

## Worker Seriously Injured by a Rock Burst in a Ramp's Stope Face

A worker was using paint to mark the stope face in a ramp under excavation so it could later be drilled for the next heading. He was a little more than a metre away from the stope face when a violent rock burst occurred in the lower right corner and expelled three tons of rock over a distance of five metres. The worker was thrown to the ground and suffered a major pelvic fracture and multiple internal and external bruises.

### Serious Accident

**Date:** January 15, 2015

**Category:** Underground mine

**Activity:** Marking the stope face

**Job:** Bolter

### Causes of the Accident

- Unfavourable combination of the southeast to northwest parting plane, of the northward ramp development and of the presence of softer brecciated material behind the stope face.
- The recorded frequency, amount and location of events preceding the rock burst did not allow workers to anticipate that event in precisely that location.



### Preventative Measures for the Employer

- Change the ramp roof support specifications.
- Install additional support.
- Add wire mesh to stope face.
- Mark stope face from a distance using a pole.
- Train workers.
- Change the ramp's orientation to take geological structures into account.
- Perform stress-relief drilling during increased geological activity.
- Indicate geological structures on development plans.
- Improve seismic system and train users.
- Implement a daily event report.

## Additional Information

### Current research on ground control at the IRSST.

- Corthésy. R., Leite. M.H., *Integrated inverse-problem method of in-situ stress measurement*. IRSST, 2013.
  - Available online at <http://www.irsst.qc.ca/en/-project-methode-integree-de-mesure-de-contraintes-in-situ-par-probleme-inverse.-2013-0038.html>
- Li. L., *Studies of interaction between fill and containment structure for safer barricade design*. IRSST, 2013.
  - Available online at <http://www.irsst.qc.ca/en/-project-etudes-de-l-interaction-entre-le-remblai-et-les-structures-encaissantes-pour-une-conception-plus-securitaire-des-barricades-2013-0029.html>

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