Best Practices in Managing Mining Accidents

For NAALC Representatives
October 31, 2007

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Director of Mines
Agenda

• History of Mining Disasters in Alberta
• Worker and Public Perception.
• Alberta’s Mining Legislation.
• Alberta’s Mining Statistics.
• Factors in our Success.
• The Continuing Challenge.
Alberta, has experienced its share of mining disasters:

- May 1902 - Coal Creek Mine – 128 fatalities.
- June 1914 - Hillcrest Mine – 189 fatalities*.
- December 1935 – Coalhurst Mine – 16 Fatalities.

* Largest disaster in Canadian mining history!
HILLCREST
JUNE 19, 1914

CANADA'S WORST
MINES DISASTER

ON FRIDAY, JUNE 19, 1914, AT 7:30 A.M.
EXPLOSIONS TORE THROUGH THE TUNNELS
OF THE HILLCREST MINE. DESPITE HEROIC
RESCUE EFFORTS, ONLY 46 OF THE 255
MEN WHO WENT UNDERGROUND THAT DAY HAD
SURVIVED. 169 MEN WERE KILLED AND THE
HILLCREST MINE HAD CLAIMED ITS PLACE
IN CANADIAN HISTORY.

The Last Mantrip
They have pulled the last mantrip
He'll ride into the mine no more
He will not have to live with
Lust or smoke or glare
He will travel to the sunlight
With air so sweet and pure
He will leave his mining knowledge
To his sons, I'm sure
And for all the strife and problems
He hopes they'll find a cure.
They have pulled the last mantrip
He'll ride into the mine no more
We owe so much to him
And the ones who've gone before

This monument is dedicated to the underground
coal miners and their families whose hard work
and sacrifices helped to establish our communities
and our country they will not be forgotten.
• Worker Perception:

“Legislation is written in the blood of workers!”
• Public Perception of Mine Safety:

– The public perceives “mining” as a hazardous occupation!

– We believe that Alberta (and Canada) is slowly changing that negative public perception.
• Alberta’s current “mining” legislation:
  – This legislation was heavily influenced by the Hillcrest Disaster of 1914.
    • As a result, most details in the Code related to underground mining.
    • There is a lesser focus on surface mining, but
    • Other sections of the Code apply to mining.
• The Occupational Health and Safety (OHS) Code:
  – Is a “Code of Practice” that is enforceable!
  – Tripartite committees are involved in assessing changes.
  – An OHS Council oversees the process on behalf of the Minister.
  – Changes to the Code do not require Legislative approval (like Acts and Regulations).
  – It is “current” (i.e. undated every 2-years).
• Alberta Today!

– Statistics show that mining in Alberta is now one of the safest industries in which to work!

– Keep in mind, however, that today mining in Alberta is predominately surface mining!
Lost Time Accident Frequencies - by Jurisdiction
Proportion each Major Industry Sector Comprises of Employer Accounts, Total Person-years, Lost-Time Claims, Modified-Work Claims, Disabling Injury Claims and Days-Lost - WCB - Alberta 2006

(Website: http://employment.alberta.ca/documents/WHS/WHS-PUB_oid_2006.pdf)
• Recent Fatality History:

  – Last mining fatality occurred in 1999.

  – Three separate fatalities in that year!
    • 1 in an underground coal mine.
    • 2 at surface coal mines.
• Factors in our Success!
  – Alberta believes that:
    – The best practice for managing mining accidents is to avoid them in the first place.
    – Responsibility for accident avoidance rests with the employer.
    – Workers must cooperate with management in efforts to work safely and to minimize hazard exposure.
Factors in our Success!

- A regulatory requirement for mandatory:
  - Hazard assessments (with worker participation where practicable!)
    » Before work begins, and
    » Prior to construction of a new work site.
  - Procedures to mitigate identified hazards.
  - Training in safe work procedures.
  - Reporting of incidents with “potential for injury”.
<table>
<thead>
<tr>
<th>Reportable Incidents - Type</th>
<th>Type-Total</th>
<th>Number of Incidents from 1999 to 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1999</td>
</tr>
<tr>
<td>Rollovers</td>
<td>86</td>
<td>14</td>
</tr>
<tr>
<td>Equipment Collisions</td>
<td>70</td>
<td>6</td>
</tr>
<tr>
<td>Runaway/Out of Control</td>
<td>56</td>
<td>3</td>
</tr>
<tr>
<td>Pit Wall/Spoil Failure</td>
<td>40</td>
<td>2</td>
</tr>
<tr>
<td>High Voltage / Electrical Contacts</td>
<td>39</td>
<td>2</td>
</tr>
<tr>
<td>Structural Failure</td>
<td>36</td>
<td>0</td>
</tr>
<tr>
<td>Fires – Equipment and Other</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>Other / Misc.</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>Falling Material / Hit by</td>
<td>26</td>
<td>5</td>
</tr>
<tr>
<td>Lifting Device Related</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>Fall From Height</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td>Blasting Related</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>Entangled in Equipment</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Lockout Related</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Caught in Conveyor</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Eye injury</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Pinned Against</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Explosion (Drying Plant)</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Breach of Tailings Dyke</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Gas Line Contact</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL FOR YEAR</td>
<td>503</td>
<td>36</td>
</tr>
</tbody>
</table>
Factors in our Success!

- Trained emergency response personnel at each mine site (unless exempted by Director).
- An enforcement policy that encourages a cooperative working relationship between inspectors, employers and workers.
  - That policy allows for negotiation on timing for compliance (on non-imminent danger issues).
Factors in our Success!

- WHS inspections by contracted content-experts adds credibility in the field.
- Regular inspections ensure quality control.
- Punitive penalties used as a “means of last resort”.
• Punitive Penalties!

– Provincial Legislation: Potential large financial penalties for non-compliance. (Up to $500,000 for 1\textsuperscript{st} offence, $1,000,000 for a subsequent offence!)

– Federal Legislation Re: Potential criminal charges for gross negligence. (i.e. fines and / or imprisonment.)
The Continuing Challenge!

- High turnover of employees.
- Lack of availability of experienced trainers.
- New hires are relatively inexperienced.
- Younger workforce with different life styles:
  - Increased use of personal electronic devices like CD, MP3 & DVD players and cell-phones.
  - Increased use of drugs and alcohol at worksites.
  - Less respect for the equipment.
  - Fatigue - Long working hours (12 hr shifts with 1.5 to 2.5 hr / day for commuting).
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Questions?