

PREFACE TO THE APPLICATION

PURPOSE OF THE APPLICATION

AuRico Metals Inc. (AuRico) is proposing to develop the Kemess Underground Project (the Project), located approximately 250 km north of Smithers in a mountainous area of north-central British Columbia (BC). The proposed Project is an underground copper-gold mine which is designed to process approximately 24,640 tonnes per day (tpd) of ore over a 13-year mine life. During the life of mine operations, the Project will produce an anticipated 1.3 million ounces of gold and 563 million pounds of copper.

The proposed Project will be developed at the site of the former Kemess South Mine that is now in care and maintenance. As a modification to an existing facility that will result in less than 750 ha of additional land disturbance and less than 50% increase in previous disturbance, the proposed Project does not trigger an environmental assessment (EA) under the BC *Environmental Assessment Act* (EAA; 2002). However, AuRico requested the Project be designated as a reviewable project pursuant to Section 7(3) of the BC EAA (2002). An Order was issued by the Executive Director of the BC Environmental Assessment Office (BC EAO) on February 7, 2014 designating the Project as a reviewable project. A Project Description was submitted to the BC EAO on February 12, 2014 and an Order under Section 10(1)(c) of the EAA was issued on February 18, 2014, which requires AuRico to obtain an Environmental Assessment (EA) Certificate before the Project can proceed.

The Project is a designated project pursuant to Section 16(c) of the Regulations Designating Physical Activities (SOR/2012-147) under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012; 2012) as the production rate will exceed the threshold for a gold mine of 600 tpd. The Canadian Environmental Assessment Agency (CEA Agency) commenced an EA and granted substitution of the federal EA to BC on April 8, 2014.

The substituted review of the Project is being undertaken pursuant to the BC EAO (2013) *Memorandum between the Canadian Environmental Assessment Agency and the BC Environmental Assessment Office on Substitution of Environmental Assessments* (2013). The BC EAO is conducting the procedural aspects of Aboriginal consultation, and providing funding to Aboriginal groups (including CEA Agency contributions) to facilitate their participation in the EA process. At the end of the EA, the BC EAO will provide an assessment report, which will include the EA findings and conclusions, to the CEA Agency within a time frame that will enable the federal Minister to reach a decision within the time limits set out in CEAA 2012.

A Section 11 Order for the Project was issued by the BC EAO on May 14, 2014, which outlines the scope, procedures and methods for the EA, including government agency, public and Aboriginal

consultation requirements. Schedules B and C¹ of the Order define the Aboriginal groups who must be consulted during the EA process. The Section 11 Order Schedule B included Takla Lake First Nation and, Tsay Keh Dene Nation, and Schedule C included Kwadacha Nation, Gitksan Nation Wilp Nii Kyap, Treaty 8 First Nations, and the Métis Nation of BC. On June 23, 2014, the BC EAO issued an Order under Section 13 of the EAA, which amended the Section 11 Order by moving the Kwadacha Nation to Schedule B. The Section 11 Order was further amended on November 19, 2014 to specify regulatory requirements of the Valued Component proposal and to provide Application Information Requirements (AIR; BC EAO 2016) conditions.

The purpose of the information, analyses, and findings of this Application for an EA Certificate (Application) is to satisfy both the provincial and federal requirements such that the necessary provincial and federal EA approvals are issued, allowing AuRico to develop the Project. This Application has been developed pursuant to the AIR approved by the BC EAO in January 2016, and complies with the scope of the Project described in the Section 11 and 13 Orders issued by the BC EAO. The AIR was approved after considering comments from federal and provincial government agencies, local governments, and Aboriginal Groups.

The BC EAO established an EA Working Group to participate in the pre-Application and Application review phases of the Project EA. The first EA Working Group meeting and site visit was held on June 25 and 26, 2014. The EA Working Group includes representatives from the:

- Takla Lake First Nation,
- Tsay Keh Dene Nation,
- Kwadacha Nation;
- BC Ministry of Aboriginal Relations and Reconciliation;
- BC Ministry of Energy and Mines;
- BC Ministry of Environment;
- BC Ministry of Forests, Lands and Natural Resource Operation;
- BC Ministry of Jobs, Tourism, and Skills Training;
- BC Ministry of Social Development and Social Innovation;
- Canadian Environmental Assessment Agency;
- Northern Health Authority;
- Environment Canada;
- Natural Resources Canada;
- Health Canada;
- Transport Canada;

¹ Schedule 'B' First Nations are included as members of the EA Working Group. Schedule C First Nations are notified of key EA milestones and receive copies of EA documents (e.g., the Application).

- District of Mackenzie;
- Town of Smithers; and
- Peace River Regional District.

The EA Working Group has reviewed and commented on key EA documents, including the draft Valued Component Scoping document and the draft AIR, and is a key mechanism through which Project information has been and will continue to be exchanged. The public has also had opportunities to comment on the proposed Project via the public comment period on the draft Valued Component Scoping document and proponent-led engagement activities. The public will have additional opportunities to review and provide comment on the Project during the EAO public comment period on the Application and proponent-led engagement efforts.

ORGANIZATION OF THE APPLICATION

The Application is organized as follows:

- Table of Concordance – indicates where the information specified in the AIR (BC EAO 2016) can be found in the Application.
- Preface – identifies the purpose and describes the organization of the Application, and identifies the consultants who contributed to, or provided information for, the Application.
- Executive Summary – provides a stand-alone document containing sufficient information to equip the reader with an overview of the proposed Project and the findings of the Application.
- Table of Contents – provides a detailed listing of the major content headings of the Application.
- Acronyms and Abbreviations – comprises a list of commonly used abbreviations and acronyms used in the Application.
- Glossary – comprises a list of commonly used terms and phrases and their definitions used in the Application.

Part A. Introduction and Background

Chapter 1. Project Overview

This chapter presents general information on AuRico, the Project's geographical and regional setting and history, Project geology and mineralization, Project tenure, Project scope and schedule, and Project benefits.

Chapter 2. Assessment Process

This chapter describes the EA process for the Project, provides an overview of federal and provincial EA requirements including substitution, and identifies key provincial and federal authorizations required to allow the Project to proceed.

Chapter 3. Information Distribution and Consultation

This chapter describes the information distribution and consultation activities that were undertaken with Aboriginal groups, Canadian provincial and federal government agencies, local government, and the public. Information distribution and consultation activities planned during the Application review stage are also described.

Chapter 4. Alternative Means of Undertaking the Project

This chapter describes the processes and criteria used to develop, evaluate, and eventually screen the alternative options for developing the Project and summarizes how alternatives have influenced design changes to the proposed Project.

Chapter 5. Project Description

This chapter presents details about the proposed Project in the context of regional geology and mineral resources, the development of the proposed mine, the required facilities and the activities associated with the Construction, Operations, Closure, and Post-Closure phases, including the management of water, waste (including rock and tailings), ancillary infrastructure, and workforce and operating requirements.

Chapter 6. Reclamation and Closure

This chapter presents a conceptual closure and reclamation plan which includes an overview of the regulatory framework, closure and reclamation scope and objectives, conceptual plans for closing and reclaiming each Project component, scheduling, monitoring, costs and Post-Closure activities.

Part B. Predictive Studies

Part B contains the Predictive Studies in Chapter 7, comprising the following subject areas:

Section 7.1. Air Quality

Section 7.2. Noise

Section 7.3. Geochemistry

Each of these three sections includes the following:

- a rationale for selection and description of how the subject area may serve as a pathway to Valued Components (VCs);
- a description of the regulatory framework and the existing environmental conditions of the predictive study subject area;
- definition of the spatial and temporal boundaries of each subject area;
- a description of the methods used and outcomes from the predictive studies ;
- identification of possible mitigation measures, where appropriate; and

- a summary of the subject area predictive study with final conclusions.

Part C. Effects Assessment

Part C contains the effects assessments of the VCs of the biophysical and human environment subject areas, in Chapters 8 to 20, comprising:

Chapter 8. Environmental Assessment Methodology

Chapter 9. Hydrogeology Effects Assessment

Chapter 10. Surface Hydrology Effects Assessment

Chapter 11. Surface Water Quality Effects Assessment

Chapter 12. Terrain and Soils Effects Assessment

Chapter 13. Terrestrial Ecology Effects Assessment

Chapter 14. Fish and Aquatic Habitat Effects Assessment

Chapter 15. Wildlife Effects Assessment

Chapter 16. Economics Effects Assessment

Chapter 17. Social Effects Assessment

Chapter 18. Human Health Effects Assessment

Chapter 19. Heritage Resources Effects Assessment

Chapter 20. Effects of Changes to the Environment on Aboriginal Peoples

Each of these 13 chapters includes the following:

- a description of the regulatory framework and the existing environmental conditions pertaining to the particular VC subject area;
- a rationale for selection and identification of the VCs;
- definition of the spatial and temporal boundaries applied to the subject area;
- a description of the outcomes of the subject area effects assessment in terms of potential effects, possible mitigation, residual effects remaining after mitigation, and possible risk analyses where levels of significance or confidence warrant it;
- a re-assessment of the residual effects after mitigation for their potential contribution to regional cumulative effects; and
- a summary of the subject area effects assessment in terms of the determination of significance and conclusions.

Part D. Aboriginal Groups

Part D makes special reference to affected Aboriginal groups, comprising:

Chapter 21. Assessment of Aboriginal and Treaty Rights and other Aboriginal Interests

This chapter provides an overview of the Project's potential effects on Aboriginal and Treaty rights and other Aboriginal interests. It includes the legal, constitutional, and policy framework guiding the Assessment, an overview of the Aboriginal groups considered in the Assessment, and a summary of engagement activities undertaken for the Assessment.

Part E. Federal Requirements

Part E includes chapters required by the Canadian Environmental Assessment Agency as follows:

Chapter 22. Accidents and Malfunctions

This chapter presents an assessment of potential accidents and malfunctions and their potential residual environmental effects on subject areas following implementation of design standards, as well as preventative and contingency measures.

Chapter 23. Effects of the Environment on the Project

This chapter presents an assessment of the potential effects of the environment on the proposed Project, including physical activities related to the Project.

Part F. Environmental Management Plans

Part F contains the chapter that focuses on the environmental management framework and specific environmental management plans and reporting:

Chapter 24. Environmental Management Plans

This chapter provides a summary of environmental management and monitoring plans for an array of subject areas. Each plan generally includes a description of the regulatory and policy framework relevant to the subject area, definition of the relevant performance objectives, a description of the relevant environmental protection measures, a description of the required monitoring and work planning to bring about the protection measures, a description of follow up actions (where necessary), and a description of reporting requirements.

Part G. Summary and Conclusions

Part G includes the following chapter:

Chapter 25. Summary and Conclusions

This chapter provides an overall summary of and conclusion to the Application. The chapter includes summaries of the residual Project-related and cumulative adverse biophysical or human environmental effects and associated mitigation measures, provides an outline for follow-up program and a table of AuRico's commitments, and includes a final conclusion with respect to whether the Project is predicted to result in significant adverse residual biophysical or human environmental effects.

Appendices

The appendices provide materials in support of the main body of the Application, including volumes of baseline information for all aspects of the biophysical and human environment, detailed effects assessment modelling reports, and engineering design reports.

AUTHORSHIP

ERM Consultants Canada Ltd. (ERM) was retained by AuRico to manage the EA process for the Project, including preparation of documentation for the Application. The Application was prepared by a core team of contributors to the Application as summarized below.

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Key information, reports and data used to support the development of the Application has included input from a range of consulting groups and companies, listed below. Acknowledgements are included as appropriate in the individual reports appended to the Application.

Contributing Organization	Appendices
Amec Foster Wheeler	Feasibility Study - Surface Infrastructure - Preliminary Design Report (Appendix 4-A) Feasibility Study - Surface Infrastructure - Alternative Corridor Preliminary Design Report (Appendix 4-B) Feasibility Study - Mine Waste and Water Management Design Report (Appendix 6-A)
Ardea Biological Consulting	Terrain Mapping and Stability Assessment (Appendix 12-A) Terrain and Soils Baseline Report (Appendix 12-B) Ecosystems and Vegetation Baseline Report (Appendix 13-A) Wildlife and Wildlife Habitat Baseline Report (Appendix 15-A)
BioteQ Environmental Technologies Inc.	Laboratory Testing Reports and Memorandums Regarding Water Treatment at the Kemess Underground Project (Appendix 5-C) <ul style="list-style-type: none"> • Selenium Removal from Mine Impacted Water Collected at the Kemess Mine Site using Selen-IX™ - Laboratory Testing Report • Metals Removal from Kemess Pit Water - Laboratory Testing Report • AuRico KUG Solid Byproducts Resulting from Water Treatment Memorandum • AuRico KUG Water Treatment Process Adaptability Memorandum • AuRico KUG Updated Water Treatment Cost Estimates Memorandum
Crossroads Cultural Resource Management Ltd.	Tse Keh Nay/Kemess Underground Archaeological Overview Assessment (Appendix 19-A) Heritage Inspection Permit Final Report: 2014-0275 (Appendix 19-B) Paleontology Desktop Review (Appendix 19-D) Tse Keh Nay Kemess Underground Project Traditional Knowledge and Land Use Study (Appendix 20-A) -Prepared on behalf of the Tse Keh Nay Alliance
ERM	Notice of Invitation to Comment on Valued Component Summary Document (Appendix 3-A) Project Brochures and 2015 Environmental Management Committee Newsletter (Appendix 3-B) Project Posters and Maps (Appendix 3-C) Summary of AuRico's Communications with Aboriginal Groups and VC Scoping Document and AIR Timelines (Appendix 3-D) Aboriginal Groups Comment Tracking Table (Appendix 3-E) Aboriginal Groups Community Meetings Comment Tracking Table (Appendix 3-F) Aboriginal Consultation Plan (Appendix 3-G) Interim Pre-Application Aboriginal Consultation Report (Appendix 3-H) Summary of AuRico's Communications with Government Agencies and VC Scoping Document and AIR Timelines (Appendix 3-I) Government Agencies Comment Tracking Table (Appendix 3-J) Public Consultation Plan (Appendix 3-K) Summary of AuRico's Communications with the Public (Appendix 3-L) Public Comments Tracking Table (Appendix 3-M) Pre-Application Public Consultation Report (Appendix 3-N) Alternatives Assessment for Tailings and Waste Rock Disposal (Appendix 4-C)

Contributing Organization	Appendices
ERM (<i>cont'd</i>)	Discharge Alternatives Assessment for Kemess Underground Project (Appendix 4-D) Air Dispersion Detailed Model Plan (Appendix 7-A) Meteorology Baseline Report (Appendix 7-B) CALPUFF Contour Plots (Appendix 7-C) Environmental Noise and Blast Study Report (Appendix 7-D) Project Components and Activities List (Appendix 8-A) Winter Streamflow Measurements (Appendix 10-B) 2014 Thutade Lake Aquatics Baseline Report (Appendix 11-C) Water Balance and Water Quality Modelling Report (Appendix 11-D) 2015 Aquatic Sampling Program (Appendix 11-E) 2014 Thutade Lake Discharge Option Terrestrial Ecology and Rare Plant Baseline (Appendix 13-B) 2014 Thutade Lake Fish and Fish Habitat Baseline Report (Appendix 14-B) 2015 Fish and Fish Habitat Baseline Methods and Data Summary (Appendix 14-D) Wildlife Habitat Suitability Modelling Report (Appendix 15-B) Wildlife Effects Assessment Supplement (Appendix 15-C) Socio-economic Baseline Report (Appendix 16-A) 2015 Economic Model Report (Appendix 16-B) Non-traditional Land Use Baseline Report (Appendix 17-A) Baseline Human Health Risk Assessment (Appendix 18-A) Project-related Human Health Risk Assessment (Appendix 18-B) Thutade Lake Discharge Waterline Archaeological Review and Preliminary Field Reconnaissance (Appendix 19-C) Low Risk Failure Modes (Appendix 22-A) Federal Substitution Summary Table (Appendix 25-A)
Hatfield Consultants in association with Bustard and Associates	Limnology and Water Quality of Amazay (Duncan) Lake (Appendix 11-B) Fish and Aquatic Habitat Baseline Report (Appendix 14-A) Supplementary Fish and Aquatics Studies Conducted in 2015 (Appendix 14-C)
Itasca Consulting Group Inc.	Numerical Modeling for Assessing Caveability at Kemess under Block Caving Mining (Appendix 5-B)
Klohn Crippen Berger	Surface Water Quality Baseline Report (Appendix 11-A)
Lorax Environmental Services Ltd.	Geochemical Characterization Source Term Development and Water Quality Predictions for Underground Contact Waters (Appendix 7-E) Kemess Underground Tailings Facility - Highwall Source Term Development (Appendix 7-F) Hydrogeology Baseline Report (Appendix 9-A) Groundwater Modelling for Kemess Underground Mine (Appendix 9-B) Groundwater Modelling for Tailings Storage Facility (Appendix 9-C) Hydrology Baseline Report (Appendix 10-A) Supporting Tables and Figures for the Water Quantity Effects Assessment (Appendix 10-C)
SRK Consulting	Feasibility Study for the Kemess Underground Project, British Columbia, Canada (Appendix 5-A)

DISCLAIMER

The information contained in the Application reflects AuRico's best estimate of its plan for developing the Kemess Underground Project. It is based on the information that is currently available and believed by AuRico and its consultants and advisors to be reliable. In the event of conflicting data, it is assumed the most recent data are correct. Estimates and forecasts of the rate of mining, the sequence of mining, the metal grades, and the levels of metal production have been prepared for the purposes of the environmental assessment process and may not necessarily reflect the final detailed operation plan. Similarly, descriptions of proposed infrastructure represent AuRico's best estimate for the purposes of the environmental assessment process and do not necessarily reflect the final detailed plans to be used for construction purposes, which will be refined during and subsequent to the permit application stage. In presenting this information, AuRico has relied on the work of its consultants and advisors. The effectiveness of recommended mitigation measures and best practices contained herein cannot be guaranteed if standard operating procedures to implement, maintain, and monitor mitigation works is not undertaken by Qualified Professionals.

This information has been prepared to address provincial and federal environmental assessment requirements for the Project, and has not been prepared in accordance with securities regulatory requirements in Canada and the United States, pertaining to disclosure of forward-looking information or forward-looking statements. Accordingly, this information may not be relied upon for investment purposes.

All reserve and resource estimates included in this Application were calculated in accordance with National Instrument 43-101: Standards of Disclosure for Mineral Projects, developed by the Canadian Securities Administrators.

REFERENCES

2012. *Canadian Environmental Assessment Act, 2012*, SC. C. 19, s. 52.

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BC EAO. 2016. *Kemess Underground Project: Application Information Requirements for AuRico's Application for an Environmental Assessment Certificate*. Prepared by the British Columbia Environmental Assessment Office: Victoria, BC.