Diversified, Low-Risk, Long-Life Portfolio

### Teck Coal (100%)
- World’s 2nd largest seaborne steelmaking coal producer
- Six open pit operations

### Oil Sands
- Fort Hills: 20%
- Frontier: 100%
- Lease 421: 50%
- 3.5b bbl contingent resource

### Red Dog (100%)
- Large-scale, low-cost zinc production

### Trail Operations (100%)
- One of the world’s largest fully integrated zinc and lead smelting/refining complexes

### Growth, Diversity and Cost Competitive Production

- Antamina (22.5%)
  - Large, low-cost copper-zinc co-product mine

- Quebrada Blanca (76.5%)
  - Recently completed feasibility study of Quebrada Blanca Phase 2 (hypogene) project

- Andacollo (90%)
  - Recently completed expansion that quadrupled production

- Highland Valley (97.5%)
  - One of the world’s largest open pit copper mines

Note: References throughout to mine lives are based on Teck reserve estimates (or where indicated resource estimates) and current production rates. Actual mine lives may vary.

[Image of a map showing mine locations and production sites]
Teck Trail Operations
Teck Trail Operations

Who We Are

• One of the largest integrated zinc/lead smelter complexes in the world

• 1550 employees

• 18 metal and chemical products

• Secure source of clean electricity

• Current technology
Teck Trail Operations

Our Products

Zinc

Lead
Teck Trail Operations

Our Products

Germanium

Fertilizer

Indium

Specialty Metals
# Products on the Zinc side

<table>
<thead>
<tr>
<th>Zinc</th>
<th>Galvanizing, die casting, zinc oxide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium</td>
<td>Batteries, coatings</td>
</tr>
<tr>
<td>Indium</td>
<td>LCD screens</td>
</tr>
<tr>
<td>Germanium</td>
<td>Infrared optics, fibre optic cable, semiconductors</td>
</tr>
<tr>
<td>Germanium</td>
<td>Infrared optics, fibre optic cable, semiconductors</td>
</tr>
<tr>
<td>Sulphur</td>
<td>Sulphur dioxide, sulphuric acid, chemical processes</td>
</tr>
<tr>
<td>Sulphuric Acid</td>
<td>Pulp and paper production, metallurgical processing</td>
</tr>
<tr>
<td>Ammonium Sulphates</td>
<td>Fertilizers – granular and crystal</td>
</tr>
<tr>
<td>Sulphur Dioxide</td>
<td>Bleaching agent (pulp and paper), sterilizing agent (food processing), water treatment</td>
</tr>
</tbody>
</table>

# Products on the Lead side

<table>
<thead>
<tr>
<th>Lead</th>
<th>Car batteries, radiation protection, soundproofing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Alpha Lead</td>
<td>Computer chips</td>
</tr>
<tr>
<td>Gold</td>
<td>Money, jewellery</td>
</tr>
<tr>
<td>Silver</td>
<td>Photographic processes, electronics</td>
</tr>
<tr>
<td>Bismuth</td>
<td>Pharmaceuticals, alloys</td>
</tr>
<tr>
<td>Copper Arsenate</td>
<td>Wood preservative</td>
</tr>
<tr>
<td>Copper Sulphate</td>
<td>Animal feeds, mining</td>
</tr>
<tr>
<td>Sodium Antimonate</td>
<td>Fire retardant</td>
</tr>
<tr>
<td>Ferrous Granules</td>
<td>Cement production</td>
</tr>
</tbody>
</table>
1890 ~ Gold mining begins in Rossland, BC
1896 ~ Canada’s first electrolytic copper refinery begins operation in Trail
1897 ~ Canada’s first gold ingot poured at Trail
1902 ~ World’s first electrolytic lead production
1916 ~ One of the world’s first electrolytic zinc refineries
1931 ~ Fertilizer production begins
1977 ~ Major modernization of metallurgical plants begins
1997 ~ Installation of KIVCET Lead Smelting Furnace
2001 ~ Teck Corporation and Cominco Ltd. merge to form Teck Cominco Ltd. which then became Teck in 2009
Lead Production

- KIVCET Furnace Technology
- Produce ~ 85,000 tonnes/year
- 80% from concentrate
- 20% from recycle sources
  - Used lead acid batteries
  - Cathode ray tube glass
Lead and the Community

- 1989 University of BC Study

- "Lead Study Liaison Committee"
  - Cominco (now Teck)
  - Province (Health & Environment)
  - City of Trail
  - Cominco employees’ union
  - Parents

- Trail Community Lead Task Force (1992)

- Trail Health and Environment Committee (THEC) in 2001
  - Trail Health & Environment Program
Keys to Success

Stakeholders, particularly the company, were **PROACTIVE**

- Cominco (Teck) made inquiries that led to study *before* issue received media or public attention
- Government and industry *asked* general community to share their authority
- Company, City and Province issued press releases in support of program
Keys to Success

Community members were offered seats at table and encouraged to PARTICIPATE fully.

- Community members on Technical and Education Committees
- Government and industry encouraged inclusion of community in discussions

TRUST and CREDIBILITY were established early
Lead and the Community

THEC Program Areas

**FAMILY HEALTH**
Blood lead testing, education, and support for families to reduce lead exposure

**AIR QUALITY**
- Smelter Emission Reductions: Identifying the main sources, prioritizing projects, and reducing metals in the air
- Dust Control: Preventing windblown dust
- Air Monitoring: Continuous testing and reporting of air quality levels

**HOME & GARDEN**
- Home Renovation Support: Advice and equipment for renovation projects
- Garden & Yard Soils: Soil testing and prioritized soil replacement or covering

**2010 & BEYOND**
Creating a Healthy Environment

**PARKS & WILDLANDS**
- Community Greening: Covering areas of bare soil
- Ecosystem Management: Projects to assess, restore, conserve and enhance ecosystems

**PROPERTY DEVELOPMENT**
Procedures to manage risks from smelter metals when developing or redeveloping lands
Lead and the Community

Air Quality

• Replaced blast furnaces with KIVCET flash-smelting technology (1997)

• Lead levels in air dropped by about 70% within two years

• Lead in community dust dropped by about 40-50%

• Children’s lead levels also dropped by about 40-50%

• Now focused on fugitive dust
  • Open mixing
  • Open storage
  • Open transportation
Lead and the Community

Family Health
Lead and the Community

Exposure Pathways Study - 1992

• Children’s lead, environmental data and questionnaires for 241 children – analysis using structural equations modeling
  • indoor house dust - dominant source of lead for children, especially those under 18 months
  • smoking in the home, presence of pets, and engaging in mouthing behavior - higher BPb
  • eating homegrown produce and living on properties with less bare soil - lower BPb
Lead and the Community

Educational Events, Testing
Lead and the Community
Family Health

History of Children's Blood Lead Levels in Trail compared to Background

Average Blood Lead Level (μg/dL)

- 25
- 20
- 15
- 10
- 5
- 0

Age Groups
- US Avg - 6 mos - 6 yrs
- Trail 1975: 1-3 yrs
- Trail 1989: 2-5 yrs
- Trail 1991-00: 6-59 mos
- Trail 2001-12: 6-36 mos

New Lead Smelter started


Trail: 12-36 mos.
Trail: 24-60 mos.
Trail: 6-60 mos.
Trail: 6-36 mos.
US National Average

Teck 100
Celebrating One Hundred Years
2012 Blood Lead Histogram - Age 6 to 36 Months

Geometric mean: 5.4 μg/dL
Number tested: 122
Range 1.3 - 21.1 μg/dL
≥ 10 μg/dL: 16%
≥ 15 μg/dL: 3%
Community Consultation

Committee held broad community consultations in 2000 to help set the goals and the objectives for the program.

By 2010 these initial goals had largely been achieved so the committee conducted another round of broad community consultations requesting input on new health and air quality goals as well as programs for Family Health, Home & Garden, and Air Quality. The public strongly endorsed the children’s lead and air quality goals as well as proposed programming.

- 85% supported a proposed children’s lead goal for a community average of 4µg/dL for children 6-36 months by 2015
- 76% supported the goal to reduce the concentration of lead in air to 0.2µg/m³ by 2018

The consultation also revealed low public awareness of the program. To raise awareness, program promotion has increased, there is more contact with parents and more links with community groups that support young families.
Focus on children has led the Trail Health and Environment Committee to look at all aspects of early childhood development.

Provincial Early Childhood Development Development Index mapping is regularly conducted and looks at:

1. Physical health and well being
2. Social competence
3. Emotional maturity
4. Language and cognitive development
5. Communication skills

29% of BC’s children arrive at school not meeting the developmental benchmarks they need to thrive. The majority are from middle class families.

- In the Kootenay Columbia School District, 20% of children do not meet these benchmarks.

Source: Human Early Learning Partnership
Good early childhood experiences in stimulating and nurturing environments lead to:

• Better school grades
• Better self-esteem
• Better social skills
• Better record of employment
• Fewer social problems
• Fewer health problems
• Less likely to be teen parents, use drugs or be involved in crime*

*Source: McCain & Mustard, Early Years Study, 1999

Family Action Network (FAN) has been created to:

“… provide seamless, integrated services, integrated supports, services and programs for families.”

Lead and the Community
Lead and the Community

www.thep.ca

![Trail Area Health & Environment Program](Image)

### Did you know?
The first years of life are crucial for brain development, when children are also most at risk from the effects of lead exposure.

### Welcome to THE Program
The Trail Health & Environment Committee welcomes you to our community-led program promoting people’s health and the environment related to smelter metals. We offer up-to-date, practical information and support for family and environmental health.

With over 20 years experience, we’ve met all our goals for air quality and reduced lead exposure in children. Our collaborative approach has been recognized with a BC Premier’s Award.

If you are a parent or planning a family, a local resident, someone new to the area, or a health professional, please check out what our program has to offer. You’ll find our most popular information in...
Lead and the Community

2012 Province of BC Premier’s Award
Community Engagement Learnings

• Engage early
  • Invite your communities and key stakeholders on the journey with you; you don’t need to have the answers or present a solution for which you want buy-in
  • A strong team has representation at all levels

• Be open and transparent
  • It builds trust and confidence

• Accept that there will challenges; celebrate small successes

• Be an equal participant in the process
  • You may need to lead it but don’t drive it

• Grow and develop further as goals are broadened
  • Focus on children’s lead levels lead to a conversation on early childhood development which lead to the creation of FAN, which is focusing on all aspects of early childhood development.