PERC – NOT JUST A CLASSIFICATION

MDSG: 7 Jan 2014
Steve Henley: deputy chairman, PERC; director, Resources Computing International Ltd
Eddie Bailey: chairman, PERC; chief geologist, Aggregate Industries Ltd
Thanks to all our sponsors
PERC – what is it?

• Pan-European Reserves & Resources Reporting Committee (so should really be PERRRC)
• We define standards
  – for public reporting by minerals companies
  – of Exploration Results, Mineral Resources, and Mineral Reserves
• The European counterpart of JORC
PERC – who is it?

• A committee established jointly by four professional organisations in Europe (GSL, IGI, IOM3, and EFG)

• Now registered as a not-for-profit association with an address in Brussels (the EFG office, in the Belgian Geological Survey building)

• Members are all volunteers, no paid staff
PERC and CRIRSCO

• PERC is a member of CRIRSCO
• CRIRSCO (Committee for Mineral Reserves International Reporting Standards) is an international ‘umbrella’ committee which coordinates the work of national reporting organisations that define public reporting standards
• CRIRSCO members are currently: JORC, CIM, SME, SAMREC, PERC, Chile (Comision Minera), Russia (NAEN)
• All CRIRSCO-aligned standards follow the same principles and share an identical set of core definitions
• Differences because different jurisdictions, different markets
CRIRSCO-family code usage
The PERC Reporting Standard

• Specifies how public reports should be prepared – though does NOT define how estimates should be obtained
• Defines who should prepare them and take responsibility for their content
The PERC Reporting Standard

- Principles-based, not prescriptive
- Two main parts
The PERC Reporting Standard

- Principles-based, not prescriptive
- Two main parts

COMPETENT PERSON REQUIREMENT

- Qualifications
- Membership of an RPO
- Relevant Experience
The PERC Reporting Standard

• Principles-based, not prescriptive
• Two main parts

COMPETENT PERSON REQUIREMENT
• Qualifications
• Membership of an RPO
• Relevant Experience

CLASSIFICATION

MINERAL RESOURCES
- Inferred
- Indicated
- Measured

MINERAL RESERVES
- Probable
- Proved

Exploration Results

Increasing level of geological knowledge and confidence

Consideration of mining, processing, metallurgical, economic, marketing, legal, environmental, infrastructure, social, and governmental factors (the "Modifying Factors").
Competence and responsibility

The Competent Person:

• Qualifications
• Membership of a professional organisation
• 5 years relevant experience
  – CRIRSCO 2013 discussion on extending this requirement (following the example of Chile)
• The principle of self-certification
• The principle of peer review
• A team as Competent Person
Principles

• PERC is principles-based, not prescriptive
• **Transparency, Materiality, Competence**
• The Competent Person is central: requires experience, qualifications, membership of a recognised professional organisation
• Self-certification and Peer Review
• A team as Competent Person, especially when reporting Reserves
PERC Standard – structure & content

• Introductory sections
• Competence & Responsibility
• Reporting Terminology
• Reporting General
• Reporting of Exploration Results
• Reporting of Mineral Resources
• Reporting of Mineral Reserves
• Guidelines sections for specific mineral types
• TABLE 1 (check-list)
• Appendices
The classification: USGS Bulletin Was The Precursor to Modern Codes

USGS Bulletin 1450-A and USS Circular 831

McKelvey diagram: geologic confidence and economic feasibility axes

SEC IG7 – Proven and Probable Reserves reportable, Measured, Indicated, and Inferred Resources not reportable

JORC, SME Guide, PERC, CIM, CRIRSCO Template, ...
The classification

MINERAL RESOURCES

- Inferred
- Indicated
- Measured

MINERAL RESERVES

- Probable
- Proved

Increasing level of geological knowledge and confidence

Consideration of mining, processing, metallurgical, economic, marketing, legal, environmental, infrastructure, social, and governmental factors (the "Modifying Factors").
Recognition

• PERC is recognised by ESMA for use on European Union stock exchanges (ESMA = European Securities and Markets Authority)
• Accepted on a number of other stock exchanges around the world (Canada, Singapore, ...)

PERC: a standard for European markets

Minerals industry capital (primary listings) on the world’s stock exchanges

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest of World</td>
<td>25%</td>
</tr>
<tr>
<td>UK</td>
<td>41%</td>
</tr>
<tr>
<td>Australia</td>
<td>2%</td>
</tr>
<tr>
<td>South Africa</td>
<td>8%</td>
</tr>
<tr>
<td>USA</td>
<td>11%</td>
</tr>
<tr>
<td>Canada</td>
<td>13%</td>
</tr>
</tbody>
</table>

Relative sizes of mining capital markets – EU total estimated in the region of 45-50%

End-2007 – source: CRU database
What else does PERC do?

- Participation in European and global projects to raise professional standards – specifically for minerals reporting
  - Example: the Minventory project - led by BGS, BRGM; a metadata web portal for European raw materials
- Training: workshops, courses, conferences
  - 21-22 Nov. 2014, Brussels: EFG/PERC/CRIRSCO conference on reporting standards
Current developments

• Initiated discussions on the inclusion of a commodity-specific set of guidelines on Dimension Stone. Of particular importance to a number of European companies, particularly marble producers in Italy
How PERC works:
here’s a greenfield exploration project
No site-specific knowledge – any deposit could be small
Or large
Can report an **Exploration Target**, as a range of possible tonnages and grades
Ah – now we have some data. Drillhole intercepts can be reported as **Exploration Results**

**From 80-95m depth,**
15 metres intersection averaging 5 g/t gold

**From 200-205m depth,**
5 metres intersection averaging 0.8 g/t gold
Now we have enough drillhole data to tell us something more.
We can build a deposit model, and report Resources
We can start to look at the economics. The deep deposit will never be economic. **It is not a Resource**
With a mine design and other Modifying Factors, we can define a Reserve
Note that a Reserve allows for dilution and for mining losses
Thank you