

COAL MINE FATALITY IN MINE HANDLOVÁ COMPANY HORNONITRIANSKE BANE PRIEVIDZA, A.S. 10.08.2009

Main Mining Authority
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graph TD; A[Hornonitrianske bane Prievidza, a.s.] --- B[coal section Mine Handlová]; A --- C[coal section Mine Nováky]; A --- D[coal section Mine Cigel'];
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Hornonitrianske bane
Prievidza, a.s.

coal section
Mine Handlová

coal section
Mine Nováky

coal section
Mine Cigel'

Lignite

Total excavation: 2 100 000 t/year

Coal section Mine Handlová

- Excavation: 240 000 t/year
- gassy mine, II. class of danger
- Mine with danger of coal and gassy outbreak
- Coal prone to spontaneous coal combustion

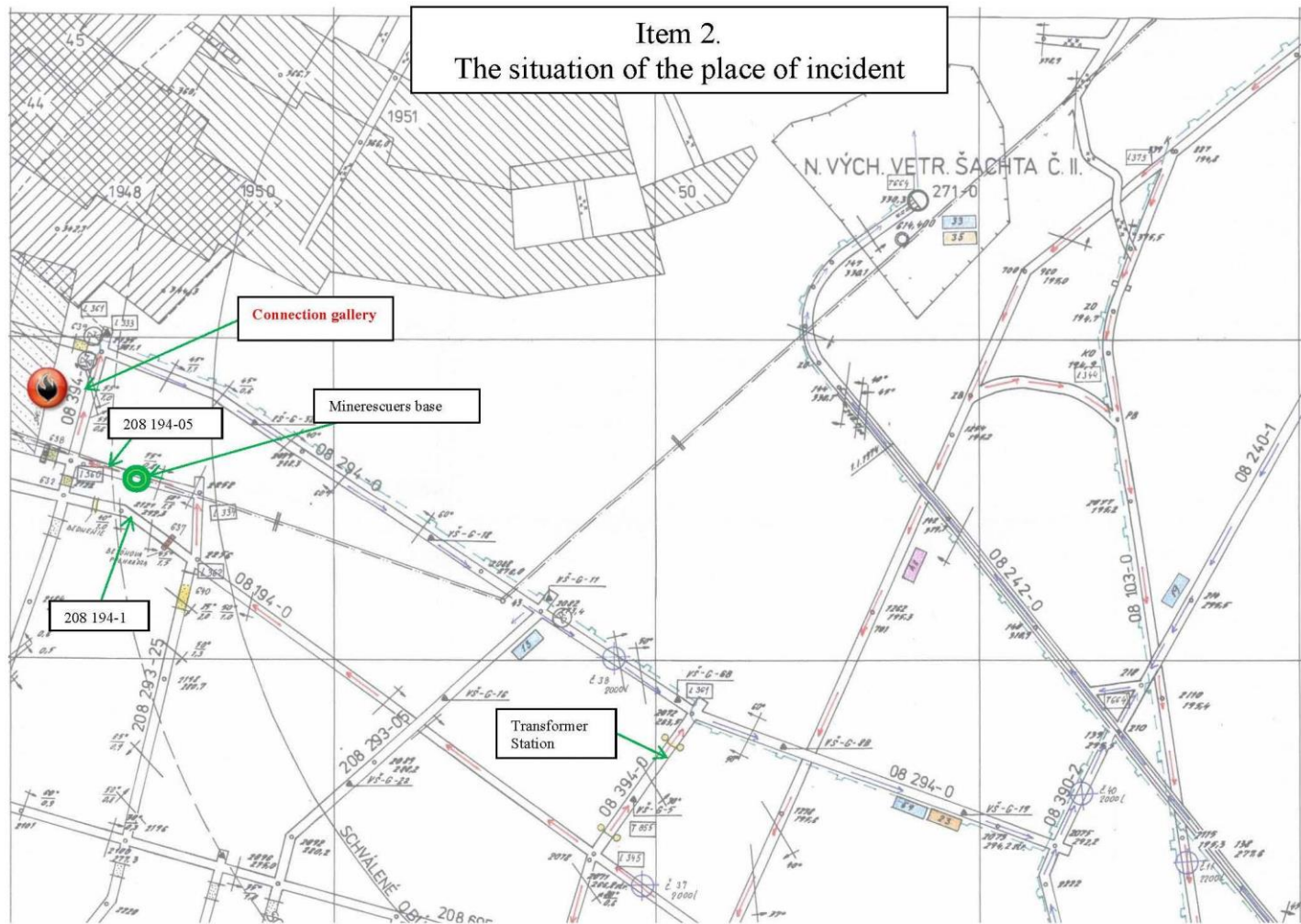
Situation before coal smouldering

- 22.07.2009 – first smouldering » liquidated
- 06.08.2009 – second smouldering » liquidated on 07.08.2014
- 10.08.2009 – third smouldering; from 5:39 – 7:12 a.m.
 - :
 - Increasing content of CO carbon mono oxide over 0,001 %,
 - Fire app. 15 m from cross-cut in full profile
 - Missing fire water pipeline
 - Fire fighting with pump from sump (200 l/ min.)
 - Situation cannot be operated by „ordinary miners“

Before explosion

- 7:24 – departure of rescue brigade on fire fighting
- 8:54 – arrival of rescue brigade on destination
- 9:11 – taking over fire fighting by rescue brigade
- Required reduction ventilation flow
- 9:12 – opening of ventilations doors on substation
- 9:22 – revers of ventilation flow
- **9:22 – 9:25 – explosive combustion of gases**

Situation at explosion - map



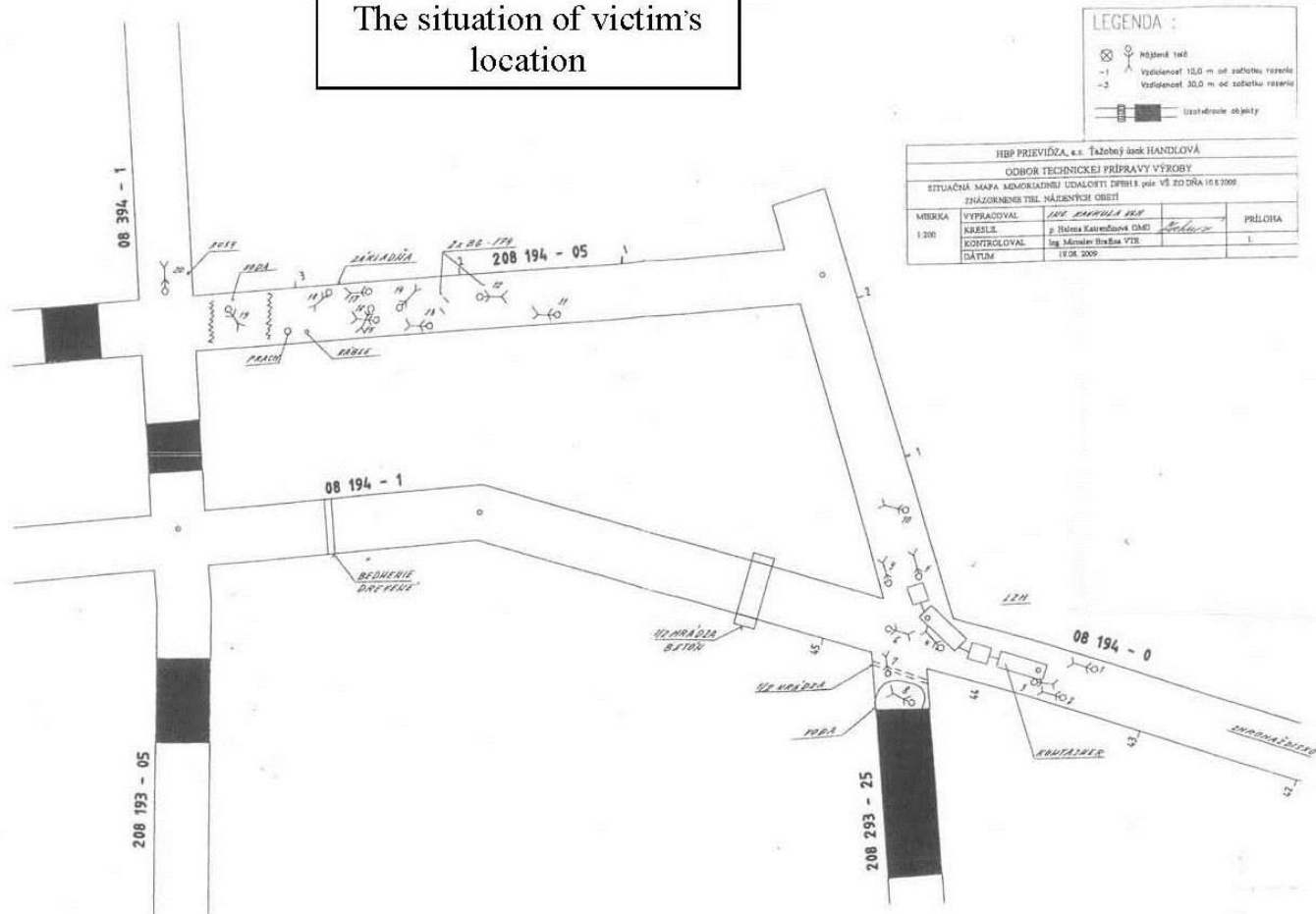
Consequences of accident

- **Fatality of 20 workers :**
 - 11 mining rescue brigades
 - 9 miners

- Overpressure damage of lungs
- Acute intoxication of CO carbon mono oxide

Situation after explosion - map

Item 3
The situation of victim's location



Sources and causes of accident

□ Source:

- Explosive combustion of gas mixture CO, H₂, CO₂ and methane

□ Cause:

- Original concentration of methane in area
- Exhalation of methane as a result of thermic process in coal
- Influence of pressure fire gradient
- Influence of dumping of hanging wall
- Opening of doors on substation
- Deformation of cross-cut
- Faulty determination of base for mining rescue brigades

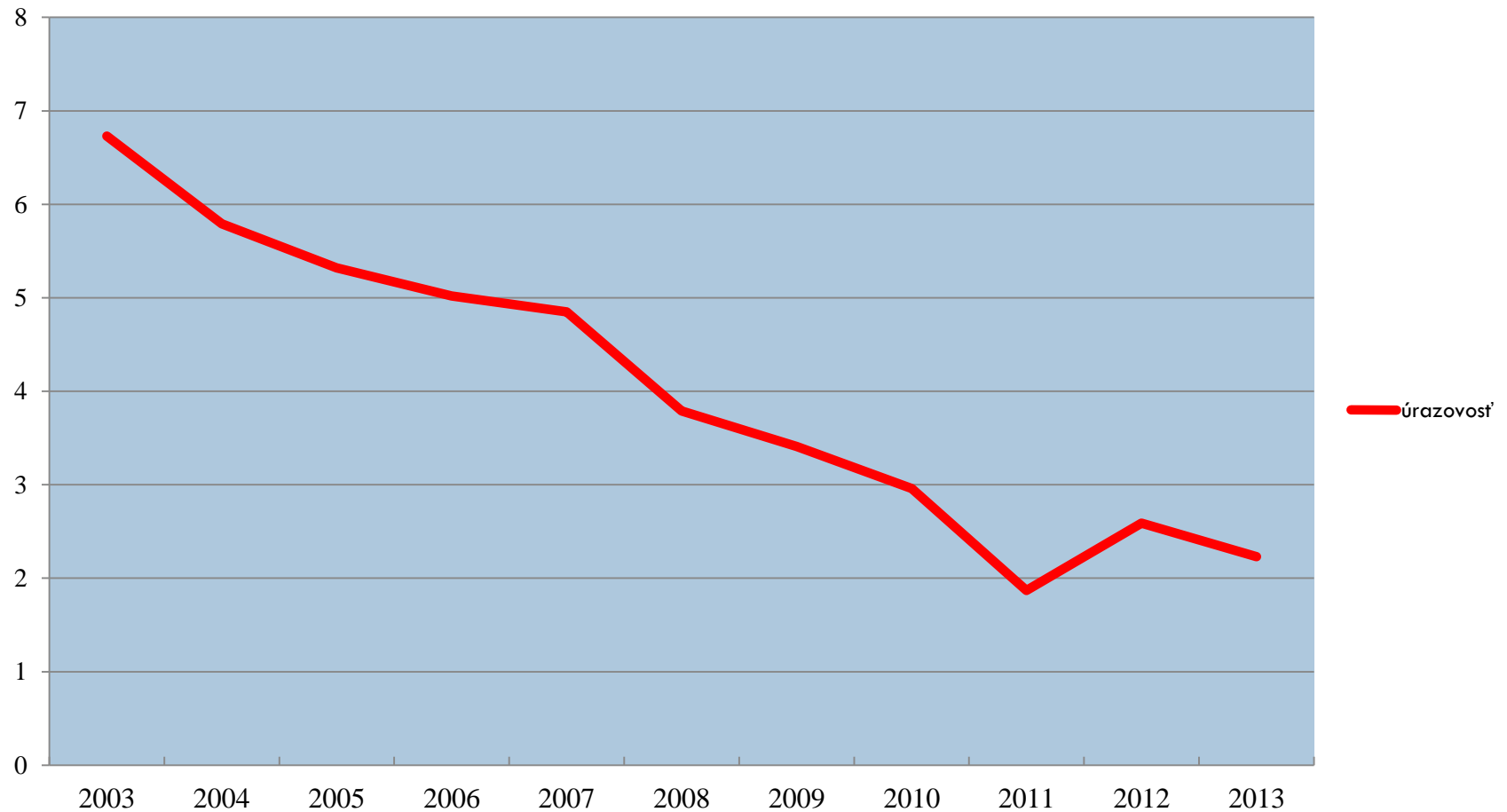
Other deficiencies found in causal relation

- No solving of predictable accident (methane explosion, coal dust explosion and other combustible gasses) in operative part of emergency plan
- Missing mining fire water fire pipeline
- No recalling other workers from danger zone
- No closing of fire
- No giving the order to measure gasses concentration

Investigation and measurement

- Investigation OBÚ in Prievidza
- Writing up Investigation report
- Working up expertise
- Imposing of maximal penalty to company HBP, a.s.
- Issued binding orders to eliminate deficiencies also on others coal sections (mines)
- Documents handed over to Police of Slovak republic to determine criminal responsibility

Development of accident rate in years 2003 - 2013



Conclusion

- In spite of fact that accident rate in Slovakia is declining it is apparent that is absolutely necessary to pay sufficient attention to questions of safety mainly with regards to prevent any similar dangerous situations by prevention.

Thank you for your attention

Zdar Boh !