



Department of Mineral Resources

**Progress on the management and rehabilitation of Derelict
and ownerless mines 15 September 2010: Implementation
Plan**



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Definition



History of the legacy

The database of D&O Mines

Prioritisation & Ranking of D&O Mines

Assessment of the financial impact

Selected Rehabilitated Sites

Acid Mine Drainage in the Witwatersrand Basin

Implementation plan

Conclusion

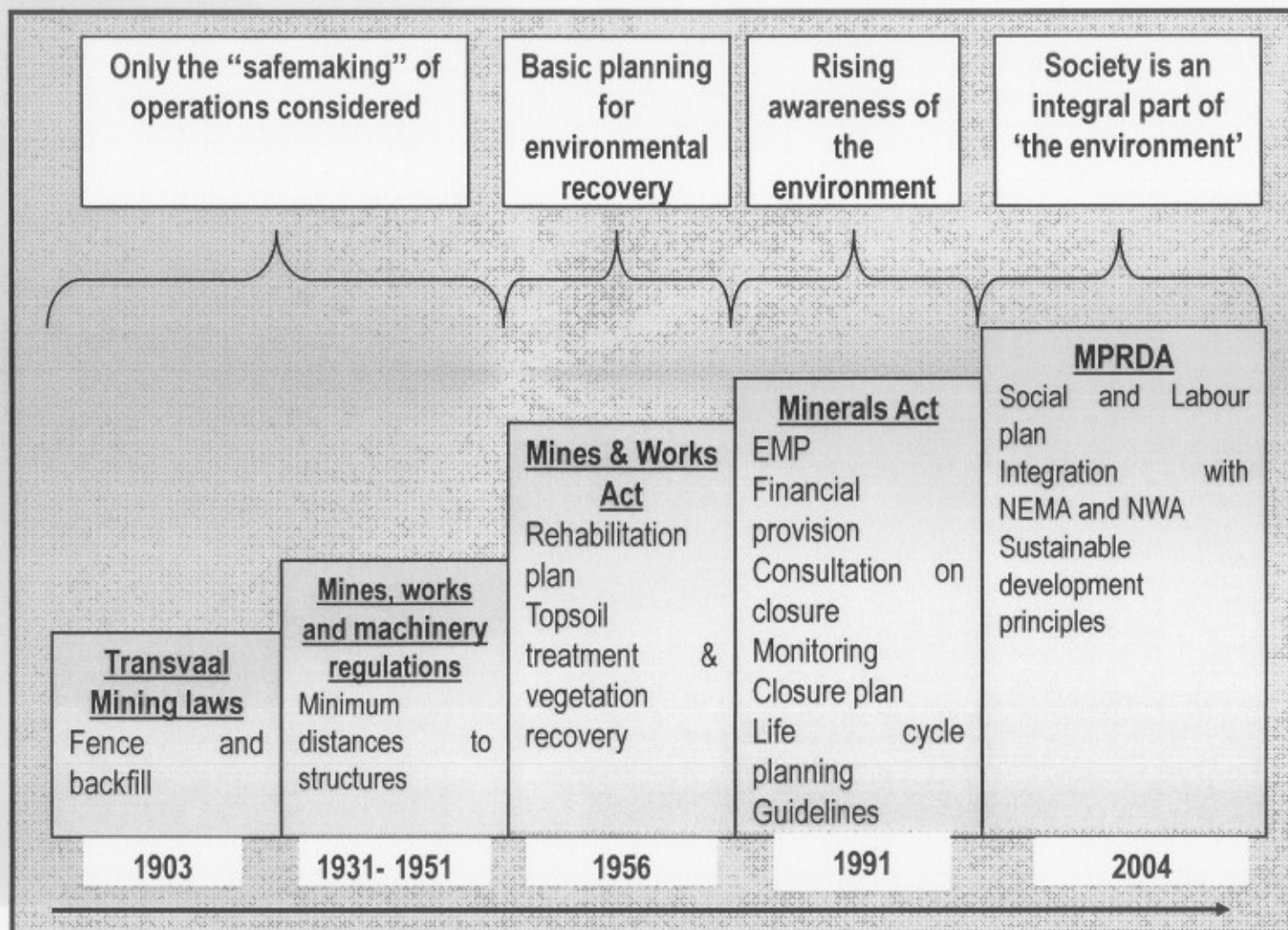


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HISTORY OF LEGACY...



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DEFINITION OF D&O

- Mines whose owners are not operating nor maintaining and cannot be traced
- Often confused with just abandoned mines with traceable owners
- Where owners found, law enforced!!!



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ENVIRONMENTAL IMPACTS RELATED TO D&O MINES

- Health and safety issues due to direct access
- Surface water pollution
- Groundwater Pollution
- Air pollution
- Damage to sensitive environments
- Impacts on current and future land-use
- Impacts on heritage resources



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MEASURES TAKEN TO ADDRESS THE IMPACTS

- Developed a database on D&O
- Prioritization & Ranking has commenced
- Assessment of Financial Requirements
- Implementation of rehabilitation has commenced



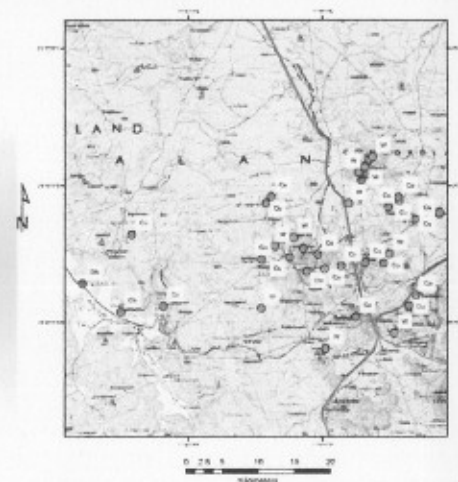
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DATABASE OF D&O MINES

- **Approximately 6 152 sites identified**
- **Compiled by:**
 - Identifying mineral deposits
 - Verification with DMR Regions and on field verification and ranking visits.
 - Compiling data from other sources, with verification
- **New applications mean that the database is dynamic *i.e.* needs continual updating over time**
- ***This is the first time in the history of South Africa that a comprehensive database has been developed.***
- This provides a detailed record of abandoned mines in South Africa, allowing systematic management of problems



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GROUPING & PRIORITISATION

- Grouping sites according to commodities and their expected environmental impacts
- Grouping sites according to provinces and the scale of rehabilitation
- Sites which pose immediate threat to communities were prioritised
 - Asbestos Sites
 - Openings, trenches and Shafts within the Gauteng region/ Witwatersrand Gold Basin



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PRIORITY PROJECTS

PROVINCE	SITES IDENTIFIED FOR LOCALISED REHABILITATION PROJECTS	SITES IDENTIFIED FOR LARGE-SCALE REHABILITATION PROJECTS
Limpopo	Open shafts in the Giyani Greenstone Belt, Asbestos workings	
Gauteng	Remaining Open Shafts in the Scott Asbestos Mine Edendale Lead Mine	Water, radioactivity, windblown dust and safety issues related to abandoned gold and uranium mines in the Witwatersrand Goldfields.
Kwazulu-Natal		Water and safety issues related to abandoned coal mines
Eastern Cape	Lusikisiki Quarry	
Western Cape	Open shafts and workings related to tin and manganese mining	
Northern Cape	Open shafts on "Cornish Mines" in the Namaqualand Copper District & Asbestos Workings	Water impacts related to copper mining in the Namaqualand Copper District.



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RANKING OF D&O MINES

- Given the large number of sites, priority to be given to those sites posing the greatest risk to society and the environment
- Ranking was implemented to refine the prioritisation
- 85 sites have been ranked and a number of priority areas have been identified for immediate rehabilitation
- **ongoing process will take about 5 years depending on availability of funds**



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ASSESSMENT OF FINANCIAL IMPACTS

- A desktop approach has been utilised:
 - Assumes that all mines/workings will be rehabilitated
 - Uses the guideline document for financial provision as well as estimates for specific sites
 - A figure of approximately R30 billion is estimated for the State's liability due to D&O Mines.
 - The figure is not static – It has to be reviewed on regular basis



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THE COSTS OF REHABILITATION VARIES: NO SIMPLE MODEL !!



Osizweni (Kwazulu-Natal)
– Extensive rehabilitation
will be required

Rehabilitation • End
• Use

Rehabilitation • End
• Use

- Some mines have minimal impact on the environment and will require no rehabilitation
- Others will require basic rehabilitation to satisfy safety requirements
- In some cases specialised rehabilitation is suggested, for example the installation of bat grates in shafts in conservation areas



Bat grate installed on an abandoned mine in a conservation area in the USA



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REHABILITATION ACHIEVEMENTS TO DATE SINCE 1994

- Asbestos Mines
 - A total of 48 sites have been rehabilitated
 - Northern Cape & Limpopo
- Gold Mines
 - 108 dangerous trenches and shafts rehabilitated
 - General Maintenance of D&O slimes dams in Gauteng to maintain the grass and prevent runoff



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REHABILITATION ACHIEVEMENTS TO DATE SINCE 1994 .. CONT

- Coal Mines
 - Prevention of access to dangerous coal mine (Transvaal & Delagoa Bay Mine near Emalahleni)
 - A plan for full rehabilitation developed (cost over R100 million to implement)



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