



Sindicatum

sustainable resources

Coal Mine Safety Project (Mei Kuang An Quan)

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Sindicatum Climate Change Foundation**

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Sindicatum Climate Change Foundation

- Not-for-profit
- Launched by SSR in 2009 to add a social dimension to its commercial projects
- Supports and encourages education and research relating to sustainable energy
- Promotes best practice and use of appropriate technologies

<http://www.sindicatumccf.org>

Coal Mine Safety Project

- Improve safety in gassy mines from application of best practice gas drainage, utilisation and greenhouse gas mitigation
- Inform Chinese regulators and decision makers on mine safety lessons through case studies
- Develop a case study based on the Pike River disaster to ensure the mistakes are not repeated
- Input to the UNECE “best practice” initiative and liaison with global institutions and Universities to disseminate.

Pike River Coal Mine case study

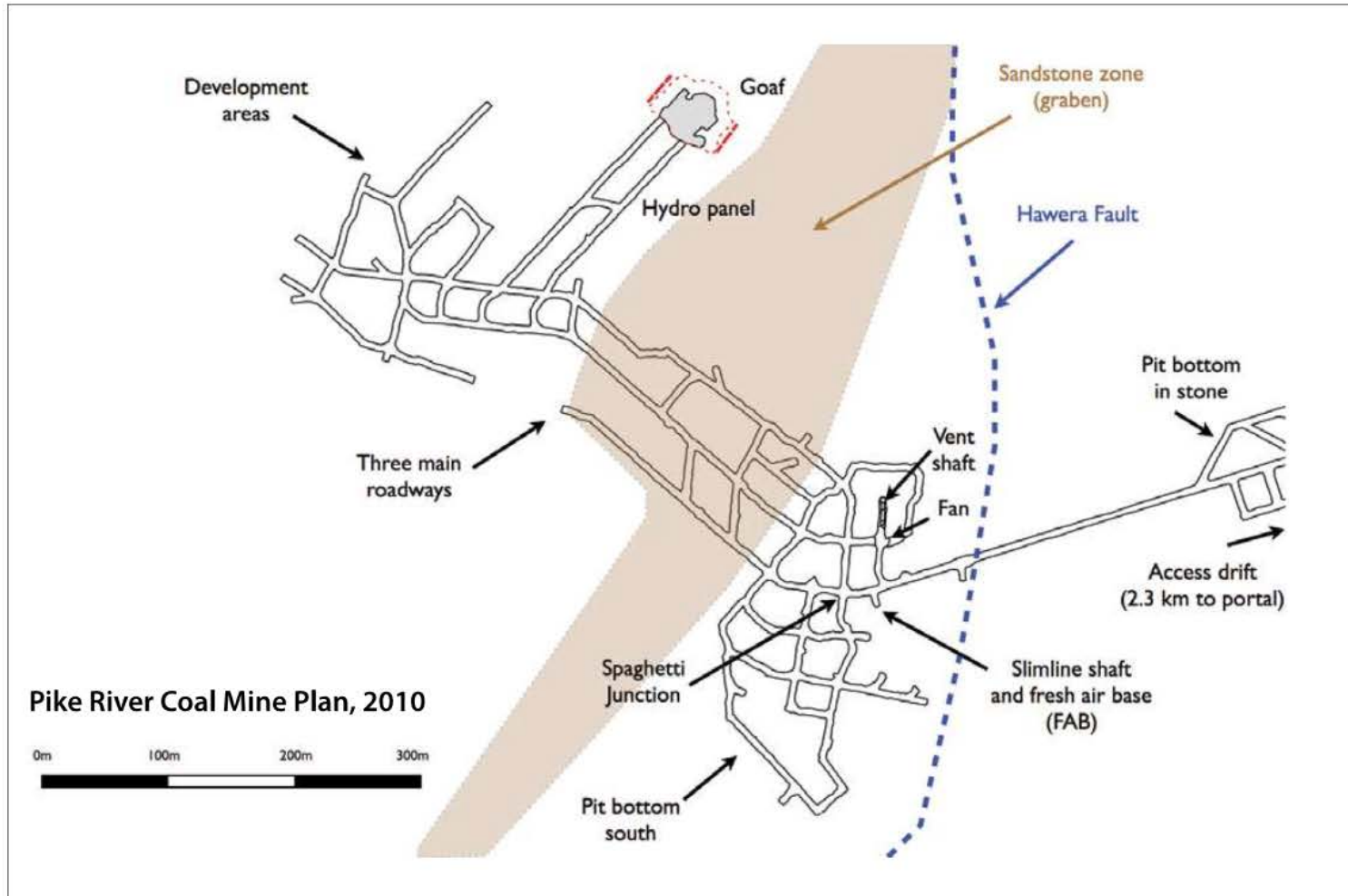
On 19 November 2010, 29 miners were killed in an explosion at the Pike River coal mine, 46km NNE of Greymouth, west coast, New Zealand, South Island.



Pike River Coal Mine case study



Three further explosions and a fire occurred before the mine atmosphere was made inert and the mine sealed



Pike River Coal Mine case study

Financially supported by SCCF, a team of three Mining Engineers went to NZ in November 2012 to:

- Construct a case study as an international mine safety educational tool aimed at governments, regulators and mining companies
- Work with the Families Committee to investigate the possibility of re-entering the sealed working area of the mine to recover the family members for proper burial.

A quick tour - Greymouth



Mine buildings merge into forest



Surface access to the worked area of the mine



Outcrop of coal-bearing formation



Aerial view of the mine portal



Memorial to the mine disaster victims



Royal Commission Report on the Pike River disaster



An independent investigation by an august body to determine:

- Cause of the explosions and loss of life
- Effectiveness of search, rescue and recovery
- Adequacy of the law and its implementation

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Royal Commission Report on the Pike River disaster



Published 5 November 2012, 16 principal recommendations including:

- Significant changes to H&S legislation, administration and enforcement
- Improve corporate governance practices to better manage risks and monitor H&S compliance
- Mine managers should consult best practice guidance
- Importance of worker participation in H&S

The incident and its management

- Slow initial response by mine management in confirming and reporting the explosion
- Emergency procedures neither substantive nor rehearsed
- Police responsible for incident control but unprepared and unqualified to manage
- In the absence of expert leadership and coordination no attempt could be safely made to enter the mine
- Families of victims ill-informed and frustrated by lack of action on recovering the bodies

Cause

- **Various possible gas accumulation and emission scenarios with high likelihood of occurrence**
- **Various ignition sources present - unprotected electrical equipment**



Contributory factors

- Geological problems, delays, financial stress, premature production
- Inadequate ventilation and gas drainage
- Lack of experienced staff underground
- No management action despite repeated high gas concentration warnings
- Ineffective corporate oversight of H&S
- Ineffective mine safety legislation and enforcement

Impacts

- Families and the community devastated by the loss
- Good support by the community for the Families but lack of action by the authorities and the new mine owner on recovery operations
- The Royal Commission Report galvanised the NZ government into reviewing its H&S legislation, administration and resources
- The tragedy, poor coal market and apparent loss of national confidence has led to questions about the future of underground coal mining in NZ

Some mine safety lessons learned



- Robust mine H&S legislation, strong enforcement and workforce safety participation is essential to counter pressures of production and finance
- Failure to adopt best practice guidance can have tragic consequences
- Oversight of H&S management and compliance is a fundamental element of corporate governance
- Mine design and access should not be compromised in order to meeting stringent environmental protection criteria



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