State of Utah

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March 31, 2022

Sandra Ross, Site Manager
Rio Algom Mining, LLC
P.O. Box 218
Grants, NM 87020

RE: Summary of Review Findings and Confirmatory Actions Regarding the Rio Algom Mining, LLC Lisbon Valley Facility October 29, 2021, Hydrogeological Supplemental Site Assessment Phase 4; Tailings Cover Performance Model and Calculations and; Background Groundwater Quality Report
Radioactive Material License Number UT 1900481

Dear Ms. Ross:

The Division of Waste Management and Radiation Control (Division) received the following Rio Algom Mining LLC (RAML) documents regarding geological, geotechnical, hydrogeological, and engineering studies and findings at the Lisbon Uranium Mill Facility (all documents dated October 29, 2021, and Division received and stamped paper copies on November 2, 2021):

a. Hydrogeological Supplemental Site Assessment Phase 4; Volume I: Text, Figures, and Tables
b. Hydrogeological Supplemental Site Assessment Phase 4; Volume II: Appendices 1A through 2D.4
c. Hydrogeological Supplemental Site Assessment Phase 4; Volume III: Appendices 2D.5 through 7A
d. Background Groundwater Quality Report
e. Natural Recharge and Water Balance Modeling Report: Performance Assessment of Upper and Lower Tailing Impoundment Covers

The submitted documents pertain to the RAML Hydrogeological Supplemental Site Assessment Phase 4 (HSSA4) as agreed upon by RAM and the Division and formalized and regulated through a July 30, 2019, duly executed stipulation and consent agreement (SCA).

A previous August 30, 2018, RAML HSSA Report and Tailings Impoundments Water Balance Modeling Report submission was reviewed by the Division. The previous report identified additional information needed for completion of data collection and interpretation for facility conceptual modeling, numerical groundwater fate and transport modeling, and the development of proposed alternate concentration limits

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(ACLs) and target action levels (TALs) based on modeled predictions of constituent concentration breakthrough curves. The Division agreed that the additional investigation was needed to fill data gaps associated with the conceptual site model and boundary conditions, as well as additional study to better characterize the percolation values and source term evaluation of the tailing impoundments. These additional items were formalized in a Division Request for Additional Information (RAI) dated April 17, 2019.

The RAI specifically identified additional investigation needs regarding:

1. Better characterization of long-term percolation rates values for the current cover and proposed improvements,
2. Further evaluation regarding the site conceptual model including:
    a. Further evaluation of the Lisbon Valley Fault (LVF) influence on groundwater flow to the north and northwest of the Site,
    b. Further evaluation of potential localized flow conditions associated with the LVF and subsidiary faulting,
    c. Further evaluation of surface water groundwater interaction at the northwest area of the facility,
    d. Further evaluation of local pumping on groundwater flow at the northern long-term surveillance monitoring (LTSM) boundary,
    e. Further evaluation of natural impacts on groundwater uranium concentrations,
    f. Further evaluation regarding tailing impoundment leakage rates,
    g. All other finding and additional evaluation needs per Section 7.3 of the previous HSSA.
3. Additional information regarding potential passive treatment for contaminants in the northern plume and an evaluation of contaminant transport with and without potential treatment,
4. Include trend well(s) in areas adjacent to the Burro Canyon Anticline (BCA) in the southern plume in the area east of trend well RL-1 to evaluate groundwater flow and support model assumptions,
5. A plan and time schedule for revised evaluation of background groundwater conditions and an updated statistical evaluation including proposed background conditions, and,
6. A plan and schedule for evaluation and proposal of expanded constituents of concern to be included for groundwater monitoring.

A discussion of the HSSA4 evaluation and findings regarding the RAI and CAL is below. Prior to submitting the HSSA4 and associated documents, two web meetings amongst the Division, RAML and RAML consultants were held including:

1. An August 25, 2021, Web Meeting amongst the Division, RAML and INTERA to generally discuss the revised conceptual site model based, HSSA4 results, cover performance modeling, and groundwater numeric model, and,
2. A follow up web meeting amongst the Division, RAML and INTERA on September 13, 2021, in which the HSSA4 and Tailing Impoundments Water Balance Report were presented and discussed. The following agenda items were discussed/presented by RAML and INTERA:
    a. DWMRC Feedback from the August 25 Meeting
    b. Engineering Work Streams Part 2: Water Balance Performance Assessment
    c. Engineering and the HSSA4 Big Picture

d. Gamma Survey Results
e. Closing and Action Items Recap

Additionally, a RAML May 29, 2020, Draft Groundwater Background Report for the facility was reviewed by the Division and a web meeting was held to discuss the findings of the review on March 18, 2021, with continuing discussion on August 12, 2021. A formal letter regarding the Division review was sent to RAML, letter dated March 22, 2021. The letter summarized the Division review findings of the draft background report and provided conclusions and recommendations to be considered for the updated report.

Specifically, the Division found that the outlined process for determination of background vs. plume impacted groundwater and statistical evaluation measures appeared appropriate but recommended the addition of a process flow chart to clarify the process for screening background wells and the statistical evaluation and background calculation steps.

HSSA Phase 4 Report Conformance with the July 30, 2019, Stipulation and Consent Agreement

To aid review of the HSSA4 report, the outlined objectives of the SCA were used as a guide for inclusion in this letter. The Division notes that the RAML HSSA4 and associated documents contain a large record of RAML data and evaluation of the facility tailings, geology and groundwater which are not specifically included in this letter. The Division recognizes the record of data, interpretations and findings submitted.

The SCA "*Agreement*" section, lists specific items to be addressed in accordance with the RAML June 21, 2019, Phase 4 work plan. Per Division review the following summary of findings regarding these items per the HSSA4 documents is discussed below. The SCA agreements are listed as items a through k and are pasted into the letter for ease of reference:

a. "Tailings Water Balance.

i. Natural Recharge Field and Laboratory Evaluation.

ii. Impoundment Covers Field Evaluation.

iii. Calculation of Natural Recharge rate and HELP Modeling of Natural Soil Profile.

iv. Refined HELP Modeling of Design (Hypothetical) UTI and LTI Covers

v. *Natural Recharge and Water Balance Modeling Report*."

Item a. Division Review Findings: This agreement was addressed in the RAML Natural Recharge and Water Balance Modeling Report[4] which addresses the RAML identified additional data needs since the previous tailing model version.

Natural recharge is addressed in the Report Section 4.0 which discusses tests pits (four shallow pits) and associated soil moisture sensor (SMS) testing which were used for the field investigation; and five borings which were packaged and sent to Stephens and Associates for laboratory testing. Laboratory analyses are

included with the report. As summarized in the Report, additional field evaluation of the covers was conducted to enhance source data for the recharge and water balance model.

HELP modeling was conducted as required by Item a with the result, using improved profile data from field and laboratory tests, that recharge through the impoundment covers (UTI and LTI) is equal to or greater than natural recharge. Percolation values across the cover were determined to range from 0.5 to 5 in/yr. with a recommended percolation value for groundwater modeling of 1.6 in/yr. Conclusions from the previous modeling regarding the existing rock mulch on the cover surface acting as a barrier for evaporation from the cover and increasing percolation volumes.

"b. Surface Water – Groundwater Interactions.

i. Piezometer and Stream Gage Installation.

ii. Stream Discharge Measurements.

iii. Seep and Spring Geochemistry

iv. West Coyote Wash Area Well Installation and Coring"

Item b. Division Review Findings: Surface Water – Groundwater interactions are included in Part 2.2 of the HSSA4. Descriptions of stream discharge measurements are included in Part 2.2.1 including descriptions of slug tracer measurements which evaluated minimal gain/loss instream. Piezometer and stream gauges installed along West Coyote Wash are depicted on Figure 2.3 and installation details in Volume II Appendix 2C and photographs of installation Appendix 2C.1.

The additional investigation and stream measurements of West Coyote Wash supports findings of "*little to no*" surface water/groundwater interactions (shallow alluvial groundwater).

"c. *Evaluation of Fault Influence on Groundwater Flow.*

i. Groundwater Flow near the Lisbon Valley Fault.

ii. Characterization of Subsidiary Faults."

Item c. Division Review Findings: Section 3.0 of the HSSA4 "*Hydrogeologic Evaluation*" includes discussion of the data gaps regarding groundwater flow near the Lisbon Valley Fault (LVF). The Section also provides a wider discussion of the hydrogeology across the site and clarified interpretations of ground water flow around the Lisbon Valley Anticline to clarify findings of fine-grained materials and artesian conditions in several of the Burro Canyon Aquifer (BCA) and LVF monitoring locations. Discussion of the formation contact between the Burro Canyon and the Brushy Basin formations is discussed and it was clarified through site boring data and logs that the contact was misinterpreted in several of the previously drilled groundwater monitoring locations.

Per HSSA4 investigations (Discussion in the HSSA4 Section 3.1.2 and Figure 3.8), one antithetic fault was identified north of the LTSM boundary ("Spring Fault") and two synthetic faults near the LVF (MW-

126 Fault and MW-125 Fault) were identified. The Spring Fault was identified based on a difference of groundwater elevation between MW-130 and MW-139 and acts as a barrier to lateral flow in the area. The Spring Fault is also identified in the HSS4 as causing ephemeral spring flow on the easter side of the fault (ephemeral springs CWS-1 and CWS-2). This is likewise the case for the two synthetic faults near the LVF.

As part of the clarification of BCA flow in the northwest area it was clarified that artesian conditions at monitoring well MW-134D are caused by an interbedding of fine-grained material acing as a confining layer (aquitard) in the BCA, creating two separated zones (shallow and deep) in the BCA aquifer. The two zones are not strongly hydraulically connected as evidenced by the artesian conditions in the deeper zone. Investigation of the northwest area of the site, area around MW-132 and MW-133, hydraulic responses in the two shallow screened wells were noted during hydraulic testing, indicating that the fault is not acting as a barrier for shallow groundwater flow in this area.

Per Section 3.3.2 of the HSSA4 (Hydraulic Flow-Pathways) regarding shallow groundwater pathways in the northwest area: "*At MW-133S, shallow zone BCA groundwater flows across the LVF into the Navajo aquifer and alluvium toward MW-132S and MW-132ALL…Groundwater in the Navajo aquifer is likely flowing to the west in the general dip direction of the Navajo sandstone*." Groundwater in the deep zone of the BCA is described to continue to flow to the northwest parallel to the LVF and is conceptualized to discharge to West Coyote Wash and West Coyote Creek. Structural features of the fault are also conceptualized to cause groundwater to daylight at the surface "*such as at Rattlesnake Spring and along West Coyote Wash further north*." The HSSA4 concludes that the additional information provides for better definition of flow along the LVF due to identification of subsidiary faults and BCA differential hydraulic conductivity layers.

"d. Water Quality in Groundwater Monitoring Well MW-124.

i. Leaching of MW-124 Drill Cuttings.

ii. Coring Near MW-124."

Item d. Division Review Findings: Per HSSA4 findings of leaching of core samples from C-124 and MW-124 it was determined that "*some uranium can be mobilized from the Burro Canyon in the area of MW-124"* (Section 4.5.1), however, leaching would not account for concentrations at the well. The source of uranium in MW-124 is from the north uranium plume as is further evidenced by the HSSA4 iso-concentration map (Figure 4.6). Figure 4.6 shows the northern plume area extending outside of the site long term surveillance monitoring boundary and extending to MW-124 on the LTSM boundary. Therefore, the site plume has migrated outside of previously analyzed areas at concentrations higher that the uranium groundwater quality standard and will require additional site activities to monitor, control and prevent further migration.

"e. Stock Well Pumping Impacts.

i. Coordinate with the stock well owner.

ii. Proposed installation of a water level logger and flow meter at the stock well.

iii. Installation of a monitoring well near the stock well at the same depth as the stock well for aquifer characterization."

Item e. Division Review Findings: Issues related to stock well pumping impacts are discussed in Section 3.2.2 of the HSSA4. The previous HSSA determined that pumping from stock watering well SW-1 could impact groundwater flow pathways in the northwest area pf the site. Based on this the requirements of item e. were included in the SCA per RAML's outlined objective. Per the HSSA4 Report permission was not granted to install water level logger or flow meter at SW-1. Water level loggers were installed on nearby wells MW-131ALL and MW-131S. RAML reports that it does not appear that SW-1 has been pumped since removal of the power source in 2018 and thus no evaluation of aquifer impacts due to pumping could be assessed. Investigation of this objective should be ongoing to help inform potential impacts of groundwater pumping.

"f. Groundwater Treatment Options.

i. Update and expand on previously evaluated treatment options utilizing updated site conditions.

ii. Consider site conditions, design and installation practicality, and cost-benefit analysis."

Item f. Division Review Findings: The HSSA4 provides an evaluation of treatment options in Section 7.0 and a summary is included in Table 7.1. The Division noted that the continued use of monitored natural attenuation (MNA) only has not conformed with the NRC approved ACLs and has not contained migration of pollutants within the long-term monitoring boundary. Based on this the HSSA4 provides a general overview of potential treatment options. The HSSA provides only an overview of potential options and states that the options will be investigated as part of a planned work plan to be implemented for a facility "corrective action plan." Future analysis will include evaluation criteria such as; 1) The sustainability of treatment options, 2) Fulfillment of permitting requirements and; 3) The acceptance of potential treatment options by other agencies (including the US Department of Energy).

The initial screening for treatment option notes advantages and limitations at the site and notes that the use of treatment options will be considered in conjunction with other options and institutional controls. It is also discussed that various treatment options were attempted to control the tailing sources previously, including a pump and treat system and a grout curtain.

The HSSA4 includes preliminary evaluation for potential treatment to entrap contaminants from migration, including the potential construction of a passive reactive barrier system and in situ reactive zones. The HSSA4 notes that these treatment options are limited by applicability to the physical setting. The Division agrees that the used of these treatment options may be limited by the site physical settings, and potentially by regulatory requirements for long-term maintenance of active or passive treatment options.

The use and need for treatment options will be considered in conjunction with actions for control of the tailings source term which is included on the treatment options list. Per Table 7.1 of the HSSA, the

following treatment options were evaluated, the table includes an overview of each option including an initial evaluation of requirements for active maintenance and oversight and advantages/disadvantages for each option:

1. **Source Controls**: Tailings Cover Repair, Impoundment Removal, and Passive Hydraulic Barrier
2. **Groundwater Treatment**: MNA, In Situ Reactive Zones, Passive Reactive Barrier, Active Hydraulic Barrier (Extraction, Extraction and Disposal, Ex Situ Treatment, Disposal)

The HSSA4 generally addresses the SCA requirement. It is noted that a cost analysis was not included and that specific recommendations were not included, however, since the intention is to move to a comprehensive site groundwater corrective action plan, the additional actions are appropriate to include with the planned future work plan for a comprehensive facility corrective action plan.

> *"g. Background Concentrations and COC Evaluation.*
>
> *i. Statistical Analysis of Upgradient and Fault-Impacted Wells.*
>
> *ii. Update list of Constituents of Concern.*
>
> *iii. Prepare a Background Evaluation Report."*

Item g. Division Review Findings: The groundwater background groundwater evaluation is submitted as a separate report[5]. A previous version of the Background Groundwater Quality Report (Draft Version) was submitted by RAML dated May 29, 2020, for preliminary Division Review. The Division reviewed the draft report and provided preliminary findings in a review letter to RAML dated March 22, 2021. Prior to finalization of the Division letter, a web meeting amongst the Division, RAML and INTERA was held on March 18, 2021, to discuss the findings and Division recommended additions for the updated Report. Per the Division Draft review, the following conclusions/recommendations were made:

1. "*Per findings it appears that: 1) the recognition of three background zones at the Facility is appropriate, 2) the statistical evaluation of data will be conducted appropriately and per appropriate guidance, and 3) the list of monitoring constituents has been analyzed and that an evaluation to expand the License required COCs and other constituents is appropriate.*"
2. "*The Division additionally includes a recommendation to clarify the screening process to ensure that selected background wells have not been impacted by contamination from the plume, and the process for statistical data evaluation procedures and background concentration calculation, by creating a process flow chart for inclusion in the Background Report*."

The revised RAML background report includes a flowchart which clarifies the RAML process for selecting/screening background wells and the process and tests used for statistical analysis of monitoring well data. The flowcharts are included as Appendix B of the background report. Per Division review of the statistical analysis process and methods, it appears that tests for normality and outliers, based on the percentage of non-detect values in the data population are consistent with tests used at other facilities and

with statistical guidance[1]. Trends identified using linear regression and Mann-Kendall test are considered and for all data sets the use of a modified approach is recommended in consultation with the Division. In the case of verifying that upgradient, cross gradient and fault impacted wells are not impacted by contaminants from the tailings plume(s) the process considers physical location and water elevations as well as geochemical signatures of the well data in comparison with tailings impacts, and the potential for well locations to be impacted in the future. Based on review of the flowcharts and information presented during web meetings, the procedures outlined appear to be appropriate. This is also consistent with the Division review of the previous RAML draft groundwater background report and Division findings and recommendations.

RAML lists three recommended actions regarding findings of the background report in Section 7.0 as follows:

1. *"Continue to collect data for COCs (As, Mo, Se, U) and proposed COC (or compliance parameter) total nitrate/nitrite, and monitored parameters (pH, Cl, SO_4, TDS, HCO_3, water level).*
2. *Provide a complete statistical analysis and background concentrations for proposed COC total nitrate/nitrite. A sufficient dataset (8 data points) will be available following the second quarter 2022 sampling event. Background concentrations of total nitrate/nitrite will be performed following the statistical analysis methods described in this Background Report and can be provided in the third quarter of 2022.*
3. *Consider the background concentration ranges and background areas identified in this Background Report when developing a groundwater corrective action program to address the mill-related plume, as recommended in the HSSA4 Report.*"

The Division agrees that the background groundwater report information and recognition of fault impacted background and expanded COC list is important for the development of the corrective action plan and long-term monitoring. A request for information regarding RAML recommended action 2 is included in the "Request for Information" section of this letter below.

h. "Install monitoring wells to refine the northern hydrogeological boundary conditions and define the geochemistry and extent of uranium concentrations.

ii. Log core for rock type, fracturing and mineralization, and geochemical analysis."

Item h. Division Review Findings: Per Division review of the HSSA4 investigation of the northern hydrogeological flow boundary, several monitoring wells and core locations were evaluated. Locations are depicted on Figure 2.5 of the HSSA4 with an inset showing specific core at well installations in the area of West Coyote Wash along the northern boundary.

Evaluation of the hydrological boundary is found in several sections of the HSSA4 including discussions of the field program, geology, and hydrogeology. Section 4.3 of the HSSA4 discusses the geochemistry

[1] United States Environmental Protection Agency. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. EPA-530-R-09-007.

of core samples and sampling and bench methods used to evaluate rock chemistry. Evaluation of core samples was used site wide to determine potential attenuation of constituents (partition coefficients) as well as delineation of contaminant plumes based on relative mobility of contaminants, including evaluation of groundwater sources using principal components analysis.

"i. Estimates of COC Attenuation

i. Investigate and compare constituent of concern adsorption (partition coefficients) using in-situ approach and a mechanistic approach."

Item i. Division Review Findings: Speciation modeling for arsenic, molybdenum, selenium and uranium, which analyzes the transport and attenuation is included in Section 4 of the HSSA4. Ferrihydrite was quantified in several core samples (9 cores) to quantify concentrations in zones of the Burro Canyon and Navajo Aquifer. Speciation modeling was done using the PHREEQC program. Based on Division Review of the HSSA4 and Tables it appears that result of the modeling are adequate regarding complexation of minerals and retardation of COC groundwater transport and appropriate for reference when developing a corrective action program. General findings of the HSSA4 are presented for attenuation of groundwater impacted and unimpacted by tailings seepage. In general: dissolved arsenic is found to partition into the solid phase for both unimpacted and impacted groundwater; Molybdenum is found to adsorb quickly when unimpacted and to be more mobile when impacted; Selenium is found to be mobile for unimpacted and impacted groundwater; Uranium is found to be less attenuated (more mobile) closer to the tailings impoundments and less mobile farther from the impoundments. Characterization data, including speciation charts, are included in Appendix 4B (Volume III of the HSSA4.

"j. Update Conceptual Site Model and Flow and Transport Model.

i. Provide flow and transport modeling

ii. Prepare a Revised Site Water Balance Report, a Background Evaluation Report and a Revised Hydrogeological Supplemental Site Assessment Report."

Item j. Division Review Findings: Flow and Transport Modelling and predictions are included as Section 5 of the HSSA4. Section 5 is broken up into several subsections as follows:

1. Section 5.1 – Revised Conceptual Site Model
2. Section 5.2 – Comparisons of 2018 and 2021 Models
3. Section 5.3 – Flow Model
4. Section 5.4 – Transport Model
5. Section 5.5 – Predictive Model Results
6. Section 5.6 – Sensitivity Analysis
7. Section 5.7 – Summary and Conclusions

The Division conducted an initial comprehensive evaluation of the groundwater flow and transport modeling platforms, layers, boundaries, and calibration of the previous 2018 HSSA3 which was summarized in the Division April 17, 2019, Request for Additional Information (RAI). The revised

conceptual and flow and transport model incorporates changes from the previous model as summarized in the HSSA4 Section 5.2 including:

1. Expansion of the model domain to the north and northwest based on potential migration of contaminants beyond the LTSM.
2. Expansion of the model domain to the west of the LVF to include the identified subregion of the Navajo Sandstone.
3. Convert the model to an 11-layer finite difference platform
4. Start the flow calibration from 1972 instead of 2003
5. Initiate the model simulation in year 2003
6. End the calibration and transport calibration in 2021 to account for recent data.

Per Section 5.3.1 the model platform used was MODFLOW-SURFACT, Version 3. Groundwater Vistas Version 8 was used as a graphical interface and ArcGIS 10.7, Microsoft Excel 2016, Fortran and Python scripts were used to develop and view model inputs and outputs.

The HSSA4 provides an explanation of boundary conditions, transport properties and model calibration. The model was run for 70 years based on the transport of uranium to sensitive areas within that time and the increased uncertainty of model results. Specifically, the predictive modeling shows that uranium in mill-impacted groundwater within the shallow Burro Canyon Aquifer pathway is predicted to migrate across the Lisbon Valley Fault at 70 years. And the plume originating from the shallow Burro Canyon Aquifer pathway has migrated into the deeper parts of the Navajo Aquifer and intercepted the East Well at concentrations exceeding the compliance limit (0.03 mg/L). At 70 years, the uranium in mill-impacted groundwater is also predicted to migrate to the northwest where it starts discharging to West Coyote Wash near Rattlesnake Springs. These uranium concentrations are included on Figure 5.37 of the HSSA4. Predictive modeling was also conducted for molybdenum, selenium, and arsenic.

Based on the predictive modeling there will need to be additional measures undertaken to control the plume migration through a Corrective Action Plan (CAP) prior to the development of ACL's and TAL's for long term control and monitoring.

"k. New Alternate Concentration Limits and Target Action Levels

i. Based on flow and transport model propose predicted ACL's and TAL's based on predicted COC concentrations and additional actions (e.g., tailings cap configuration, LTSM boundary expansion, and additional groundwater remediation) needed to achieve the proposed concentrations."

Item k. Division Review Findings: Section 6.0 of the HSSA4 discusses alternative actions to ACL and TAL calculations based on the findings of predictive flow and transport simulations and transport of the uranium plume outside of the LTSM and model boundaries, as discussed above. Per web meetings between the Division and RAML it was discussed that based on the HSSA4 predictive modeling it would be appropriate to prepare and implement a Groundwater Corrective Action Plan (GCAP) for the Lisbon Facility. The GCAP will be regulated by the Division through an administrative order after GCAP preparation and review and approval by the Director.

Section 6.0 discusses elements of a "*holistic*" approach to the development of the GCAP. The HSSA4 Cover Letter presents a strategy for the Division, RAML and RAML consultants to coordinate through the development and submission of a Corrective Action Assessment Work Plan (CAAWP).

Specifically, RAML proposes to prepare a Draft Corrective Action Assessment Work Plan (CAAWP) for review by the Division on or before November 16, 2022. RAML proposes that the CAAWP will include a proposed schedule and milestones for the following:

1. Conduct a correct action assessment by preparing a scope of work for review and approval which would commence during the 2023 field season.

   The scope of work will build on the data and conclusions of the HSSA4, the Natural Recharge and Water Balance of the Tailings Impoundments and Source Term, and the Groundwater Background Report. The CAAWP will be designed to fill needed data gaps for the selection of a corrective action remedy including:

   a. "*Hydrogeology and geochemistry further down and cross-gradient from current investigation areas, as informed by the groundwater model uncertainty analysis; potential focus areas are the Navajo sandstone and the Burro Canyon Aquifer northwest of the current groundwater monitoring well network.*
   b. *Sensitivity of the groundwater plume to potential tailing impoundment cover improvements, and*
   c. *Treatability studies as warranted, for potential groundwater treatment options to determine optimal location(s), technologies, and implementation details for potential full-scale application.*"

2. Prepare a corrective action assessment report including all items included in the scope of work, including field and analytical data and treatment performance information. RAML anticipates completion of the report during the fall of 2024. Per the HSSA4 the corrective action assessment will specifically:

   a. *"Re-evaluate site ACLs, the proposed LTSM boundary, and land use controls.*
   b. *Provide a narrative description of the proposed groundwater corrective action measures including a demonstration that the action will address the appropriate performance factors and criteria.*
   c. *Propose source term (tailing impoundments) mitigation measures as warranted to support the effectiveness of the groundwater corrective action.*
   d. *Review the available groundwater monitoring wells, and, if appropriate, recommend optimizations to the Licensed well network to more effectively monitor the tailings contaminant plume and compliance with License conditions.*"

3. RAML proposes that the submission of a draft proposed GCAP for approval by the director will be submitted as a step of the CAAWP.

Per meetings and discussions with RAML, the Division has clarified that the GCAP will be approved through an administrative consent order which will be subject to public notice and participation requirements of State rules and regulations.

Division Findings and Confirmatory Actions:

Based on Division review and findings of the HSSA4, Natural Recharge and Water Balance Modeling Report and Background Groundwater Quality Report, it appears that additional evaluation and investigation is needed to address the migration of contamination outside of previously approved long term surveillance boundaries. Per the HSSA4, further evaluation will consider the groundwater transport "*holistically*" with consideration of source controls and groundwater treatment as specified in the RAML documents.

As discussed between the Division and RAML, these issues will be appropriately addressed through the formalization of a GCAP for the Lisbon Facility. Two Division Confirmatory Actions as discussed and agreed to between the Division and RAML on March 28, 2022, are included below regarding RAML identified deliverables to be submitted for Division Review and Approval:

Confirmatory Action 1*:* Per the RAML recommended actions listed in the Background Groundwater Quality Report (Section 7.0), RAML identified that background concentrations for proposed COC nitrate/nitrite could be provided during the 3rd Quarter of 2022, after eight representative samples have been collected, for inclusion in the License. RAML language quoted as follows:

"Provide a complete statistical analysis and background concentrations for proposed COC total nitrate/nitrite. A sufficient dataset (8 data points) will be available following the second quarter 2022 sampling event. Background concentrations of total nitrate/nitrite will be performed following the statistical analysis methods described in this Background Report and can be provided in the third quarter of 2022."

Per Division review, the updated nitrate/nitrite background analysis and concentrations will be added to the proposed COC concentrations for the North and South Burro Canyon Background Wells and Concentrations on Table 7 of the Background Groundwater Quality Report for inclusion in the Facility License. Based on the March 28, 2022, discussion and agreements, RAML will submit the additional nitrate/nitrite analysis on or before the end of the 3rd Quarter 2022 (On or before September 30, 2022).

Confirmatory Action 2: Per the RAML results of the HSSA4 which confirms contamination from tailings impacted groundwater beyond the LTSM (Figure 4.6) and uranium concentrations above the groundwater standard at monitoring locations on the LTSM (MW-128, MW-138S). As well as HSSA4 results of predictive groundwater flow discussed above, RAML will provide a Draft Corrective Action Assessment Work Plan (CAAWP) for review by the Division on or before November 16, 2022. The CAAWP and due date was confirmed between the Division and RAML on March 28, 2022.

Based on agreement of the CAAWP work plan the Division and RAML will formalize activities and dates of the CAAWP and due date for the proposed GCAP through a Stipulation and Consent Agreement. Per discussion on March 28, 2022, it was confirmed that an updated CAAWP outline will be provided for Director Review on or before May 31, 2022. Additionally, it may be beneficial to hold a discussion

amongst the Division, RAML and RAML Consultants in association with submission of the updated outline (teleconference or web meeting).

If you have questions regarding this letter, please call Tom Rushing at (801) 536-0080.

Sincerely,

Phil Goble, Uranium Mills and Radioactive Materials Section Manager
Division of Waste Management and Radiation Control

DJH/TR/as

c. Grant Sunada, Health Director, San Juan Public Health Department
Ronnie Nieves, Environmental Health Director, San Juan Public Health Department
Russell Seeley, UDEQ District Engineer

References

[1] INTERA. October 2021. Hydrogeological Supplemental Site Assessment Phase 4, Lisbon Site, Rio Algom Mining LLC, Volume I: Text, Figures, and Tables. Prepared for Rio Algom Mining LLC.

[2] INTERA. October 2021. Hydrogeological Supplemental Site Assessment Phase 4, Lisbon Site, Rio Algom Mining LLC, Volume II: Appendices 1A through 2D.4. Prepared for Rio Algom Mining LLC.

[3] INTERA. October 2021. Hydrogeological Supplemental Site Assessment Phase 4, Lisbon Site, Rio Algom Mining LLC, Volume III: Appendices 2D.5 through 7A. Prepared for Rio Algom Mining LLC.

[4] INTERA. October 2021. Natural Recharge and Water Balance Modeling Report: Performance Assessment of Upper and Lower Tailing Impoundment Covers. Prepared for Rio Algom Mining LLC.

[5] INTERA. October 2021. Background Groundwater Quality Report Rio Algom Mining, LLC Lisbon Utah Facility Upper and Lower Tailing Impoundments San Juan County, Utah. Prepared for Rio Algom Mining, LLC.