

# Developing New Nickel Resources Voisey's Bay Project

Presentation to  
CIM

Toronto

November 17, 2005



**“This presentation will include projections and other forward-looking statements. While these projections and other statements represent our best current judgement, they are subject to risks and uncertainties that could cause actual results to vary, including the risk factors identified in Inco Limited’s filings with the U.S. SEC”.**



Dollar amounts in this presentation are  
expressed in United States currency  
unless otherwise stated



# Developing new nickel projects is challenging

- Most “greenfield” nickel projects on the drawing board in feasibility stage
- Seven to ten years to bring on capacity, including three years to permit
- Much of world’s known nickel is lower grade
- Many deposits cannot be developed at a reasonable long-term nickel price
- Cyclicalality of demand for nickel



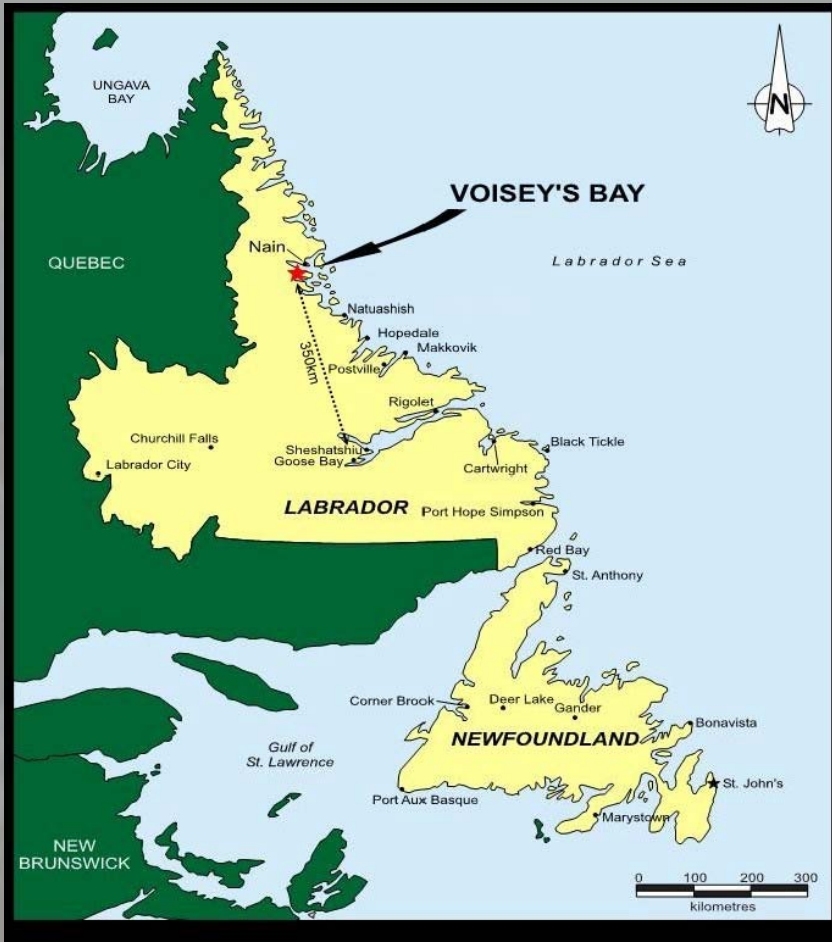


# Voisey's Bay project context

- Greenfield site development in remote area with access to shipping
- Overlapping and unsettled land claims - Innu Nation; Labrador Inuit Association (LIA)
- Multi-party environmental assessment – Canada, Newfoundland, Innu Nation, LIA
- Project promotion resulted in high expectations among local inhabitants and politicians
- Possible application of hydrometallurgical process technology (as opposed to pyrometallurgical technology)



# Project Setting



- The Project is being developed on the traditional lands of the Labrador Inuit and the Labrador Innu
- Canadian courts have held that Aboriginal peoples in Canada possess special rights to traditional Aboriginal lands
- Those rights can include requiring resource developers to enter into Impacts and Benefits Agreements (IBAs) on traditional lands to set forth how lands can be used and benefits to be received by Aboriginal people



# Impacts and Benefits Agreements

- Legally binding agreements
- Secure economic benefits and maximize Project opportunities for Aboriginal peoples
- Help to mitigate project impact



# IBA negotiations for Voisey's Bay took seven years to complete

- Late 1995 - Negotiations with LIA and Innu Nation begin
- January 2000 - Project and IBA negotiations put on hold due to impasse with local government on project configuration
- May/June 2001 - Negotiations with LIA and Innu Nation restart
- May/June 2002 - Inuit IBA and Innu IBA draft initialed and presented to memberships for ratification
- June 24, 2002 - Inuit and Innu IBAs ratified
- July-September 2002 - Final legal text of IBAs signed



# Project Overview



# Voisey's Bay project configuration

- The project will be developed at two sites about 1,200 kilometres apart
  - The mine & concentrator will be established at Voisey's Bay
  - The hydromet demonstration plant and commercial plant will be built in Newfoundland
- Both sites require development of extensive infrastructure such as port facilities, power supply, water supply & roads
- The Voisey's Bay site also includes an airport and accommodation complex



# Project capacity

- 6,000 tonne-per-day mine and concentrator
- Annual production
  - 50,000 tonnes nickel-in-concentrate, containing 2,300 tonnes cobalt and up to 6,800 tonnes copper
  - 32,000 tonnes copper-in-concentrate





# Three-phased Voisey's Bay development

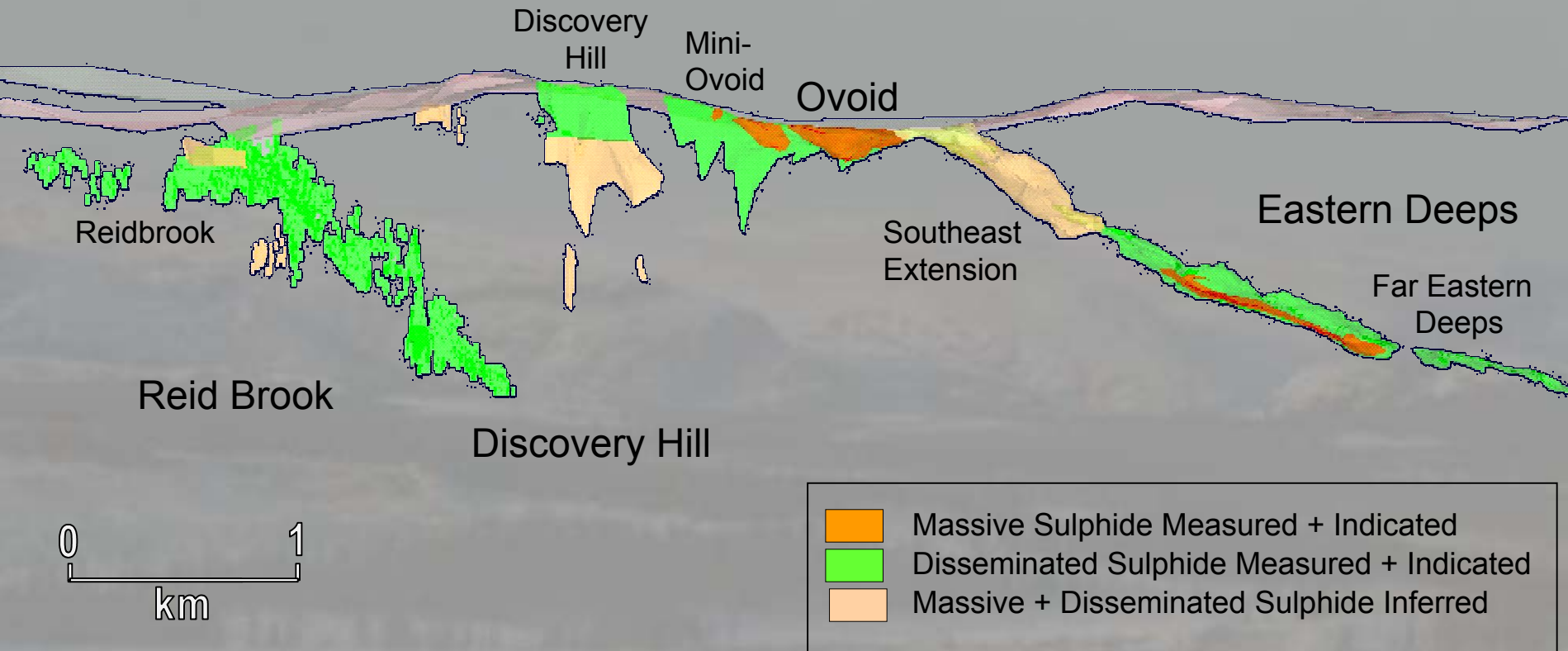
<b>Voisey's Bay Timeline – Phases</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2018</b>
<b><u>Phase One, 2002-2006</u></b>	<b>Infrastructure 02-03</b>		<b>R&amp;D, Concentrate Handling Facilities 02-05</b>								
			<b>Mine &amp; Concentrator mid-03 – late 05</b>		<b>Commitment to and construction of commercial hydrometallurgical process plant beginning with 2007 feasibility study</b>						
<b><u>Phase Two,</u> End of 2008 – end of 2011</b>											
<b><u>Phase Three</u> Subject to completion of underground exploration program</b>											

## Potential underground mining





# Voisey's Bay mineral resources



- 32 million tonnes proven and probable reserves
- 50 million tonnes indicated mineral resource
- 12 million tonnes inferred mineral resource

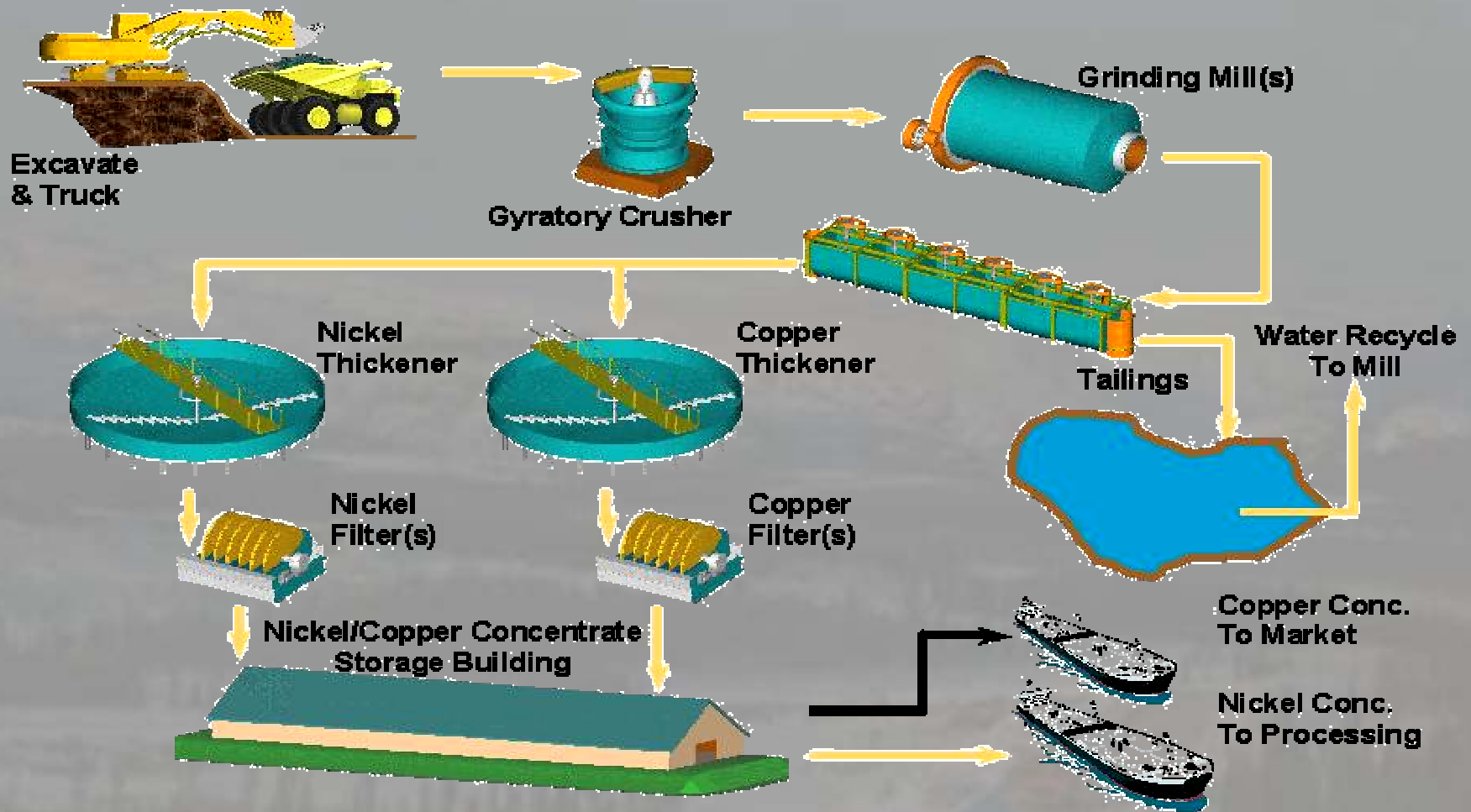


# Exploration

- US\$63M exploration program
- Two Stage Program
  - 2002-2006: Advanced surface program to complete pre-feasibility studies on the underground deposits
  - Based on positive exploration results, completion of the pre-feasibility studies will be undertaken.
- Underground mine development and expansion of mine and concentrator subject to completion of underground exploration program

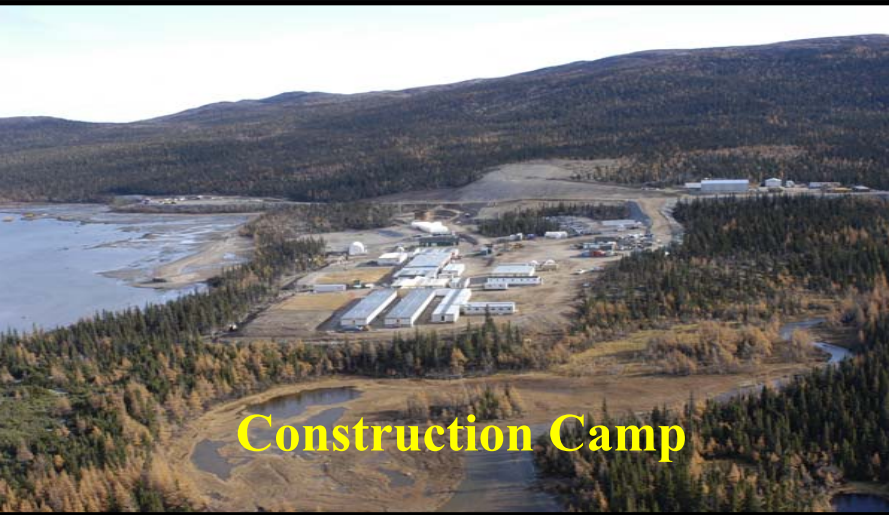


# Simplified Concentrator Flowsheet





Reaching agreement with the Province, LIA and Innu Nation allowed us to install temporary infrastructure in 2002.





In 2003 our construction effort focused on building civil infrastructure and logistics.





Having civil infrastructure in place, allowed us to finish permanent facilities, begin MEPIC and start pre-stripping in 2004.



Our construction program made significant progress in just two years.



**October 2003**



**One Year Later**



**Today**



Mining the Ovoid began on August 21.





First concentrate was produced on September 12.



First concentrate being loaded on *M.V. Arctic* at the port site on November 12 - more than eight months ahead of our original schedule.





Voisey's Bay is located in a sub-arctic region accessible by air and sea.



Test probe of ice flows in Anaktalak Bay using *MV Arctic*  
February 2005



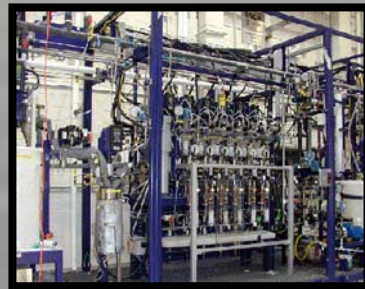
# Hydromet Research and Development (R&D) Program



A multi-phased \$155 million R&D program is being conducted to extend the application of hydromet technology to process Voisey's Bay nickel concentrate.



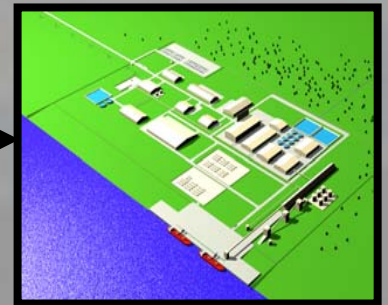
Laboratory  
Mississauga



Mini-pilot plant  
Mississauga



Demonstration Plant  
Argentia, Newfoundland



Commercial plant

**Bench Scale**

**1/10,000**

**1/100**

**1/1**

**2003-2004**

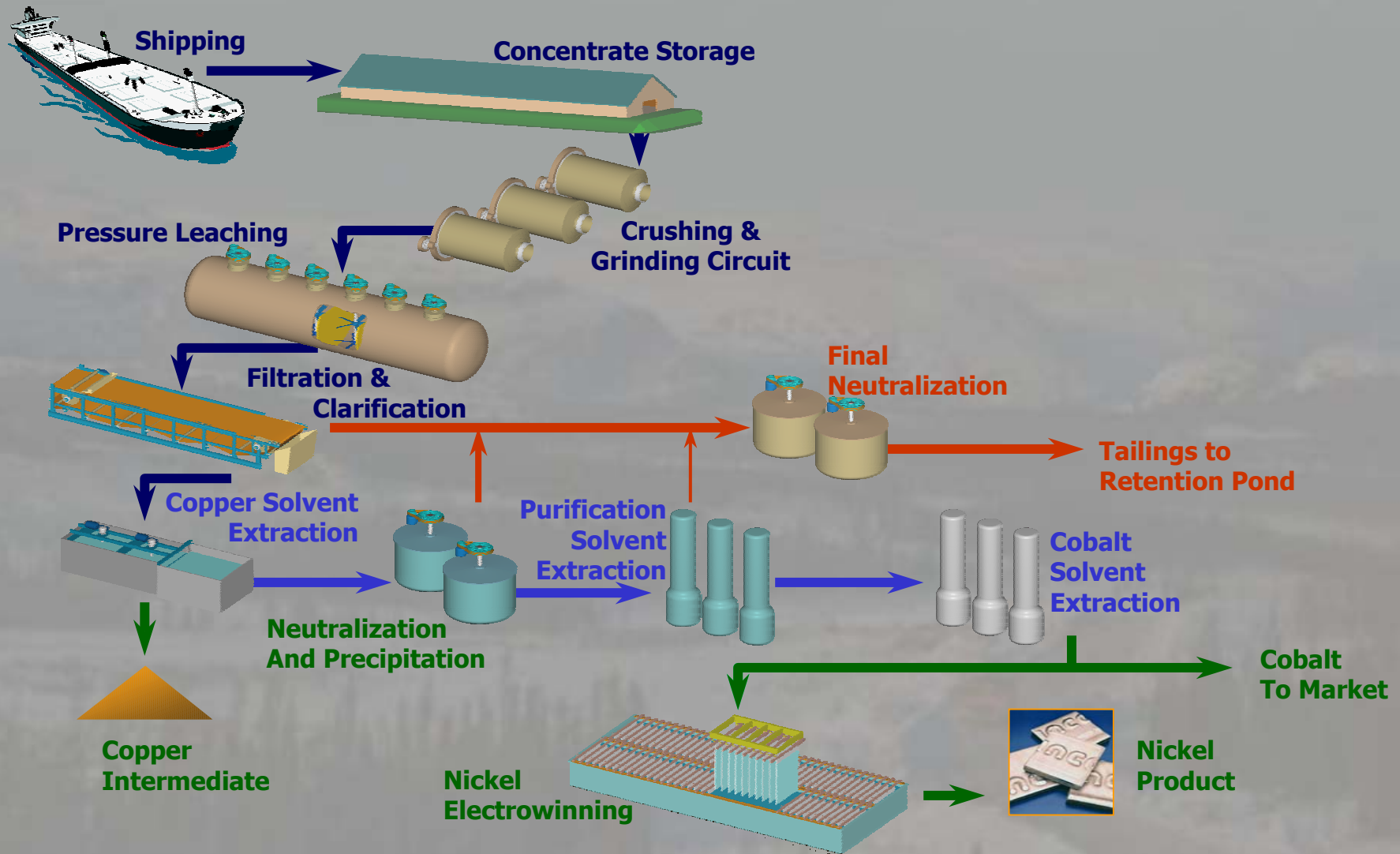
**2005-2007**

**2009-2011**

**Design, Engineering &  
Construction**



# Simplified hydromet flowsheet



Hydromet has advantages over conventional nickel sulphide process technology.

- Elimination of problems related to sulphur dioxide ( $\text{SO}_2$ ) emissions and workplace environment
- Improved energy efficiencies
- Increased metal recovery





# We achieved our objectives with the mini-pilot program.

- Validated chemistry
- Established workable flowsheet
- Generated information required to begin detailed engineering of demonstration plant





Construction began in Argentina in May 2004 and by November the building envelope was completed.



By July we had installed many of the process modules.

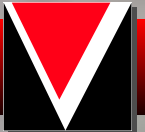


With the arrival of concentrate from Labrador, we began the final phase of the Hydromet R&D program on October 20<sup>th</sup>





# Project Achievements



# Safety

- Hours to date about 6.6 million
- Disabling injury frequency rate of 0.8



# Environmental

- Very close monitoring has taken place and overall good environmental compliance has occurred
- High standards maintained



# Procurement and Employment

- High levels of participation by local companies and construction trades
  - >80% of contracts awarded to NL companies
  - >90% of construction workforce from Newfoundland and Labrador
- Aboriginal participation in all aspects of construction program in Labrador
  - Aboriginal companies awarded procurement/construction contracts in excess of Cdn\$500 million
  - Construction phase used successfully to provide training and workplace experience for aboriginals
    - More than 1,100 aboriginals employed supporting construction program
    - At peak nearly 500 aboriginals were working at the construction site - surpassing all expectations

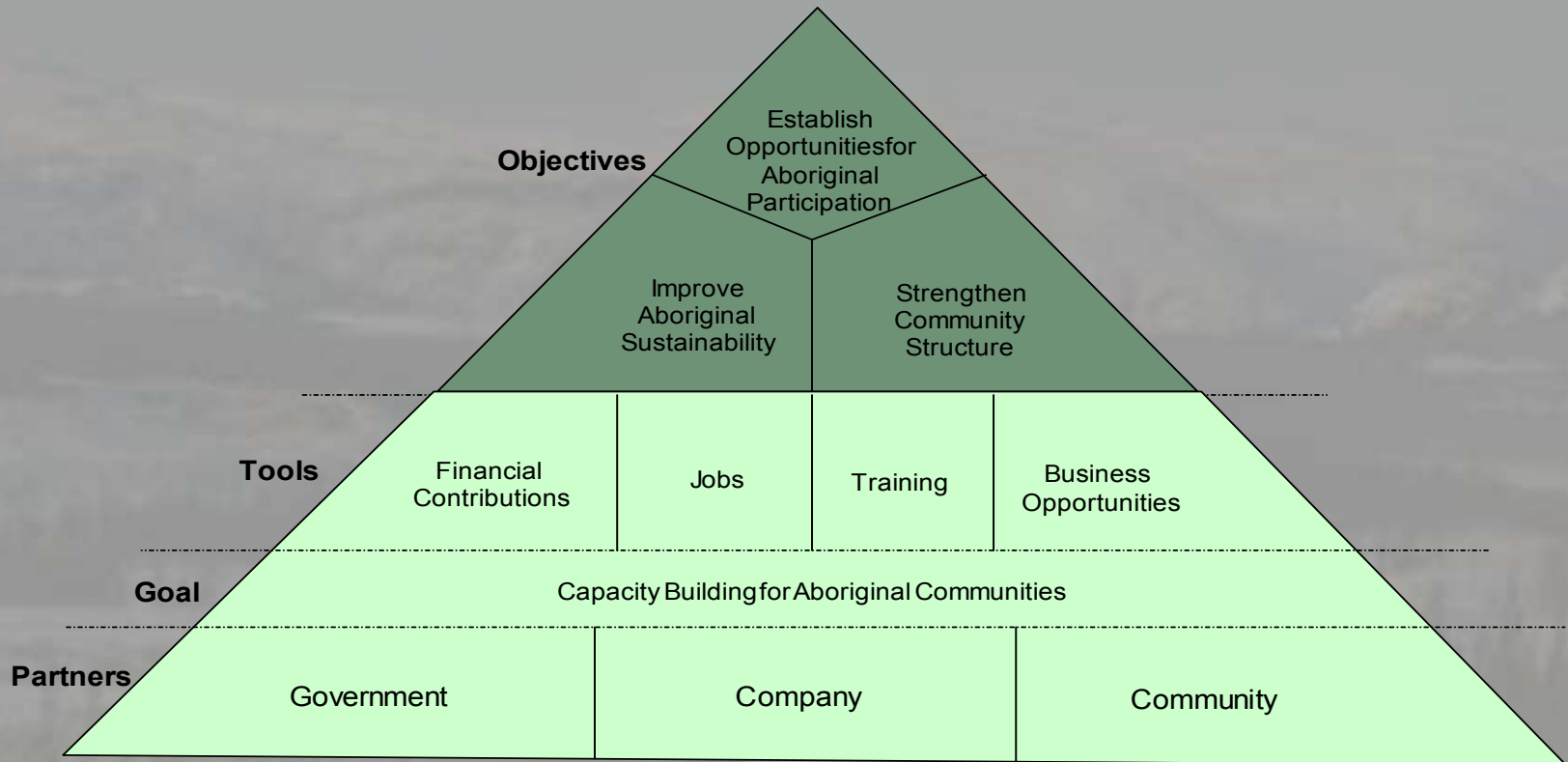


# Aboriginal Training and Employment

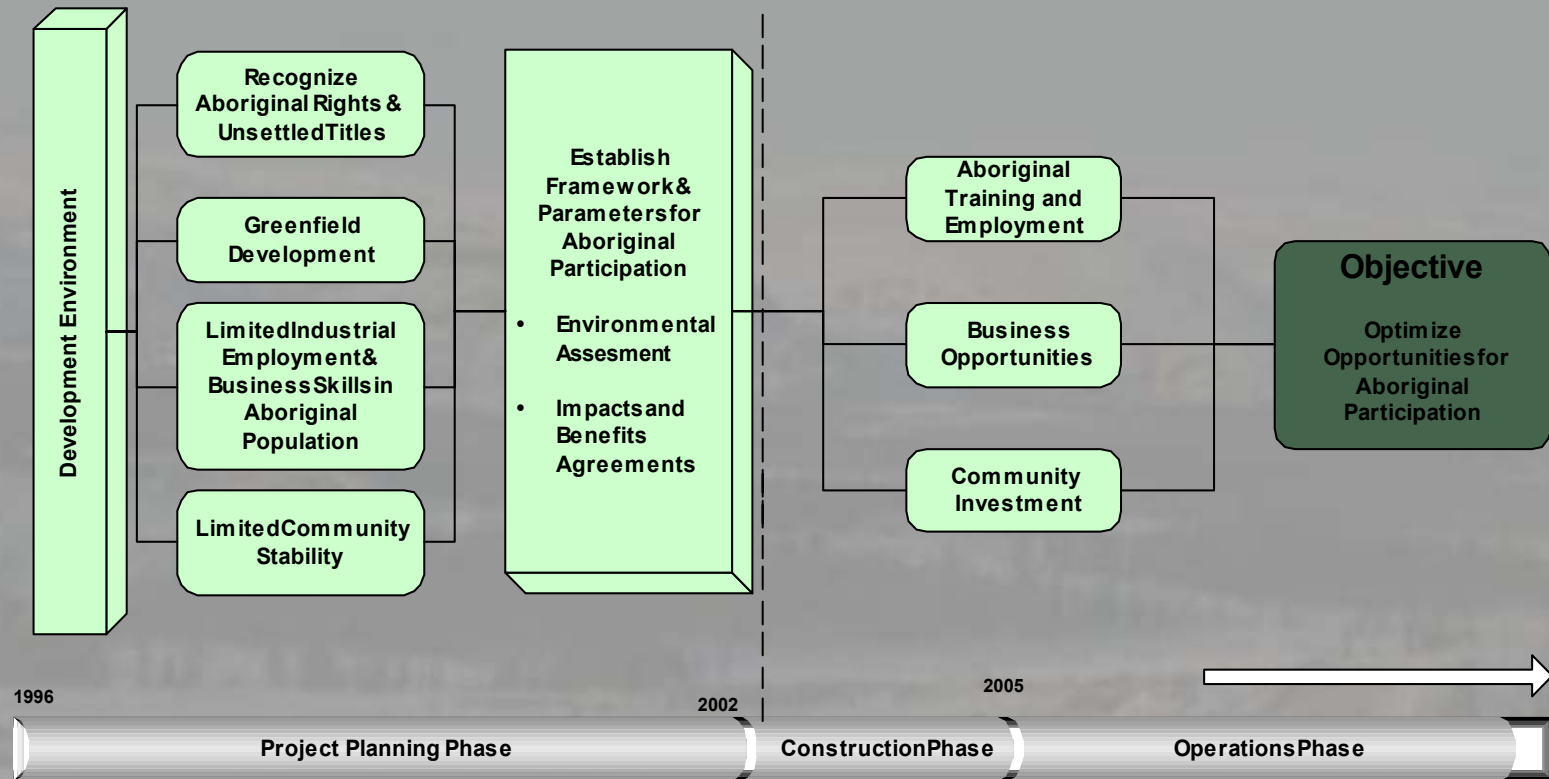




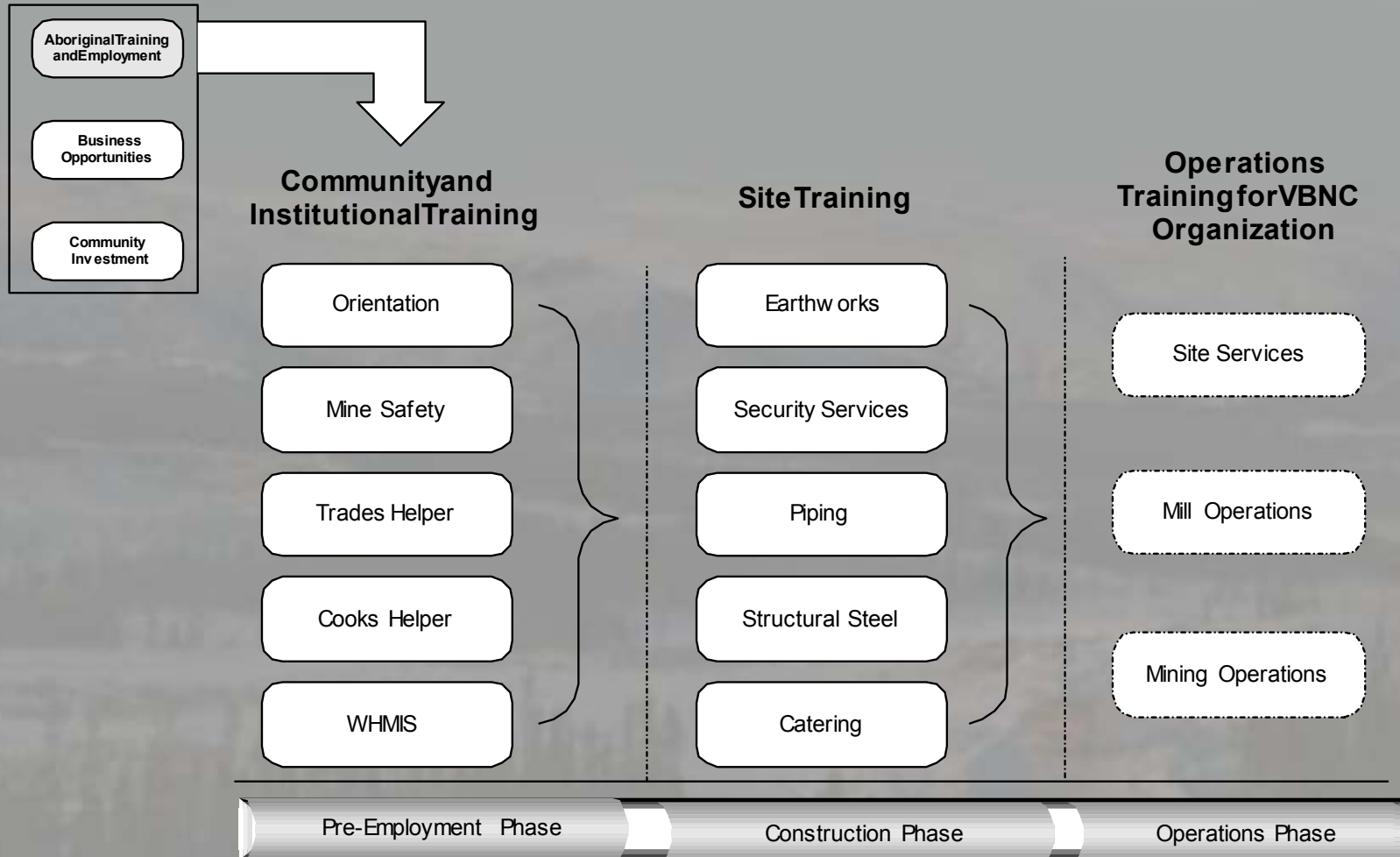
# A Broader Perspective



# Industry-Based Aboriginal Workforce Development Approach



# Training and Employment



# Our commitment to local participation has continued into operations

- 98% of mine and concentrator workforce are from Newfoundland and Labrador
  - 50% are aboriginal
- 90% of Hydromet R&D team in Argentina are residents of the province
  - 32% are women
- About 80% of procurement awards in Labrador and Argentina have been to NL businesses



# Business Driven Partnerships

- All major – and most minor – Operations service contracts have been awarded to aboriginal firms

<b>Catering and Camp Services</b>
<b>Site Services</b>
<b>Security</b>
<b>Air Transport</b>
<b>Medical Services</b>
<b>Shipping Support</b>
<b>Fixed Equipment Maintenance</b>



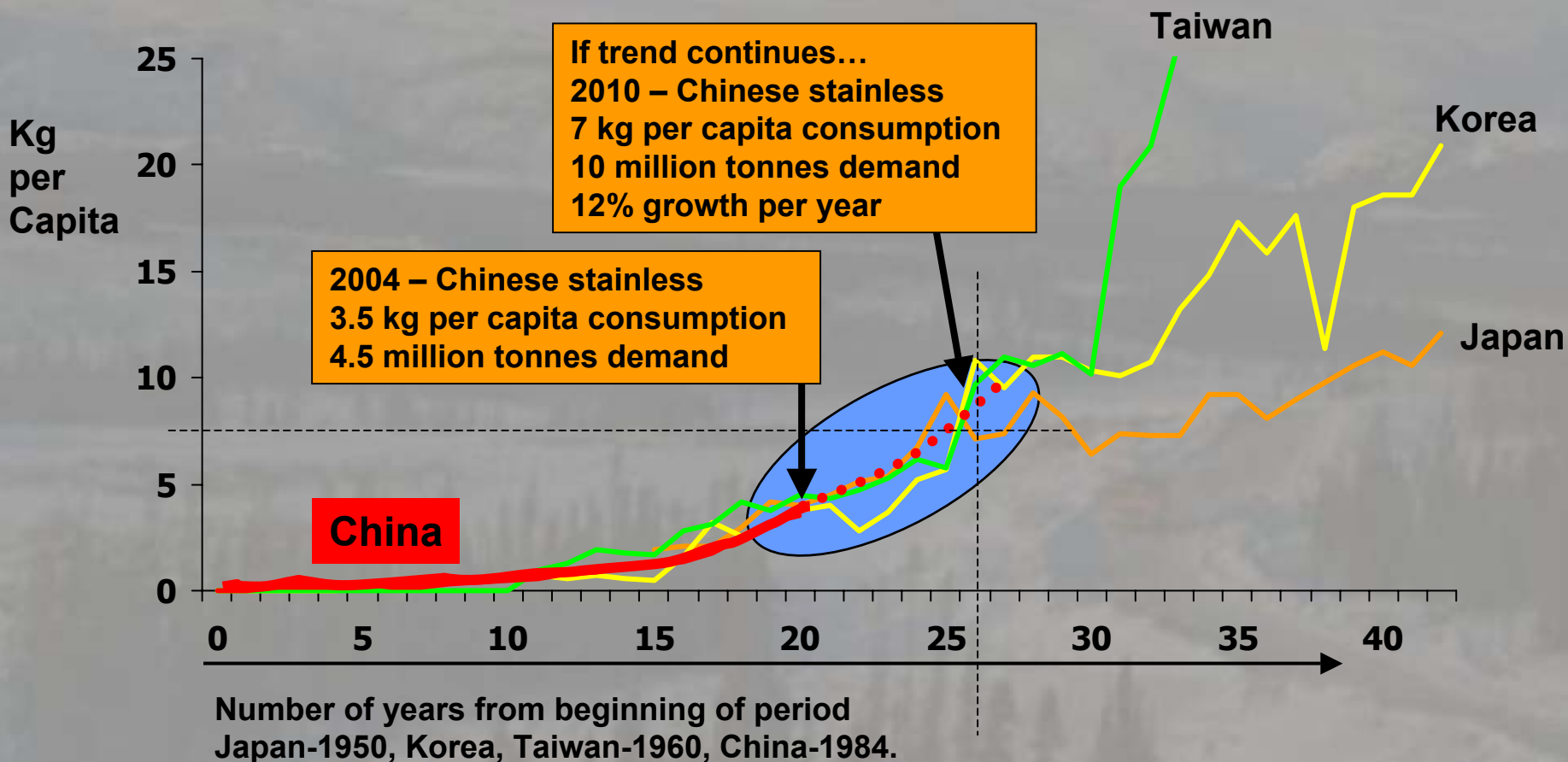
# Looking Ahead





Chinese stainless demand growth is following the same trend as other Asian countries.  
Demand could reach 10Mtpa by 2010.

### Stainless Demand per capita (kg)



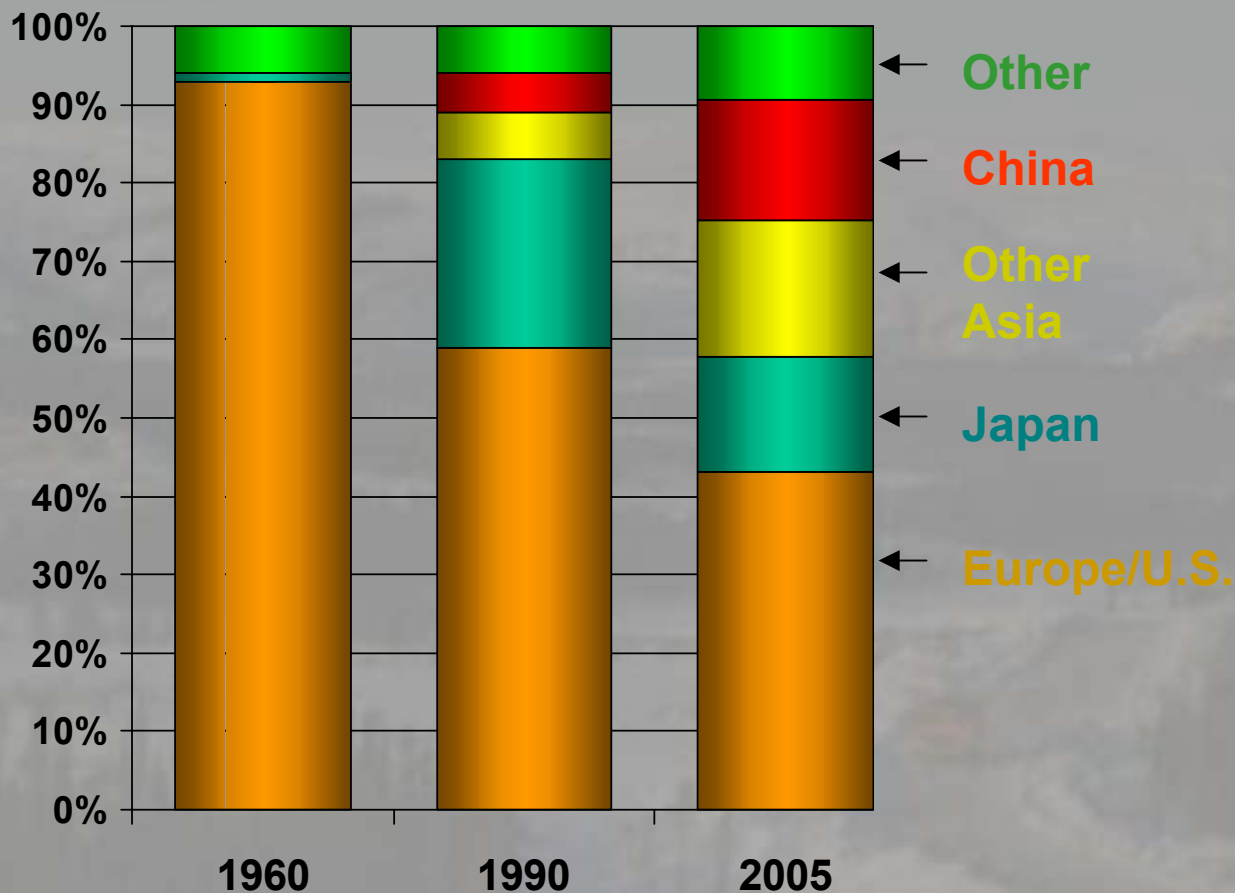
Despite the high growth in Chinese stainless consumption in the past 15 years, consumption in China is less than 1/3 of average Western per capita consumption level.

## 2003 Consumption of stainless steel vs. per capita GDP

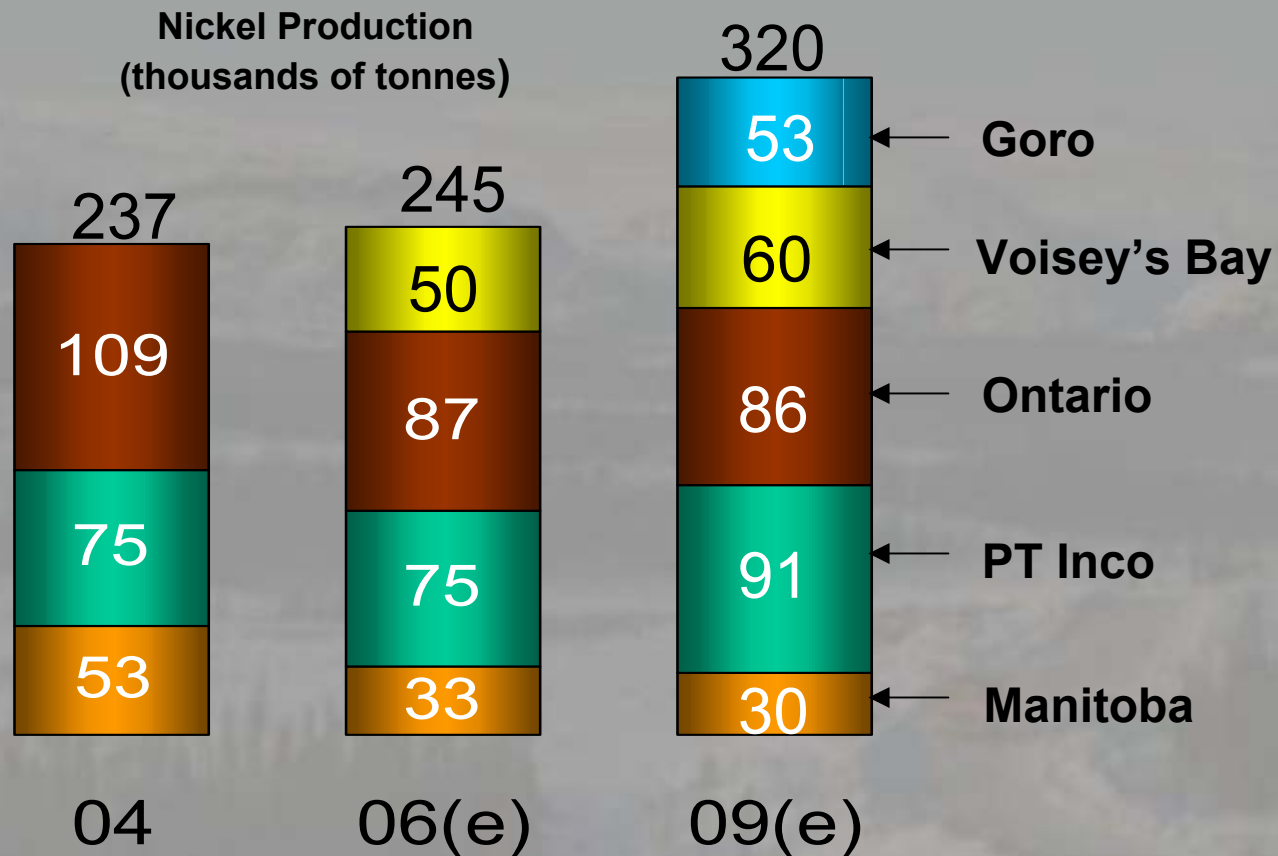


Significant shifts are occurring in where nickel is consumed, we expect the Asian markets to continue to gain share in the future, reducing the importance of Europe, US and Japan.

### Nickel Demand by Region



Voisey's Bay production will help Inco increase its production levels by about 35% by 2009 from 2004 levels.



# Lessons Learned

- Communications
- Time to Develop
- Labour Management
- Sustainable Development





# Questions

