Working Together:
Industrial & Artisanal Mining

Andrew Neale (COO) & Alvaro Peralta (General Manager)

PDAC – March 3rd – 6th, 2013
The Hemco Model

- The Hemco Vision – Industrial Mining and Artisanal Mining can and must work together.
- Both activities can be compatible if developed in an orderly and dignified manner, with mutually beneficial, and well defined roles and responsibilities.
- The Hemco effort has resulted in a unique social and economic development model that can serve as a potential template for other mining operations.
The principals of Hemco have been invested in the Bonanza area since 1995.

Formal mining assets include fully operational, fully permitted underground and open-pit mines, associated milling complexes and dedicated 5.4 MW hydroelectric generation.

Rapidly expanding gold production, in part due to the relationship with artisanal miners:
- 38,000 ounces in 2011
- 55,000 in 2012
- 67,000 (est.) in 2013 &
- 75,000 (est.) for 2014
HEMCO Concession Package

26 exploration concessions totaling 269,400 Ha.

Includes 12,400 ha Mining Concession awarded in 1994 for 50 years.

$5 million/year exploration program – with $4 million for regional exploration and $1 million for near-mine exploration.

9 drill rigs on the property.
Bonanza Mine Exploration

Extensive (> 20 km) epithermal system – gold bearing quartz veins in volcanic host rock (andesites and basalts).

The bulk of the artisanal mining occurs on this concession.
The External Stakeholder Relationship

The relationship between mining companies and external stakeholders has to be predicated on the fulfillment of innate human needs, in priority, to allow people to reach their full potential, as per Abraham Maslow.
Integrated Development Plan

- 2008 - PODU:
  - Township Development Plan
  - Unique to Costa Caribe

- 2010 – 1st Forum for Artisanal Mining in Bonanza:
  - Problem Identification
  - Plan for Sector Development

- Issues Identified:
  - Legal Insecurity
  - Environmental Practices
  - Occupational Health Risks
  - Lack of Social Development Programs

- Results:
  - Establishment of rules and guidelines for the mutually beneficial activities between Artisanal Miners and Hemco
5 Principals of the Hemco Model

- Legal Stability and Order:
  - Permits to Operate
  - Rights and Responsibilities

- Dedicated Processing Plants:
  - Reduced Environmental Impacts
  - Higher Mineral Recoveries

- Industrial Training and Safety:
  - Hemco Sponsored Training

- Human Development Programs:
  - Zero Usury, Child-Care Centers, Financing, Training

- Enhanced Environmental Management Practices:
  - Commitment to a Mercury Free Mining Zone in 2 Years
Implementation

- A fair, organized and equitable business relationship is established.
- Completed census forms the basis for accreditation.
- Hemco as the concession owner assigns locations for Artisanal developments.
- Identification cards issued as proof of authorization.
- Accredited miners must respect laws against child labor, environmental regulations, and occupational hygiene, including annual regulatory refresher courses.
Hemco Organization

Andrew Neale
Vice Presidente y Representante Junta Directiva

Alvaro Peralta
Gerente General

David Turner
Jefe de Exploracion

Roger Castellon
Gerencia de Operaciones

Orlando Prado
Gerencia de Mantenimiento

Milton Medina
Gerencia de Ambiental y Seguridad

Alejandro Padilla
Gerencia de Finanza y Administracion

Gerardo Magana
Gerencia Legal y Relaciones Publicas

Joaquin Bustillo
Gerencia de Pequeno Mineria
Day-to-Day Operation (1 of 3)
Day-to-Day Operation (2 of 3)
Day-to-Day Operation (3 of 3)
Results – Hemco Plant

- Currently processing 900 t/day:
  - Conventional crushing, grinding, CN leach, Merrill Crowe Plant
  - 24% Artisanal Ores
  - 46% Underground Ores
  - 30% Open Pit Ores

- Expansion to 1,200 t/day by Q3, 2013

- Maintain 20-25% Artisanal Ores in Feed

- 40-45% of Au production attributable to Artisanal Ore
Results – Vesmisa & La Curva Plants

- Vesmisa – 110 t/day of 100% Artisanal Ores commissioned in 2011:
  - CN⁻ Leach Plant
  - Dore Production
  - 200-250 oz. Au per week

- La Curva – 80 t/day of 100% Artisanal Ores commissioned in September 2012:
  - Gravity Recovery and Flotation Plant
  - Concentrates Transported to and Processed in the Hemco Plant

- Opportunities exist for addition plants in the local area and elsewhere in Nicaragua.
Compare & Contrast

- Mercury vs. Gravity & Flotation
- Tailings Discharge vs. Tailings Management
- Health & Safety
- Confirmation of the Applicability of Gravity Recovery to Initiate the Phasing-Out of Mercury
Commercial Terms

- Ore delivered in ~10 ton lots, weighed, sampled and assayed.
- Settlement with the ore owner on weights and assays.
- Sliding payment scale of 48%-51% of contained gold based on ore grade.
- Ore owner pays mining costs, surface access costs, and delivery costs to the plant.
- Ores processed and dore produced & shipped to the US for refining – Hemco costs.
- Payment in full to the ore owner within 3 weeks of delivery to the plant, based on the spot gold price that Hemco receives from the refinery.
## Financials Jan – June 2012

<table>
<thead>
<tr>
<th>Production</th>
<th>Underground</th>
<th>Open Pit</th>
<th>Purchased Ore</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ore Delivered</td>
<td>56,440</td>
<td>61,004</td>
<td>38,176</td>
<td>155,620</td>
</tr>
<tr>
<td>Waste Moved</td>
<td>-</td>
<td>312,870</td>
<td>-</td>
<td>312,870</td>
</tr>
<tr>
<td>Strip ratio</td>
<td>-</td>
<td>5.1</td>
<td>-</td>
<td>5.1</td>
</tr>
<tr>
<td>Head Grade - gpt</td>
<td>3.42</td>
<td>3.25</td>
<td>9.23</td>
<td>4.78</td>
</tr>
<tr>
<td>Recovery</td>
<td>75.2%</td>
<td>73.9%</td>
<td>90.8%</td>
<td>82.3%</td>
</tr>
<tr>
<td>Ounces - gold</td>
<td>4,673</td>
<td>4,720</td>
<td>10,293</td>
<td>19,686</td>
</tr>
<tr>
<td>Ounces - silver</td>
<td>11,129</td>
<td>11,240</td>
<td>24,513</td>
<td>46,882</td>
</tr>
</tbody>
</table>

| Revenues                    | 7,703,932   | 7,780,279| 16,968,399    | 32,452,610|
## Financials Jan – June 2012

<table>
<thead>
<tr>
<th>Costs</th>
<th>Underground</th>
<th>Open Pit</th>
<th>Purchased Ore</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Op. Costs</td>
<td>2,068,580</td>
<td>1,152,033</td>
<td>8,504,238</td>
<td>11,724,851</td>
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<tr>
<td>Ref. &amp; Transp.</td>
<td>53,961</td>
<td>54,495</td>
<td>118,852</td>
<td>227,308</td>
</tr>
<tr>
<td>Milling</td>
<td>1,326,955</td>
<td>1,434,259</td>
<td>897,552</td>
<td>3,658,766</td>
</tr>
<tr>
<td>Silver credit</td>
<td>(337,903)</td>
<td>(341,251)</td>
<td>(744,252)</td>
<td>(1,423,406)</td>
</tr>
<tr>
<td>Tech. Services</td>
<td>81,459</td>
<td>88,047</td>
<td>55,099</td>
<td>224,605</td>
</tr>
<tr>
<td>Administration</td>
<td>809,308</td>
<td>874,753</td>
<td>547,416</td>
<td>2,231,477</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,002,361</strong></td>
<td><strong>3,262,335</strong></td>
<td><strong>9,378,905</strong></td>
<td><strong>16,643,601</strong></td>
</tr>
<tr>
<td>Cost per Oz.</td>
<td>856</td>
<td>691</td>
<td>911</td>
<td>845</td>
</tr>
<tr>
<td>Auric royalty</td>
<td>80,335</td>
<td>81,131</td>
<td>176,942</td>
<td>338,408</td>
</tr>
<tr>
<td>Cash costs</td>
<td>4,082,696</td>
<td>3,343,466</td>
<td>9,555,847</td>
<td>16,982,009</td>
</tr>
<tr>
<td>Margin</td>
<td>3,621,236</td>
<td>4,436,812</td>
<td>7,412,552</td>
<td>15,470,601</td>
</tr>
<tr>
<td>Margin per ounce</td>
<td>775</td>
<td>940</td>
<td>720</td>
<td>786</td>
</tr>
</tbody>
</table>
Conclusions

• Industrial Miners can co-exist and thrive with Artisanal Miners.
• Communication is better than Confrontation.
• Working relationship is based on mutual respect and shared benefits.
• Improved economic opportunities, improved workplace safety, reduced environmental impacts, increased tax base, access to social and economic benefits, and general community development.
• With the introduction of gravity recovery systems, a program is in place to declare Bonanza a Mercury Free Zone within 2 years.