THE DISCOVERY AND GEOLOGY OF THE SALARES NORTE EPITHERMAL GOLD-SILVER DEPOSIT, NORTHERN CHILE

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Gold Fields Ltd. - 8 operating mines in 4 countries

Founded in South Africa in 1887

~2.1 Mozs Au-Eq produced in 2016 (Guidance)
Northern Chile / Southern Peru – Main gold belts

Gold deposits ≥ 2 Moz
- Low sulphidation
- High sulphidation
- Porphyry

Salar Norte

Miocene
Paleocene – Oligocene

Paleocene – Oligocene
Regional Context

Salares Norte – Regional Context

Maricunga Gold Belt

- Total endowment + 90 Moz AuEq.
- All, except La Coipa, Esperanza and Salares Norte are porphyry-style Au (Cu) deposits; large but low grade.
- La Coipa in Care and Maintenance, 2013 ~7.5 Moz AuEq production over 25 years.
- Maricunga (Refugio) suspended, 2016 ~3 Moz Au production over 20 years.
- Salares Norte is the first discovery in the northern part of the Maricunga gold belt.
Maricunga Belt: Porphyry-Epithermal Model

Porphyry level
- Cerro Casale
- Lobo-Marte
- Refugio
- Caspiche
- Volcan
- Cerro Maricunga

Epithermal level
- La Coipa
- Esperanza
- Salares Norte

Steam heated alteration

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Modified from Sillitoe, R.H., 2010
The Discovery and Geology of the Salares Norte Epithermal Gold-Silver Deposit, Northern Chile | January 2017

Salares Norte – History of Discovery

• 2007-2008: Area selection & reconnaissance using La Coipa (Puren) model
  • 2,500 km² area selected; minor previous exploration; open ground
  • Few roads, high elevation (+4,000m); Seasonal exploration (Oct-Apr)
  • Focus on spectral anomalies within NW-SE structural corridor
  • 4 of 10 targets selected for detailed follow-up work
Salares Norte – History of Discovery

- **2008-2009:** Initial RC drilling at Pircas, with positive results: **24m @ 4.1 g/t Au**, in structurally controlled breccia with oxidised vuggy quartz.

- **2009-2010:** Follow-up drilling at Pircas, intersections on the order of **100m @ 0.5 g/t Au**, in vuggy quartz breccia with advanced argillic alteration.

- **2010-2011:** First drill program at Salares Norte, March 2011: 980m RC / 4 holes; Discovery hole: SNRC002, with **96m @ 1.54 g/t Au and 61 g/t Ag** Oxidized, good metallurgical response in preliminary leach tests.

- **2011-2013:** Delineation drilling; Spectacular oxide intercept: **132m @ 53.2 g/t Au and 59.3 g/t Ag** (SNDD017). Maiden Resource Declaration (2013)

- **2014-2015:** Positive Scoping Study; 71,374m completed in 231 holes; Updated Mineral Resource Declaration (December 2015):

<table>
<thead>
<tr>
<th>Tonnes (Mt)</th>
<th>Au (g/t)</th>
<th>Ag (g/t)</th>
<th>Au (Moz)</th>
<th>Ag (Moz)</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td>26.8</td>
<td>3.9</td>
<td>48.9</td>
<td>3.3</td>
<td>42.1</td>
<td>30% Indicated; 96% Oxide</td>
</tr>
</tbody>
</table>

- **2016:** Further drilling and studies.
Multiple volcanic events: 21.1 – 1.1 ma

Source: SERNAGEOMIN1998- modified by Gold Fields
Alunite and kaolinite in orange and yellow; steam-heated silica in pale blue; based on Aster data.
Low magnetic response (blue-purple colour) coincides with hydrothermal alteration and trace element geochemical anomalies.
Salares Norte – Discovery hole SNRC002

- Hydrothermal breccia; advanced argillic alteration (silica-alunite-vuggy quartz)
- Anomalous trace elements in “soil”: As, Sb, Pb, Bi, Hg
- Low gold (<24 ppb) except one sample with 628 ppb Au below breccia outcrop.
- Margin of magnetic low; Coincident resistor identified by CSAMT.
- Model had been proved positive at Pircas.
- Two RC holes: 1st hole lost @ 85m; 2nd hole successful: 96m @ 1.54 g/t Au y 61 g/t Ag
Salares Norte – Breccia development

Brecciation Intensity

Crackle | Jigsaw | Mosaic | Rubble

Monomictic breccia

Polymictic breccia

“Wispy” juvenile clast

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Salares Norte – Geological Map

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Salares Norte – 4000NW Section

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Salares Norte – Mineralisation examples in HQ drill core

A. Banded quartz veinlets with py in the center
   - 1.4 g/t Au, 32.3 g/t Ag

B. SNDD005 @ 388m
   - Unoxidised polymictic breccia; clasts with porphyry-style veinlets
   - 2.4 g/t Au, 1.2 g/t Ag

C. SNDD017 @ 164m
   - Oxidised Polymictic breccia (PBX)
   - 4.2 g/t Au, 71.7 g/t Ag

D. SNDD017 @ 238m
   - High grade structure cutting PBX.
   - 2,850 g/t Au, 3,290 g/t Ag

E. SNDD017 @ 234m
   - Creamy silica & visible gold (VG) in PBX
   - 1,520 g/t Au, 706 g/t Ag
Salares Norte – Gold Grade Shells

Grade Shells
Gold

- ≥ 1 g/t
- ≥ 5 g/t
Salares Norte – Gold Grade Shell

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Open

Top of mineralisation ~4310

Top of mineralisation ~4370

Agua Amarga - 700m

Brecha Principal - 700m

Gold (g/t)
- 0 - 0.05
- 0.05 - 0.25
- 0.25 - 0.5
- 0.5 - 1
- 1 - 2.5
- 2.5 - 5
- 5 - 2,850
Salares Norte - Final remarks

Key factors which led to the discovery

- Understanding of Andean high sulphidation Au-Ag systems
- Effective Aster image processing & targeting
- Geological mapping and recognition of key alteration facies
- Geochemical sampling and pathfinder element anomalism
- Geophysical surveys (ground magnetics and CSAMT)
- Early validation of the exploration model at Pircas
- Persistence, systematics and perhaps some serendipity!
- Supportive management, consistent budgets and local autonomy.

Gracias!