Kemess Underground
Project Overview

Minerals North, Vanderhoof, May 23, 2014

Sue Craig, Director of Gov’t Affairs & Community Relations

www.kemessunderground.com
Kemess Underground

Who is AuRico Gold?
• Canadian company with two operating mines – one in Ontario and one in Mexico
• In 2011, AuRico acquired Northgate Minerals who owned Kemess South Mine
  • Kemess South Mine operated from 1998 until closure in 2011

We are proposing to build an underground mine 6 km north of Kemess South
• Will produce 105,000 ounces of gold and 44 million pounds of copper annually over 12 years

PROJECT TIMELINE

1-2 YEARS PERMITTING | 5 YEARS CONSTRUCTION | 12 YEARS OPERATION | 3-5 YEARS RECLAMATION

AuRico is now entering the assessment and permitting stage.
Location relative to Vanderhoof
Kemess Underground Team

**Team**

- Chris Rockingham
  - VP Exploration and Business Development; Project Lead
- Harold Bent
  - Director, Environment
- Linda Hodgson
  - HR Advisor
- Wade Barnes
  - Project Geologist
- Sue Craig
  - Director Government Affairs & Community Relations

**Contact info:** kemessunderground@auricogold.com, 250.643.0723

**Website:** www.kemessunderground.com
Kemess South Mine

Operated from 1998 to 2011
- Open pit mine
- Significant Reclamation Completed
- Currently on care & maintenance – six people at site

Existing Infrastructure at Kemess South (valued at +$750 million)
- Camp
- Powerline
- Mill
- Admin Building, Warehouse
- Air Strip
- Access Road
Kemess South Mine Reclamation

- Annual programs since 1999, Large scale reclamation began in 2008
- Reclamation included:
  - contouring slopes
  - Planting grasses, seeds and trees on tailings dam
  - Construction of tailings dam spillway (expected discharge Q4 2014)
  - Waste rock dump recontoured and planted
  - Secondary mine roads
Kemess Underground
Environmental Assessment

- Project is being reviewed by both Federal and BC government
- Process was accepted for “substitution” and is being led by the BC
  Environmental Assessment Office

Steps in the Process
✓ Submit Project Description to governments (Feb 2014)
  ✓ This was reviewed by Takla, Kwadacha and Tsay Keh Dene before
    submission
- Working groups formed to determine what needs to go into the application
  about the project (June 2014)
- Submit application to government for review (end of 2014)
- Government and First Nations review of application
- Project approved (or not) by both federal and BC governments (end of 2015)
## Comparison of Kemess North and Kemess Underground Project

<table>
<thead>
<tr>
<th>Item</th>
<th>Kemess North (project denied)</th>
<th>Kemess Underground</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ore body location</td>
<td>6 km north of Kemess South</td>
<td>6 km north of Kemess South</td>
</tr>
<tr>
<td>Mining Method</td>
<td>Open Pit</td>
<td>Underground (block caving)</td>
</tr>
<tr>
<td>Amount of Tailings &amp; Waste</td>
<td>397 MT tailings, 325 MT waste, 722 MT total</td>
<td>100.3 MT tailings, 2.3 MT waste, 102.6 MT total</td>
</tr>
<tr>
<td>Deposition of Tailings/Waste</td>
<td>Amazay Lake</td>
<td>Kemess South mined out open pit</td>
</tr>
<tr>
<td>Mill</td>
<td>Increase to 120,000 tonnes per day</td>
<td>Decrease to 24,600 tonnes per day</td>
</tr>
<tr>
<td>Surface Disturbance</td>
<td>~980 ha</td>
<td>~65 ha</td>
</tr>
<tr>
<td>Type of disturbance</td>
<td>Open Pit, Waste rock &amp; tails facility, Conveyor &amp; road, tails pipeline, construction borrows</td>
<td>Portal, conveyor &amp; road, subsidence zone</td>
</tr>
</tbody>
</table>
Comparison Kemess North (Open Pit) and Kemess Underground Project

Kemess North Surface Disturbance

Kemess Underground Surface Disturbance

- Waste/Tailings Impoundment
- Spillway
- Open Pit
- Haul Road
- Tunnel & Declines
- Tunnel
- Conveyor & Road
- Waste Rock & Tailings
- Zone of Subsidence
Kemess Underground
Mine Method – Block Caving

- Top of economic mineralization in ore body is ~150 m below surface (extends to 550 m below surface)
- Orebody is 540 m long by 230 m wide
- Surface projection shown below – area outlined in circle is where “caving” or subsidence will take place

- Block caving involves systematic undercutting of ore body such that the ore will cave (uses gravity)
Kemess Underground
Cross Section Showing Decline, Underground Workings and Block Cave

Three Declines (3.4 km long)
One for air intake, one for haulage
Conveyor decline used for ore

Ventilation raise (only 1)

Crusher, shops & dewatering at bottom of decline

• Block Cave video http://www.youtube.com/watch?v=a-pWzUb6How
Kemess Underground
Proposed Mining Process

Block caving underground mining (minimizes waste rock)

1. Ore crushed underground
2. Placed on conveyor to surface
3. Processed through mill ~ 25,000 tpd
4. Tailings deposited into Kemess South mined out pit
5. Au-Cu concentrate trucked to Mackenzie
6. Transferred to rail and sent to smelters
What are the potential impacts of the Project on fish?

- There are no fish-bearing streams or water bodies that will be directly impacted by the new surface infrastructure related to the KUG project
- Extensive fisheries programs (including a successful fish compensation program implemented during Kemess South) have been undertaken throughout the watersheds in the past 20 years

AuRico has committed to maintaining the integrity of Amazay Lake and its ecosystems.
What are the potential impacts on wildlife?

- As an underground mine, there is minimal new surface disturbance of 65 ha (30 ha of surface road, and 35 ha of subsidence cone).
- Wildlife management will focus upon minimizing wildlife contact with workers and vehicles. Baseline information has been collected and AuRico will continue to monitor and develop wildlife strategies.
- AuRico has supported a caribou collaring program designed to identify herd association.
Ongoing studies:
- Archaeology
- Socio-Economic Review
- Hydrology
- Hydrogeology
- ML/ARD
- Surface Water Quality
- Meteorology
- Underground water prediction

Additional Studies:
- Archaeological Overview Assessment
- Caribou
• **Which First Nations will be affected by the Project?**

  • Two Aboriginal traditional territories overlap the project location: Tsay Keh Dene, and Takla Lake. One Aboriginal traditional territory is adjacent and downstream from the project location: Kwadacha. These three nations identify themselves as Tse Keh Nay (TKN).

  • The Gitxsan House of Nii Kyap traditional territory lies adjacent to the Project area along the western boundary.

  • There are Metis communities in the larger regional area and the project is located within the Treaty 8 disputed area.

  • Discussions between AuRico and Tse Keh Nay, the primary First Nations affected by the Project have been ongoing since AuRico acquired the property in 2011.

  • Fourteen formal meetings over three years between the Tse Keh Nay, Northgate and subsequently AuRico resulted in the signing of an Interim Measures Agreement on June 22, 2012.
The agreement addresses a variety of topics including:

• Project permitting and environmental studies including:
  • Environmental Assessment Conduct Agreement
  • Additional Studies

• Business opportunities, employment and training opportunities

• Negotiation of an Impact Benefits Agreement (IBA)

• Review of the Kemess South Mine closure plans

• Senior Implementation Committee (SIC) – oversees agreement
  • Comprised of Chiefs and senior AuRico representatives
  • Meets on a monthly basis

• Environmental Management Committee (EMC)
  • Representative from each FN and AuRico
  • Meet regularly to review environmental plans/studies for proposed project
Unique, community-based approach to cultural resource management which focused on:

- Community capacity building
- Involving local people in the project as much as possible

Tse Keh Nay (Takla Lake, Tsay Keh Dene and Kwadacha First Nations) were involved in all stages of the project including the planning phases – led to both biophysical and cultural “programs” based on recommendations from TKN.

Cultural resources of the study area were compiled based upon location, distribution and significance. This information was kept confidential and shared with each individual First Nation.
**Kemess Underground**
**Potential Employment and benefits**

*Up to 400 jobs during construction (5 years) and operations (12 years)*

<table>
<thead>
<tr>
<th>Trades</th>
<th>Professional</th>
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<tbody>
<tr>
<td>Carpentry</td>
<td>Mill Operators</td>
</tr>
<tr>
<td>Clerical</td>
<td>Millwrights</td>
</tr>
<tr>
<td>Computer Technologists</td>
<td>Occupational Health coordinators</td>
</tr>
<tr>
<td>Electrical</td>
<td>Payroll Clerks</td>
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<tr>
<td>Engineering Technicians</td>
<td>Purchasing Agents</td>
</tr>
<tr>
<td>General Foremen</td>
<td>Safety supervisors</td>
</tr>
<tr>
<td>Instrumentation Technologists</td>
<td>Security</td>
</tr>
<tr>
<td>Human Resources</td>
<td>Surveyors</td>
</tr>
<tr>
<td>Lab Assayers</td>
<td>Warehouse</td>
</tr>
<tr>
<td>Machinists</td>
<td>Welders</td>
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<tr>
<td>Mechanics</td>
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**What was the economic impact of Kemess South?**
- Expenditures/Payroll by location in a typical year at Kemess South included: 40% in Prince George/Mackenzie/Fort St. James/Bulkley Valley/Smithers

*Expect Kemess Underground to be around the same*
### Federal & Provincial Taxes to be Paid

**Life of Mine (LOM)**

<table>
<thead>
<tr>
<th>Federal &amp; Provincial Taxes</th>
<th>Feasibility ($M)</th>
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<tbody>
<tr>
<td>BC Provincial Corporate Tax</td>
<td>63.8</td>
</tr>
<tr>
<td>Federal Corporate Tax</td>
<td>87.0</td>
</tr>
<tr>
<td>BC Minerals Tax</td>
<td>86.0</td>
</tr>
<tr>
<td>Total Taxes</td>
<td>236.7</td>
</tr>
</tbody>
</table>

**Gold Price (US$/ounce)**: $1,300  
**Copper Price (US$/pound)**: $3.00

Assume CA$ and US$ are at parity.
Kemess East Exploration

2013 and 2014 Exploration program
- Significant drill programs
- Local contractors for drilling and helicopter
- 50% of crew (~20 hires) TKN members
KEMESS UNDERGROUND
Summary & Next Steps

INFRASTRUCTURE
• KUG utilizes substantial existing KS infrastructure
• Waste rock & tailings will be deposited into empty KS Pit
• New disturbance of 65ha

AURICO & TSE KEH NAY RELATIONSHIP
• Interim Measures Agreement
• Open and regular communication via Senior Implementation Committee & Environment Management Committee

ENVIRONMENTAL ASSESSMENT
• Beginning June – working groups to discuss what to be in application
• December – submission of application
• January to August 2015 – review of report
• Late 2015 – decision on project