Update on the Application of UNFC – 2009
in Thailand

By
Siriporn Soongpankhao
Geologist

Department of Mineral Resources
Ministry of Natural Resources and Environment
Outline

- Introduction to the Department of Mineral Resources of Thailand (DMR)
- Progress on the application of UNFC to mineral resources in Thailand (DMR work environments)
- Future Work plan
As a government organization we are responsible for advising the Thai government on all aspects of geosciences as well as providing geoscientific information knowledge and advice to the public.

Geological and mineral exploration, paleontology research, environmental geology, geotechnical services and mineral analysis.
Progress on the application of UNFC to mineral resources in Thailand (DMR’s work environments)

Background: DMR Mineral Resources Classification

- **2000-2012**
  - Applied UNFC – 1997 to the DMR’s existing system

- **2013**
  - Applied UNFC – 2009 to the DMR’s exiting system

- **2014-present**
  - Encouraging staff to utilize the UNFC – 2009 (ECE, 2013)
DMR’s Mineral Resource Classification (2013)

**Resource Class**

1. Detailed Exploration
2. Semi-detailed Exploration
3. Prospecting
4. Reconnaissance

**Level of Geological Knowledge**

- Measured Mineral Resource
- Indicated Mineral Resource
- Inferred Mineral Resource

**Economic Viability**

- Potentially Economic Reserve
- Economic Reserve

**Increasing level of geological knowledge and confidence**
## DMR’s Mineral Resources Classification (2014-present)

<table>
<thead>
<tr>
<th>Class (UNFC-2009)</th>
<th>Type of Mineral Quantities</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. โครงการหุ้นคำเชิงพาณิชย์ (commercial projects)</td>
<td>ปริมาณสำรองแกร่งตรวจสอบพิสูจน์ (proved reserve)</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ปริมาณสำรองแกร่งเป็นไปได้ (probable reserve)</td>
<td>1</td>
<td>2</td>
<td>1,2,3</td>
</tr>
<tr>
<td>2. โครงการที่มีศักยภาพหุ้นคำเชิงพาณิชย์ (potentially commercial projects)</td>
<td>ปริมาณทรัพยากรที่มีการศึกษาความเป็นไปได้ในการทำเหมือง (measured mineral resource with feasibility study done)</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ปริมาณทรัพยากรที่มีการศึกษาความเป็นไปได้ในการทำเหมืองเบื้องต้น (measured or indicated mineral resource with prefeasibility study done)</td>
<td>2</td>
<td>2</td>
<td>1,2,3</td>
</tr>
<tr>
<td>3. โครงการไม่หุ้นคำเชิงพาณิชย์ (non commercial projects)</td>
<td>ปริมาณทรัพยากรที่ไม่หุ้นคำเชิงพาณิชย์ (non commercial mineral resource)</td>
<td>3</td>
<td>2</td>
<td>1,2,3</td>
</tr>
<tr>
<td>4. โครงการสำรวจ (exploration projects)</td>
<td>ปริมาณทรัพยากรตรวจสอบ (measured mineral resource)</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ปริมาณทรัพยากรเป็นป่า (indicated mineral resource)</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ปริมาณทรัพยากรอุปนิสัย (inferred mineral resource)</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>ปริมาณทรัพยากรเบื้องต้น (rough inferred mineral resource)</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. ปริมาณเสริมในแหล่งรวมกับแหล่งที่มีศักยภาพ (additional quantities in place)</td>
<td>ปริมาณเสริมในแหล่ง (additional quantities in place)</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>
Progress on the application of UNFC to mineral resources in Thailand (DMR’s work environment)

- Applying UNFC 2009 to DMR mineral exploration projects
- Encouraging collaboration with relevant government offices and stakeholders
- Setting up working group and Filling in knowledge & understanding on UNFC-2009 to DMR’s personnel
- Promoting UNFC through workshops, seminars and conferences
- Working on setting up a mechanism and policy on the application of UNFC 2009 to mineral resources in Thailand
Application of UNFC-2009 to DMR Mineral Exploration Projects

Applying UNFC-2009 to all Mineral Exploration Projects

Establish Guideline (applied from UNFC)

Apply to DMR mineral exploration project

Publications on exploration results
Progress on the application of UNFC to mineral resource in Thailand (DMR work environments)

- Finishing a translation of UNFC-2009 and the specification into Thai
- Finishing a first draft of Guideline on “Mineral Resources Classification based on UNFC-2009” (in Thai)
Encouraging collaboration with relevant government offices and stakeholders

E and F:
Collaboration with relevant government offices and stakeholders

- Department of Primary Industries and Mines (DPIM)
- Mining Industry Council
- Department of National Parks, Wildlife and Plant Conservation (DNP)
- Department of Environmental Quality Promotion (DEQP)
- Pollution Control Department (PCD)

G - Geological knowledge
DMR Exploration Results
Case study: Pha Daeng Zinc Mine

A non-sulphide zinc mine located in Tak Province, North-western of Thailand. The primary ore is hemimorphite with minor smithsonite.

Green Mining: Good environment management

Classified as E1:F1:G1
Case study: Chatree Gold Mine

- Located in central Thailand (Pichit and Petchabun province)
- Epithermal gold form at shallower crustal level
- Project activities may on hold due to local communities protest

Present, E1:F1:G1
Future, E2:F2:G1 (possibly)
DMR’s working group has been working on writing a “Mineral Resources Classification base on UNFC-2009” (in Thai)

Promoting UNFC-2009 system through workshop/Seminars/Conferences/Publications

Organizing the meeting with relevant government offices and stakeholders to implement the mineral resource classification system

Implementing the UNFC-2009 to ongoing DMR’s mineral exploration projects continuously
Setting up DMR working group
Filling knowledge of UNFC-2009 to DMR’s personnel
Encouraging collaboration with relevant government offices and stakeholders

Seminar on UNFC-2009 with relevant government offices
Disseminating UNFC system through workshop/Seminars/Conferences/Publications
Setting up a mechanism to push forward the application of UNFC-2009 to be a national mineral classification
Future Work Plan

- Keeping on applying the UNFC-2009 to DMR mineral exploration project and extend to others

- Continue promoting UNFC through workshop/Seminars/Conferences/Publications

- In the process of trying to push forward the application of UNFC-2009 to be a national mineral classification
Thank you for your attention