwalder Mine, Permit No. M-1977-300, with conditions. The conditions for approval are as follows:

1. The new estimated liability amount of $8,900,000.00 for the Schwartzwalder Mine exceeds the $4,339,003.39 bond currently held. Please submit financial warranty in the amount of $8,900,000.00. SO-01 will not be fully approved until the Division has received and approved a properly executed financial warranty not less than $8,900,000.00. Questions regarding surety submittal should be directed to Financial Assurance Specialist, Barbara Coria, phone (303) 866-3567, extension 8148, or by email at Barbara.Coria@state.co.us. The financial warranty will be maintained at a level which reflects the current cost of reclamation, which includes all measures taken to assure the protection of water resources. Therefore, the financial warranty, currently set at $8,900,000.00, is subject to adjustment and may be increased or reduced as necessary to ensure the completion of reclamation in the event of permit revocation and forfeiture of financial warranty.

2. CLL shall amend Permit No. M-1977-300, pursuant to Rules 1.1(6) and 1.10, affirming the permanent cessation of mining activities, provide a conceptual site model, provide a plan addressing the physical and chemical stabilization of the mine pool and specifically addressing the concentrations of dissolved uranium and other constituents as required under the conditions of the permit, and updating the reclamation and environmental protection plans (the "Amendment"). In addition to the standard public notice requirements, CLL shall provide timely notice of the Amendment, which shall include the conceptual model and all underlying assumptions and data used in the model, to Denver Water and City of Arvada.

3. Subsequent to the Division's review and approval of the permit Amendment described above, CLL may further modify the permit through the Technical Revision or Amendment process, addressing the long term cost of operating of the water treatment plant and managing the mine pool. The Division anticipates such demonstration will be based on

three consecutive years of data which verify the physical and chemical stabilization of the mine pool. Upon such demonstration CLL may request a reduction in financial warranty in accordance with Rules and Regulations for that portion of the financial warranty attributable to the water treatment and management of the mine pool. In addition to the standard public notice requirements, CLL shall provide timely notice of any/all requests for reduction of financial warranty to Denver Water and City of Arvada.

4. CLL will share its monthly and quarterly water quality monitoring sampling data with Denver Water and the City of Arvada and allow Denver Water and the City of Arvada access to the site sample taps to collect samples.

With the acceptance of the above four conditions, CLL is now the permitted operator of the Schwartzwalder Mine, and as such is responsible for all provisions in M-1977-300, as well as those specified in the Rules and Regulations. Cotter Corporation is relieved of all responsibilities concerning this operation.

Please Note:

- All of the application materials, as amended and supplemented, are an integral part of your permit. They have been incorporated into the permit by reference. We presume you have a copy of all these materials; therefore, none have been enclosed with this mailing. We suggest you keep a copy of the permit and the permit application at the mining operation as a reference for operation personnel, to help ensure compliance with the terms of the permit.
- Changes in the mining and reclamation operations which differ from those described in the permit may require a modification to the permit. We suggest consulting the Rules and Regulations and/or contacting us to determine if a modification to the permit is necessary. Rule 1.10 pertains to Amendments, Rule 1.9 to Technical Revisions, and Rule 1.11 to Conversions.
- On your permit anniversary date each year, you must submit an annual fee and annual report to us. Please consult the Rules, Act, and your permit for specific requirements. Annual reports, maps and fees must be filed electronically using the Division's ePermitting portal. If you have not done so already, you will need to sign up for electronic filing of your annual report, map, and fee by visiting the Division's web site (http://mining.state.co.us) clicking on "ePermitting" on the home page, and then clicking on the "Sign up for Minerals Annual Report Electronic Filing" link.

The transfer of this permit does not result in the transfer of any other permits or licenses, with this Division, the State, or Federal Agency, which might be associated with this operation.

If you have any questions please contact me.

Sincerely,

Anthony J. Waldron
Minerals Program Supervisor

ATTACHMENT B STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY
Department of Natural Resources

1313 Sherman St., Room 215
Denver, Colorado 80203
Phone: (303) 866-3567
FAX: (303) 832-8106

TAK, AJW

COLORADO DIVISION OF RECLAMATION MINING & SAFETY

October 4, 2012

Cotter Corporation, N.S.L.
P.O. Box 1750
Canon City, CO 81215

Re: Modification of Findings of Fact, Conclusions of Law and Order, Cotter Corporation
File No. M-1977-300

On September 18, 2012 the Mined Land Reclamation Board signed the enclosed Board Order for the above captioned operation. We strongly advise that you read this document carefully since it may contain provisions which must be satisfied by specific dates to avoid future Board actions.

Sincerely,

Sitira Pope

Sitira Pope
Secretary to the Board

Enclosure(s)

CERTIFIED MAIL NO.
7011 3500 0002 9607 8265

Cc's
John Roberts
Jeff Fugate
Charlotte L. Neitzel

BEFORE THE MINED LAND RECLAMATION BOARD
STATE OF COLORADO

IN THE MATTER OF COTTER CORPORATION, N.S.L., SCHWARTZWALDER MINE, PERMIT No. M-1977-300

MODIFICATION OF FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER, MV-2010-018, AND VACATING FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER, MV-2010-030, COTTER CORPORATION (N.S.L.), SCHWARTZWALDER MINE, M-1977-300.

THIS MATTER came before the Mined Land Reclamation Board ("Board") on September 12, 2012, in Denver, Colorado to consider the Agreement between the Colorado Division of Reclamation, Mining and Safety ("DRMS") and Cotter Corporation (N.S.L.) ("Cotter") ("Agreement") (attached as Attachment 1).

The Board, having considered the Agreement, states that it agrees with the provisions of the Agreement, and orders the following:

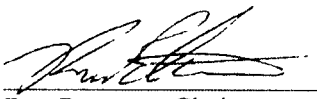
1. It modifies the August 2010 Order, consistent with paragraphs one (1) and three (3) of the Agreement.

2. It vacates the December 2010 Order, consistent with paragraph two (2) of the Agreement.

3. It agrees to file the motion jointly in Denver District Court, requesting the release of $55,000 plus any accumulated interest on $55,000 in the Registry to the Board, and $39,000 plus any accumulated interest on $39,000 in the Registry to Cotter, consistent with paragraph three (3) of the Agreement.

DONE AND ORDERED this 18 day of September 2012.

FOR THE COLORADO MINED LAND RECLAMATION BOARD



Ron Peterson, Chair

ATTACHMENT 1

BEFORE THE MINED LAND RECLAMATION BOARD
STATE OF COLORADO

IN THE MATTER OF COTTER CORPORATION (N.S.L.), SCHWARTZWALDER MINE, PERMIT No. M-1977-300

AGREEMENT BETWEEN THE COLORADO DIVISION OF RECLAMATION, MINING AND SAFETY AND COTTER CORPORATION (N.S.L.)

THIS AGREEMENT ("Agreement") is made and entered into by and between the Colorado Division of Reclamation, Mining and Safety ("DRMS") and Cotter Corporation (N.S.L.) ("Cotter") (jointly as "Parties"). Undersigned counsel, on behalf of their respective Parties, submit this Agreement for consideration by the Mined Land Reclamation Board ("Board"). In support of their joint stipulation, DRMS and Cotter state the following:

Recitals

A. On August 11, 2010, the Board issued Findings of Fact, Conclusions of Law, and Order, In the Matter of Cotter Corporation's Possible Violations, Cease and Desist Order, Corrective Actions, and Civil Penalties, File No. M-1977-300, relating to Notice of Violation ("NOV") No. MV-2010-018 ("August 2010 Order"). The August 2010 Order required Cotter to:

> Reinitiate mine dewatering and water discharge treatment sufficient to bring the mine water table to a level at least 500 feet below the Steve Level, and sufficient to reestablish a hydraulic gradient away from Ralston Creek. Implementation must occur as soon as possible, but no later than August 31, 2010.

August 2010 Order at 9, ¶ 2. This provision will be referred to as the "500-Foot Dewatering Requirement." The August 2010 Order further required Cotter to:

> Provide financial warranty, pursuant to Hard Rock Rule 4.2.1(4), sufficient to assure the protection of water resources, including costs to cover necessary water quality protection, treatment and monitoring.

Id. at 9, ¶ 3. The portion of this provision relating to the 500-Foot Dewatering Requirement will be referred to as the "500-Foot Dewatering Financial Assurance Requirement." The August 2010 Order also required Cotter to pay $55,000 in penalties with all but $2,500 suspended if Cotter complied with the August 2010 Order by the deadline.

B. On December 9, 2010, the Board issued Findings of Fact, Conclusions of Law, and Order, In the Matter of Cotter Corporation's Possible Violation, Cease and Desist Order, Corrective Actions and Civil Penalties for Failure to Comply with the Conditions of an Order, Permit, or Regulation, File No. M-1977-300, relating to NOV No. MV-2010-030 ("December 2010 Order"). The December 2010 Order stated that Cotter had failed to comply with the 500-

Foot Dewatering Requirement and the 500-Foot Dewatering Financial Assurance Requirement, and failed to pay the $55,000 penalty. The December 2010 Order issued a cease and desist order, made due the suspended portion of the civil penalty previously assessed of $55,000, and assessed an additional penalty of $39,000.

C. Cotter filed two cases in Denver District Court against the Board and DRMS, contesting the 500-Foot Dewatering Requirement, the 500-Foot Dewatering Financial Assurance Requirement, and the penalties in the August 2010 Order (Case Number 2010 CV 7609) and all aspects of the December 2010 Order (Case Number 2011 CV 170). Pursuant to a Denver District Court Order, dated September 30, 2011, and a Supplemental Order, dated April 9, 2012, the Denver District Court upheld the August 2010 Order and the December 2010 Order ("District Court Orders"). Cotter timely appealed the District Court Orders to the Colorado Court of Appeals, which is pending as Case Number 2012 CA 763 ("Court of Appeals Case").

D. On February 3, 2011, Cotter filed an Unopposed Motion to Allow Deposit of Funds With the Registry of the Court, allowing the deposit of $94,000 (the $55,000 and the $39,000 penalties) established in the December 2010 Order in the Denver District Court registry ("Registry"). The Motion was granted on February 7, 2011, and Cotter deposited $94,000 in the Registry on February 11, 2011.

E. The Parties desire to bring about an amicable resolution of the matters set forth above, as well as all claims or alleged claims that could have been raised or asserted between the Parties in connection with the matters set forth above, and to resolve the same without resorting to further legal action and expense.

F. On May 1, 2012, Cotter filed an Application, Amendment 4, Mine Permit M-1977-300, Schwartzwalder Mine, that includes an Environmental Protection Plan for the Schwartzwalder Mine site ("Amendment 4"), which is under review by DRMS.

G. DRMS has new information to support a modification of the 500-Foot Dewatering Requirement to a requirement that dewatering be sufficient to bring the mine water table to a level 150 feet below the Steve Level. This new information includes, but is not limited to, technical investigations and additional monitoring data that have been collected at the Schwartzwalder Mine site. The Parties believe that dewatering to the level of 150 feet below the Steve Level will (i) reestablish a hydraulic gradient away from Ralston Creek in the permit area, and (ii) reduce the exposure of wall rock to oxygen in order to minimize uranium oxidation in the workings.

H. In light of the foregoing, the Parties believe that the 500-Foot Dewatering Requirement should be changed to a requirement that dewatering be sufficient to bring the mine water table to a level 150 feet below the Steve Level.

NOW THEREFORE, for and in consideration of the mutual promises and undertakings set forth herein, the Parties agree as follows:

Agreement

1. The Parties will ask the Board to modify the August 2010 Order so that (i) the words on page nine (9), paragraph two (2), stating "at least 500 feet below the Steve Level, and sufficient to reestablish a hydraulic gradient away from Ralston Creek" be replaced with "150 feet below the Steve Level", (ii) the words on page nine (9), paragraph two (2), stating "but no later than August 31, 2010" be replaced with "but no later than March 31, 2013" and (iii) the 500-Foot Dewatering Financial Assurance Requirement, which is a portion of page nine (9), paragraph three (3), be revised to read, "Through the Amendment 4 administrative process, the Operator will provide financial warranty, pursuant to Hard Rock Rule 4.2.1(4), sufficient to assure the protection of water resources, including costs to cover necessary water quality protection, treatment and monitoring." Additional details of dewatering to 150 feet below the Steve Level, and specific details regarding the financial warranty requirement to dewater to 150 feet below the Steve Level, will be addressed in the Amendment 4 administrative process.

2. The Parties will ask the Board to vacate the December 2010 Order, including the civil penalties thereunder, resulting in Cotter no longer being considered in violation for failure to comply with the August 2010 Order covering the Schwartzwalder Mine site.

3. The Parties will ask the Board to modify the August 2010 Order by deleting the final paragraph on page nine (9) thereof, which states as follows:

> The Operator is ordered to pay a civil penalty for 55 days of violation at $1,000 per day for a total civil penalty of $55,000 with all but $2,500 suspended if the Operator complies with this Order within the associated deadlines. The civil penalty shall be submitted within 30 days of this Order's signature date.

The Parties will ask the Board to replace the deleted paragraph with the following sentence: "The Operator is ordered to pay a civil penalty for 55 days of violation at $1,000 per day for a total civil penalty of $55,000." The Parties and the Board agree to file a motion jointly with the Denver District Court, requesting the release of $55,000 plus any accumulated interest on $55,000 in the Registry to the Board, which shall satisfy the obligation to pay the civil penalty of $55,000, and $39,000 plus any accumulated interest on $39,000 from the Registry to Cotter.

4. By entering into this Agreement, the Parties agree that nothing in this Agreement is to be considered, construed or interpreted as an admission with respect to the Findings of Fact and Conclusions of Law in the August 2010 Order, with respect to the Findings of Fact, Conclusions of Law, or the validity or invalidity of the December 2010 Order, or with respect to the Findings of Fact, Conclusions or Law, or decisions in the District Court Orders.

5. This Agreement, upon signing by DRMS and Cotter, is contingent on the Board's modification of the August 2010 Order (as requested in paragraphs 1 and 3 above), the Board's vacating the December 2010 Order (as requested in paragraph 2 above), and the Board's agreement with the remaining terms of this Agreement (collectively, "Board Action"). The Board Action is contingent on dismissal of the Court of Appeals Case.

6. The Parties agree that, upon the Board Action at a Board meeting, as described in Attachment 1, an agreement pursuant to Rule 42(b) of the Colorado Appellate Rules will be filed

by the Parties and the Board dismissing the Court of Appeals Case within three (3) business days of the vote at the Board meeting. The Board will issue a written order in the form set forth in Attachment 1 within three (3) business days of the Court of Appeals' dismissal of the Court of Appeals Case, which order will become effective upon mailing.

7. This Agreement shall be enforced in accordance with the laws of the State of Colorado.

8. Each person or entity executing this Agreement represents that he/she/it has been authorized by all necessary corporate or other actions to enter into and execute this Agreement.

9. This Agreement may be signed in multiple counterparts and each counterpart, when taken with all executed counterparts, shall constitute a binding agreement upon the Parties. A signed counterpart may be a facsimile or electronic transmission of the original Agreement.

IN WITNESS WHEREOF, this Agreement has been executed effective as to Cotter and DRMS on the last date of signature below.

For the Division of Reclamation,
Mining and Safety

Dated: September 12, 2012

Jeff M. Fugate
First Assistant Attorney General
Natural Resources and
Environment Section
1525 Sherman Street
Denver, CO 80203
Jeff.Fugate@state.co.us

For Cotter Corporation (N.S.L.)

Dated: September 12, 2012

Charlotte L. Neitzel
Robert Tuchman
Bryan Cave HRO
1700 Lincoln St., Suite 4100
Denver, Colorado 80203-4541
charlotte.neitzel@bryancave.com

CERTIFICATE OF SERVICE

This is to certify that I have duly served the within FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER upon all parties herein by depositing copies of same in the United States mail, first-class postage prepaid, at Denver, Colorado, this 9th day of October 2012, addressed as follows:

Cotter Corporation, N.S.L
P.O. Box 1750
Canon City, CO 81215

By inter-office or electronic mail to:

Jeff Fugate
First Assistant Attorney General
Office of the Attorney General
1525 Sherman Street, 7th Floor
Denver, CO 80203

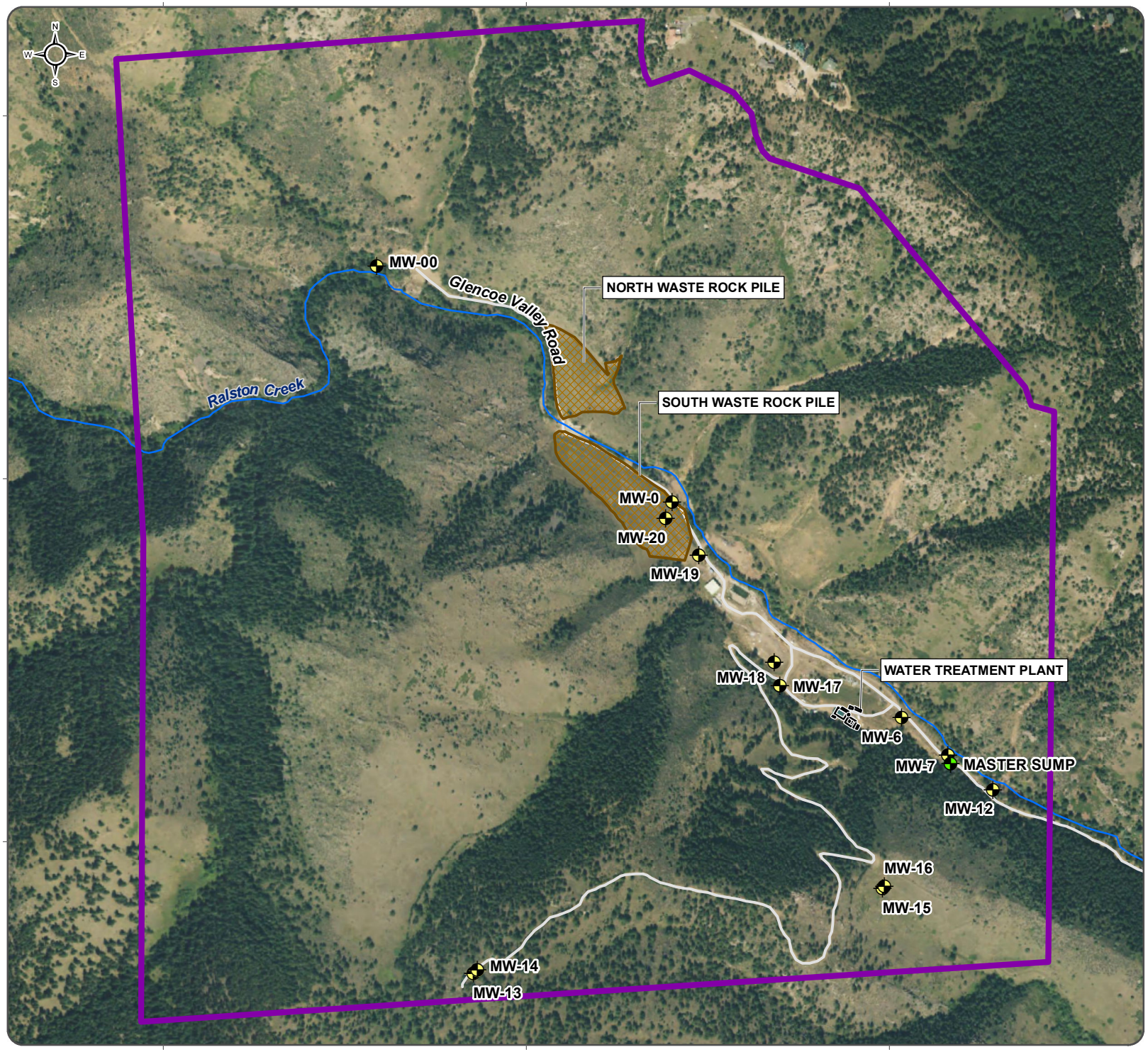
Charlotte L. Neitzel HRO
1700 Lincoln St., Ste. 4100
Denver, CO 80203

By intra-office or electronic mail to:

John J. Roberts
Senior Assistant Attorney General
Office of the Attorney General
1525 Sherman Street, 7th Floor
Denver, CO 80203

Sitia Pope

ATTACHMENT C



COLORADO LEGACY LAND
SCHWARTZWALDER MINE

FIGURE E-4

GROUNDWATER MONITORING LOCATIONS

OCTOBER 2020

COLORADO LEGACY LAND

- GW Monitoring Well
- Pumpback Sump
- CLL Property Boundary
- Waste Rock Dump
- Existing Mine Feature Footprint
- Glencoe Valley Road
- Ralston Creek

1:9,000 *when printed on 8x11 inch paper*

0 250 500 750 1,000 Feet

ENSERO solutions

Satellite imagery obtained from ArcGIS on services.arcgisonline.com on October 2020

Datum: NAD 1983 (CORS96) StatePlane Colorado Central FIPS 0502 (US Feet)

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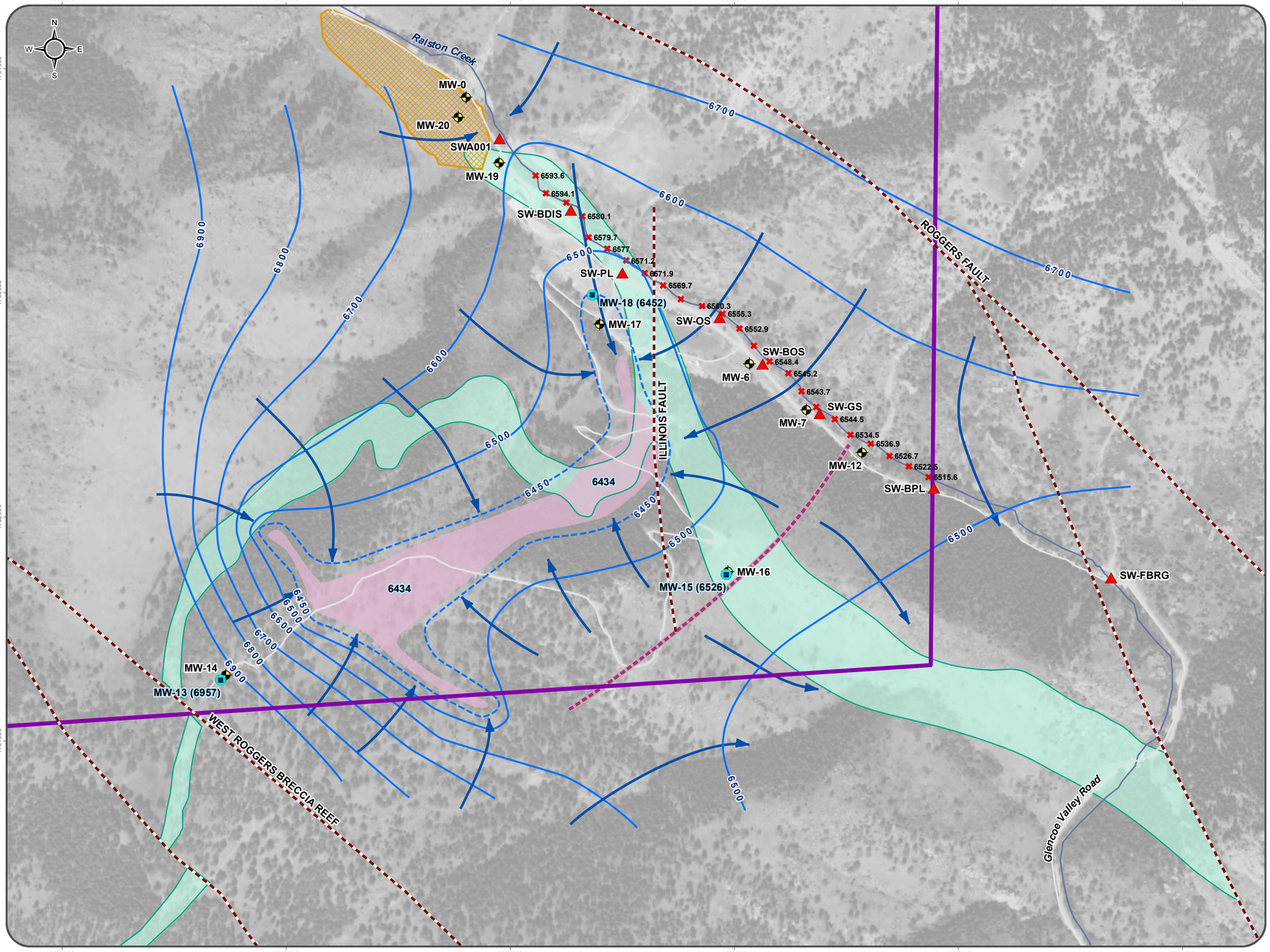
ATTACHMENT D



COLORADO LEGACY LAND
SCHWARTZWALDER MINE

FIGURE E-4

BEDROCK GROUNDWATER CONTOUR MAP

MAY 2022

COLORADO LEGACY LAND

- (6526) Deep Bedrock Monitoring Well with Measured Q2-2020 Water Level (ft msl)
- Alluvial or Shallow Bedrock Monitoring Well
- Surface Water Quality Monitoring Station
- 100 foot Groundwater Contour (ft msl)
- 50 foot Groundwater Contour (ft msl)
- Groundwater Flow Direction
- Groundwater Divide
- Fault
- Ralston Creek Elevation Point (ft msl)
- Underground Workings
- Schwartz Trend
- Waste Rock Dump
- CLL Property Boundary
- Ralston Creek

1 inch = 420 feet

0 250 500 750 ft

ENSERO solutions

Satellite imagery obtained from ESRI ArcGIS map service https://services.arcgisonline.com/ArcGIS/rest/service on May 09 2022.

Datum: NAD_1983_StatePlane_Colorado_Central_FIPS_0502_Feet

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(Last edited by: amatlashevska,2022-05-09/11:31 AM)