



November 8, 2019

**Attention:** Steven Fraser  
Senior Enforcement Officer  
Compliance Promotion and Enforcement Unit  
Canadian Impact Assessment Impact Agency

[iaac.compliance-conformite.aeic@canada.ca](mailto:iaac.compliance-conformite.aeic@canada.ca)

299 Victoria Street, Suite 200  
Prince George, BC V2L 5B8  
250.960.4000  
[www.centerragold.com](http://www.centerragold.com)

**RE: Kemess Underground Project – Application to Amend the Federal Decision Statement**

Pursuant to section 68 of the *Impact Assessment Act*, please accept this letter and attachments in application for an amendment to the AuRico Metals Inc. Decision Statement.

AuRico Metals Inc., a wholly owned subsidiary of Centerra Gold Inc., received a federal Decision Statement on March 15, 2017 to construct and operate the Kemess Underground Project (KUG). The Project is an underground gold-copper mine located approximately 250 kilometres north of Smithers and 430 kilometres northwest of Prince George, British Columbia.

AuRico Metals Inc. is proposing changes to the Project as a result of detailed Project planning and optimization. The requested amendment addresses the following changes:

- increase in ore production capacity;
- decrease mine life from 13 to 11 years;
- modify the design of the KUG tailings storage facility including earlier construction of the East Dam and update to the causeway design;
- increase in concentrate truck traffic from 6 to 9 trucks per day on the Omineca Access Resource Road; and
- realignment of the surface conveyor route.

The Amendment Application evaluates whether there are any changes to the effects assessment presented in the environmental impact statement (AuRico 2016) as a result of the proposed Project changes and assesses whether adverse effects have changed from those presented in the Application. The Amendment Application also summarizes consultations with identified Indigenous Groups on the proposed changes.

If you have any questions related to the Amendment Application, please contact me at your earliest convenience at <personal information removed>.

Thank you for your time and attention, I look forward to discussing the matter with you in the near future.

Sincerely,

  
<Original signed by>

Tim Caldwell, RPF  
Regional Manager, Environment & Regulatory Affairs  
Centerra Gold, AuRico Metals Inc.



## Kemess Underground Project

### Application for an Amendment to the Decision Statement

November 2019

Project No.: 0371562-0304

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November 2019

# Kemess Underground Project

## Application for an Amendment to the Decision Statement

### ERM Consultants Canada Ltd.

1111 West Hastings Street, 15th Floor  
Vancouver, BC  
Canada V6E 2J3

T: +1 604 689 9460  
F: +1 604 687 4277

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## EXECUTIVE SUMMARY

On March 15, 2017, AuRico Metals Inc. (AuRico Metals, a wholly owned subsidiary of Centerra Gold Inc. [Centerra]) received a federal Decision Statement to construct and operate the Kemess Underground (KUG) Project (Project), an underground gold-copper mine located approximately 250 kilometres north of Smithers and 430 kilometres northwest of Prince George, British Columbia.

As a result of detailed Project planning and optimization, AuRico Metals is proposing changes to the Project and is requesting an amendment to the Decision Statement in accordance with section 68 of the *Impact Assessment Act*. The requested amendment would address the following changes:

- increase in ore production capacity;
- shorten the mine life from 13 to 11 years;
- modify the design of the KUG tailings storage facility including earlier construction of the East Dam and update to the causeway design;
- increase in concentrate truck traffic; and
- realignment of the surface conveyor route.

Potential adverse effects of the Project were assessed in the Application for an Environmental Assessment Certificate (the Application; AuRico 2016). This Amendment Application evaluates whether there are any changes to the effects assessment presented in the Application as a result of the proposed Project changes and assesses whether adverse effects have changed from those presented in the Application.

No significant adverse effects were identified for the proposed Project changes. Changes in the water management strategy as a result of the Project changes provide an opportunity to reduce the interaction of the Project with valued components in the aquatic receiving environment. Based on the assessment of potential effects on applicable valued components, it was determined that the conclusions regarding potential residual adverse and cumulative effects in the Application have not changed as a result of the proposed Project changes.

AuRico also sought comments from Indigenous groups potentially affected by the proposed Project changes.

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## GLOSSARY AND ABBREVIATIONS

AuRico	AuRico Metals Inc.
BC	British Columbia
Centerra	Centerra Gold Inc.
CIAA	Canadian Impact Assessment Agency
KUG	Kemess Underground
TSF	Tailings Storage Facility (formerly KS open pit)
MMO	Major Mines Office
Project	Kemess Underground Project
TKN	Tsay Keh Nay (an alliance of Takla Nation, Tsay Keh Dene Nation, and Kwadacha Nation)
Tpd	Tonnes per day
TSF	Tailings Storage Facility
VC	Valued components

## 1. INTRODUCTION

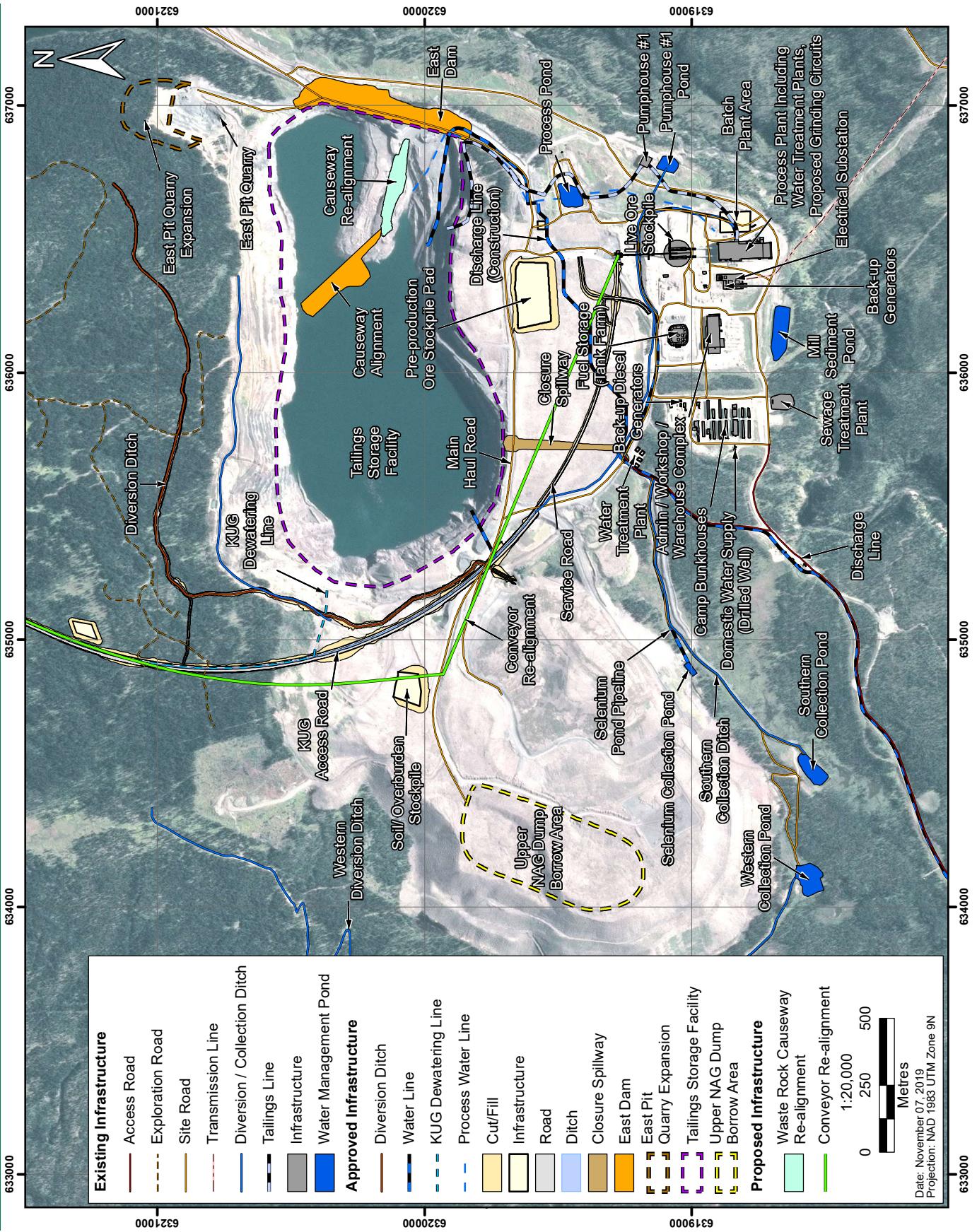
On March 15, 2017, AuRico Metals Inc. (AuRico, a wholly owned subsidiary of Centerra Gold Inc. [Centerra]) received a Decision Statement to construct and operate the Kemess Underground Project (Project), an underground gold-copper mine located approximately 250 kilometres north of Smithers and 430 kilometres northwest of Prince George, British Columbia.

As a result of detailed Project planning and optimization, AuRico is proposing changes to the Project and is requesting an amendment to the Decision Statement in accordance with section 68 of the *Impact Assessment Act*. The proposed Project changes addressed in this Amendment Application and the reasons for these changes are outlined in Table 1-1 and presented in Figure 1-1.

**Table 1-1: Summary of Project Changes**

Project Change	Reason for Change
Increase the ore production capacity	Increase from 25,000 tonnes per day (tpd) to 37,500 tpd due to Project optimization
Shorten the estimated mine life	Mine life changed from estimated 13 years to 11 years due to Project optimization
Modification to the KUG Tailings Storage Facility (TSF)	Project optimization that includes: <ul style="list-style-type: none"><li>■ Earlier construction of the East Dam</li><li>■ Modified KUG TSF waste rock causeway design.</li></ul>
Increase in concentrate truck traffic	Increase from 6 to 9 trucks per day transporting concentrate via the Omineca Resource Access Road (ORAR) to the Mackenzie loadout facility due to the increase in ore production capacity.
Realignment of the surface conveyor route	Engineering decision to re-align the conveyor route to decrease the design risk. Additional transfer station and increase in motor size to accommodate proposed production capacity increase, and waste rock handling and off-loading infrastructure.

AuRico's assessment of the potential effects of the proposed Project changes on VCs is consistent with the methods described in the Application.



**Figure 1-1: Kemess Underground Project: Proposed Project Changes**

## **2. CONSIDERATION OF PROJECT CHANGES IN POST DECISION STATEMENT PERMITTING PROCESSES**

The Project changes will require amendments to two permits issued by the BC government: *Mines Act* Permit M-206 and *Environmental Management Act* Permit PE-15335. No amendments are required to the Factory License issued pursuant to the federal *Explosives Act*.

### 3. CONSULTATION

#### 3.1 Consultation with Indigenous Nations

AuRico has met with Tsay Keh Nay (TKN; an alliance of the Takla Nation, Tsay Keh Dene Nation, and Kwadacha Nation) leadership and the Environmental Monitoring Committee (EMC), comprised of TKN representatives, to discuss the proposed changes.

Proposed Project changes were discussed with TKN on April 10, 2019. At this meeting, the parties also discussed how TKN would like to be consulted on the proposed changes and involved in the provincial *Mines Act/Environmental Management Act* permitting process to review the permit amendment applications. On September 13, 2019, AuRico met with TKN to review the changes in the water management strategy and the results of the updated water balance and water quality model.

AuRico held monthly meetings in Prince George and by conference call with the EMC to provide updates on the proposed Project changes and *Mines Act/Environmental Management Act* amendment application. Drafts of the Joint Information Requirements Table, which identified the information to be included in the permit amendment application were presented and reviewed along with the draft *Mines Act/Environmental Management Act* amendment application. Model updates to support this application were considered in assessing the potential effects of the Project changes in relation to this Amendment Application. The monthly meetings provided opportunities for the EMC to ask questions about the potential effects of the proposed changes. Table 3-1 summarizes issues raised by the EMC on the proposed Project changes during the September 2019 meeting.

**Table 3-1: Summary of Discussions with Environmental Management Committee on the Proposed Project Changes**

Proposed Project Change	Summary of Responses
Increase in Ore Production	<p>Amount of concentrate production will increase due to increase in ore production. Concentrate is scheduled to be produced from 2024 to 2035.</p> <p>There are no major risks associated with the increase in production. Confirmed the milling process can handle the increase in production.</p> <p>Base case and upper case for mine dewatering were updated to consider the changes in mining progression. The ore processing rates were also adjusted in the mill process. Dewatering rates are different but consistent with rates presented in the 2015 Application for an Environmental Assessment Certificate and the 2017 <i>Mines Act/Environmental Management Act</i> permit application.</p> <p>Based on water modeling, flow path and GoldSim model updates, no material change to water quality, water quantity and hydrology. No change to closure water balance or water quality. There are some changes in concentration because of the improved tailings consolidation input with tailings flux through closure and post closure but does not change the effects assessment.</p>
Shorter Mine Life	Mine life reduced by 2 years from 11 to 11 years. Changes expected to provide additional employment.
Modification of KUG TSF	The East dam construction will start in year 5. Geotechnical and hydrological studies to be undertaken in year 2 to support <i>Mines Act</i> permitting. In 2020, diversion ditch will be built and earth works will be completed.
Increase in concentrate traffic	Concentrate trucking to increase due to increase in ore production capacity.
Realignment of conveyor route	Conveyor realignment involves straightening the conveyor to address climate extremes.

AuRico negotiated a consultation and capacity funding agreement with Gitxsan Wilp Nii Kyap, which includes funding to review regulatory submissions related to the proposed Project changes. AuRico met with the Gitxsan in Hazelton on October 23, 2019, to review the changes in the water management strategy and results of the updated water balance and water quality model.

### 3.2 Consultation with Government Agencies

AuRico has provided an assessment of the proposed changes to the BC Environmental Assessment Office (EAO) and the Canadian Impact Assessment Agency (CIAA). Table 3-2 summarizes AuRico's consultation with these agencies.

**Table 3-2: Consultation with Government Agencies**

Date	Method	Agency	Topics
June 7	Teleconference	EAO	<i>Environmental Assessment Act</i> certificate amendment provisions
June 12	Email	EAO	Location of conveyor corridor in the CPD <i>Environmental Assessment Act</i> certificate amendment provisions and process
August 12	Letter	EAO/CIAA	Described proposed Project changes and assessment of effects on VCs
September 10	Teleconference	CIAA	IAA requirements for amending decision statements and amendment process
October 22	Email	CIAA	IAA requirements for amending decision statements and amendment process
October 24	Teleconference	CIAA	IAA requirements for amending decision statements and amendment process

#### **4. SUMMARY OF VALUED COMPONENTS ASSESSMENT RELEVANT TO THE PROPOSED PROJECT CHANGES**

The VCs assessed in the Application were also considered for the Amendment Application.

The assessment of the potential interactions between VCs and the proposed Project changes are presented in Appendix A. The Project changes are expected to interact with some VCs; however, the potential for adverse effects resulting from the proposed Project change is the same or less than the effects assessed in the Application and measures are in place to mitigate effects. Proposed project changes with potential to interact with VCs were further evaluated in Table 4-1. Table 4-1 provides the rationale for excluding VCs that do not interact with the proposed Project changes.

**Table 4-1: Selection of Valued Components for Further Assessment**

Valued Component	Rationale for Exclusion
Groundwater (quantity and quality)	<p><b>Ore Production Capacity</b></p> <p>The proposed increase in the ore production capacity does not significantly alter modeled underground dewatering rates or geochemical predictions for underground water quality presented in the Application. The main difference in underground dewatering rates arises from a delay in cave-zone production, causing inflows to be lower than previously simulated up to Project Year 4. After Project Year 4, dewatering rates track closely with the 25 ktpd schedule until the end of Project Year 10, when production under the 37.5 ktpd mine plan ceases.</p> <p>The reduction in baseflow of surrounding creeks does not exceed that which was previously presented in the Application.</p>
Surface hydrology	<p><b>Ore Production Capacity</b></p> <p>The expected changes to the magnitude of base flow reductions during the Construction and Operations phases are within the range of base flow reductions predicted in the Application. Accordingly, the surface water hydrology assessment is unchanged for East Cirque Creek, Central Cirque Creek, and El Condor Creek.</p> <p>Updated water balance modelling identified no change in the potential for an adverse effect related to effluent discharges to Attichika Creek or Waste Rock Creek compared to the Application.</p>
Surface water quality	<p><b>Ore Production Capacity</b></p> <p>Updated water quality model predictions indicate similar changes to predicted water quality in Attichika Creek to those presented in the Application. Importantly, predicted water quality within the initial dilution zone (IDZ) and on Attichika Creek have generally improved relative to the Application. This is largely a result of refinements to the discharge schedule as a result of the Project changes, specifically:</p> <ul style="list-style-type: none"> <li>■ Elimination of the need to discharge untreated effluent that includes water discharged from the process plant Year 1 (e.g., Year 1 effluent discharge will cease prior to tailings deposition);</li> <li>■ Avoidance of the effluent discharge to the receiving environment from Year 2 to Year 7;</li> <li>■ Reduction in the overall discharge volume from Year 8 to Year 11;</li> <li>■ Increase in the annual encapsulation rate of metals in the tailings due to higher rate of tailings deposition; and</li> <li>■ Increase in the projected tailings dry density will decrease the hydraulic conductivity so that reduction of seepage losses to the downstream environment through tailings is expected.</li> </ul> <p><b>KUG TSF</b></p> <p>Earlier construction of the East Dam will solely affect the timing of surface water quality effects associated with dust deposition, erosion and sedimentation and metal leaching/acid rock drainage (from rock and till excavated from the East Pit Quarry and Borrow 10 sources to be used for construction).</p> <p><b>Concentrate Traffic</b></p> <p>The Application did not consider effects of atmospheric dust deposition along the ORAR on surface water quality. The Application assumed that current total traffic volumes on the ORAR are in the range of tens to possibly hundreds of vehicles per day. An increase in concentrate shipping along the ORAR is not anticipated to change potential water quality effects resulting from atmospheric dust deposition along the ORAR.</p>

Valued Component	Ore Production Capacity	Rationale for Exclusion
Terrain and soils (terrain stability, soil quality, soil quantity)	<p><b>Ore Production Capacity</b></p> <p>The planned change in the production capacity is not anticipated to change predicted effects on terrain stability and soil quality associated with subsidence. Total subsidence is not anticipated to change because the total volume of ore produced is not anticipated to change.</p> <p>Change in the rate of underground development, ore transport and stockpiling or deposition of waste rock and tailings in the TSF will not require any new surface infrastructure and will therefore not result in any incremental soil loss.</p> <p>Change in the rate of ore and waste rock stockpiling associated with an increased production rate is not anticipated to change the risk of soil contamination because seepage from the ore storage area will be drained to the TSF and no residual effects are expected.</p>	<p><b>KUG TSF</b></p> <p>Earlier construction of the East Dam will solely affect the timing of soil loss and soil erosion effects. The Application determined that the potential increase in geohazard risk is negligible due to a range of engineering and management strategies.</p>
	<p><b>Concentrate Traffic</b></p> <p>The Application did not consider the effects of atmospheric dust deposition along the ORAR on wildlife. The Application assumed that current total traffic volumes on the ORAR are in the range of tens to possibly hundreds of vehicles per day. An increase from six to nine trucks per day transporting concentrate along the ORAR would not change the distance over which dust is deposited (generally within 100 m of the road) and is not anticipated to change wildlife effects resulting from atmospheric dust deposition along the ORAR.</p>	<p><b>Ore Production Capacity</b></p> <p>The planned change in production capacity is not anticipated to change predicted effects on ecosystem function and extent associated with subsidence. Total subsidence is not anticipated to change because the total volume of ore produced is not anticipated to change.</p> <p>Change in the rate of underground development, ore transport and stockpiling or deposition of waste rock and tailings in the TSF will not require any new surface infrastructure and will therefore not result in any incremental vegetation loss.</p> <p>Change in the rate of ore and waste rock stockpiling associated with an increased production rate is not anticipated to change the risk of soil contamination because seepage from the ore storage area will be drained to the TSF and no residual effects on terrestrial ecology are expected.</p>
Terrestrial ecology (alpine and parkland ecosystems, forested ecosystems, wetland ecosystems, red and blue listed ecosystems, rare plants and lichens and associated habitat)	<p><b>Concentrate Traffic</b></p> <p>The Application did not consider effects of atmospheric dust deposition along the ORAR on terrestrial ecology. The Application assumed that current total traffic volumes on the ORAR are in the range of tens to possibly hundreds of vehicles per day (Appendix 15-C, p. 4-3). An increase from 6 to 9 trucks per day transporting concentrate along the ORAR would not change the distance over which dust is deposited (generally within 100 m of the road) and is not anticipated to change potential terrestrial ecology effects resulting from atmospheric dust deposition along the ORAR. The Invasive Plant Management Plan will be applied to concentrate shipments and no incremental effects are anticipated.</p> <p>Based on the foregoing, terrestrial ecology is not carried forward for further assessment with respect to an increase in concentrate shipment. Change in concentrate shipment is not anticipated to change the Application conclusions regarding the Project's effects on terrestrial ecology.</p>	<p><b>Overland Conveyor</b></p> <p>Alteration in the alignment of the overland conveyor will occur in the same ecosystem types and will be constructed in accordance with the Ecosystem Management Plan, resulting in negligible changes in predicted ecosystem loss associated with this project component.</p>

Valued Component	Ore Production Capacity	Rationale for Exclusion
Fish and aquatic habitat (adfluvial bull trout, dolly varden, rainbow trout, periphyton, benthic invertebrates, sediment quality)	<b>Ore Production Capacity</b> Change in the production rate is not anticipated to change predicted effects on fish and aquatic habitat as there are no anticipated changes in predicted water quantity and quality.	
<b>KUG TSF</b>	Earlier construction of the East Dam will solely affect the timing of potential effects on fish and fish habitat as a result of erosion and sedimentation, which will be effectively managed through implementation of the Surface Erosion and Sediment Control Plan.	
<b>Concentrate Traffic</b>	The Application did not consider effects of atmospheric dust deposition along the ORAR on surface water quality. The Application assumed that current total traffic volumes on the ORAR are in the range of tens to possibly hundreds of vehicles per day (Appendix 15-C, p. 4-3). An increase from 6 to 9 trucks per day transporting concentrate along the ORAR is not anticipated to change potential effects fish and aquatic habitat as a result of increased fugitive dust deposition along the ORAR.	
<b>Overland Conveyor</b>	Realignment of the overland conveyor will not alter predicted effects on fish and aquatic habitat, as it will remain within a previously disturbed area with no significant aquatic values.	
<b>Wildlife</b> (woodland caribou, mountain goat, moose, grizzly bear, hoary marmot, furbearers, migratory landbirds, migratory waterbirds, raptors, bats, western toad)	<b>Ore Production Capacity</b> The potential for increased production capacity to interact with wildlife were evaluated via two potential interactions: changes in sensory disturbance (associated with blasting and transportation of waste rock) and exposure to chemical hazards (associated with changes in predicted water quality). Changes in overall noise levels are not expected as a result of an increased production rate. This is because the production rate increases are not associated with an increase in the magnitude of noise emissions and therefore continuous and instantaneous noise levels will not change. No changes in water quality are anticipated as a result of an increased production rate.  <b>KUG TSF</b> The early construction of the East Dam was evaluated for the potential to alter sensory disturbance of wildlife. Earlier construction of the East Dam will solely affect the timing of sensory disturbance on wildlife.	
<b>Concentrate Traffic</b>	The incremental effect resulting from an increase of 6 to 9 trucks per day is not anticipated to change the conclusions of the assessment presented in the Application (Appendix 15-C), which determined that there will be no residual effects on wildlife associated with use of the ORAR. As discussed in the Application, the traffic levels at either 6 or 9 vehicles per day are well below the limits reported to result in wildlife failing to cross the road. Mitigation will remain the same, with speed limits below 50 km/hr, which is below the speeds at which collisions and wildlife mortality typically occur.	
<b>Overland Conveyor</b>	Modification of the alignment of the overland conveyor is not anticipated to change the predicted effects on disruption of wildlife movement presented in the Application.	

Valued Component	Rationale for Exclusion
<b>Socio-economic (Aboriginal and non-Aboriginal labour market conditions, community well-being, non-Aboriginal community well-being)</b>	<b>Mine Life</b> Effects on economic benefits associated with a two-year reduction in the mine life are considered to be substantively offset by a minor increase in employment per shift. Due to the limited change in employment, no changes in community well-being are anticipated.  <b>KUG TSF</b> Earlier construction of the East Dam will solely affect the timing of associated employment.  <b>Concentrate Traffic</b> Increase in concentrate shipment along the ORAR from 6 to 9 trucks per day will have a negligible effects on the Project's overall employment effects.
<b>Human health</b>	<b>Ore Production Capacity</b> Potential interactions between the production rate and human health were considered, including changes in sensory disturbance from noise (associated with blasting and transportation of waste rock), changes in air quality and exposure to chemical hazards (associated with changes in predicted water quality and country foods). Changes in overall noise levels are not expected as a result of an increased production rate. This is because the production rate increases are not associated with an increase in the magnitude of noise emissions and therefore continuous and instantaneous noise levels will not change. The production rate increase is not anticipated to change the rate of dust deposition from waste rock transportation because the total volume of waste rock remains unchanged and dust suppression measures will be implemented in accordance with the Project's Air Quality Management Plan. No changes in the quality of water, fish, vegetation or wildlife are anticipated as a result of an increased production rate.  <b>KUG TSF</b> Early construction of the East Dam will solely affect the timing of potential human health effects.
<b>Concentrate Traffic</b>	The Application did not consider effects of atmospheric dust deposition along the ORAR on human health. The Application assumed that current total traffic volumes on the ORAR are in the range of tens to possibly hundreds of vehicles per day. An increase from 6 to 9 trucks per day transporting concentrate along the ORAR is not anticipated to change potential effects human health as a result of increased fugitive dust deposition along the ORAR.
<b>Heritage (physical and cultural heritage resources, paleontological resources)</b>	<b>Ore Production Capacity</b> No additional surface disturbance will occur as a result of an increase in the ore production capacity and no change to heritage resources is anticipated.  <b>Overland Conveyor</b> Modifications to the alignment of the surface conveyor will not interact with any known heritage resources. Construction of the surface conveyor will be subject to the Heritage Chance Find Procedure.

Valued Component	Rationale for Exclusion
<b>Ore Production Capacity</b> An increased rate of production is not anticipated to change predicted effects on the quantity or quality of water, fish, vegetation or wildlife. No change in access to lands and resources will occur as a result of an increase in production rate. A change in production rate will not interact with heritage resources. Consequently, no changes in Indigenous interests are anticipated as a result of the change in production rate.	
<b>KUG TSF</b> Earlier construction of the East Dam will solely change the timing of effects on VCs associated with Indigenous interests.	
<b>Concentrate Traffic</b> Traffic on the ORAR is not anticipated to alter Indigenous peoples' use patterns or access to areas from the ORAR. An increase in concentrate shipment along the ORAR is not anticipated to change predicted effects on water quality, wildlife, socio-economics, human health, or heritage resources. Consequently, an increase in truck traffic from 6 to 9 trucks per day is not anticipated to change expected effects on Indigenous interests.	
<b>Overland Conveyor</b> Modification of the overland conveyor alignment will not change the project's interactions with Indigenous interests.	

## 5. PROPOSED AMENDMENTS

In consideration of the above information and assessment, AuRico Metals requests the following amendments to the Decision Statement as follows:

1. Description of the Designated Project

- REPLACE:

The Designated Project would have an ore production capacity of approximately 24,650 tonnes per day (105,000 ounces of gold and 44 million pounds of copper per year) using underground block caving methods, over a predicted 13 year mine life.

- WITH:

The Designated Project would have an ore production capacity of approximately 37,500 tonnes per day (105,000 ounces of gold and 44 million pounds of copper per year) using underground block caving methods, over an estimated 11 year mine life.

2. Condition 3.6

- REPLACE:

The Proponent shall divert all runoff from the East Pit quarry into the tailings storage facility.

- WITH:

The Proponent shall divert all runoff from the East Pit quarry into the Kemess Underground tailings storage facility.

**APPENDIX A**

**ASSESSMENT OF POTENTIAL INTERACTIONS BETWEEN  
VALUED COMPONENTS AND PROJECT CHANGES**

# Appendix A: Assessment of Potential Interactions between Valued Components and Project Change

Table A-1 assesses interactions between the proposed Project Changes and valued components (VCs) assessed in the Application.

Interactions are rated according to the following criteria:

- = an interaction is not expected; no further assessment is warranted.
- ◐ = an interaction is expected, but the potential for adverse effects resulting from the proposed Project change is the same as (or less than) the effects assessed in the Application, OR a previously unconsidered Project component or activity has the potential to result in negligible adverse effects; no further assessment is warranted.
- = an interaction is expected, and has a greater or different potential for adverse effects in comparison with the Application; further assessment is warranted.

**Table A-1: Interactions of Proposed Project Changes with Valued Components**

Valued Component	Proposed Change			
	Production Capacity	KUG TSF	Transport	Conveyor
Groundwater quantity	◐	○	○	○
Groundwater quality	◐	○	○	○
Surface hydrology	◐	◐	○	○
Surface water quality	◐	◐	○	○
Terrain stability	◐	○	○	○
Soil quantity	○	○	○	○
Soil quality	◐	○	○	○
Alpine and Parkland Ecosystems	◐	○	◐	◐
Forested Ecosystems	◐	○	◐	◐
Wetland Ecosystems	◐	○	◐	◐
Red and Blue listed Ecosystems	◐	○	◐	○
Harvestable plants	◐	○	◐	◐
Rare plants and lichens and associated habitat	◐	○	◐	○
Adfluvial bull trout	◐	◐	○	○
Dolly Varden	◐	◐	○	○
Rainbow trout	◐	◐	○	○
Periphyton	◐	◐	○	○

Valued Component	Proposed Change			
	Production Capacity	KUG TSF	Transport	Conveyor
Benthic invertebrates	●	●	○	○
Sediment quality	●	●	○	○
Woodland caribou	●	●	●	●
Mountain goat	●	●	●	○
Moose	●	●	●	●
Grizzly bear	●	●	●	●
Hoary marmot	●	●	●	○
Furbearers (using American marten and wolverine)	●	●	●	●
Migratory landbirds	●	●	○	●
Migratory waterbirds	●	●	○	●
Raptors	●	●	○	●
Bats	●	●	○	●
Western toad	●	●	●	○
Aboriginal labour market conditions	●	○	○	○
Non-Aboriginal labour market conditions	●	○	○	○
Community well-being	●	○	○	○
Aboriginal community well-being	●	○	○	○
Human health	●	●	●	●
Physical and cultural heritage resources (including any structure site or thing of historical, archaeological or architectural significance)	●	○	●	●
Paleontological resources	○	○	○	○
Current use of lands and resources for traditional purposes	●	●	●	●
Indigenous Health and socio-economic conditions	●	●	●	●
Indigenous Physical and cultural heritage (including any structure, site or thing of historical, archaeological, paleontological or architectural significance)	●	○	●	●

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**ERM's Vancouver Office**

1111 West Hastings Street, 15th Floor  
Vancouver, BC  
Canada V6E 2J3

T: +1 604 689 9460  
F: +1 604 687 4277

[www.erm.com](http://www.erm.com)