

Rehabilitation of the Trekkelano Mine – a Health and Safety Perspective

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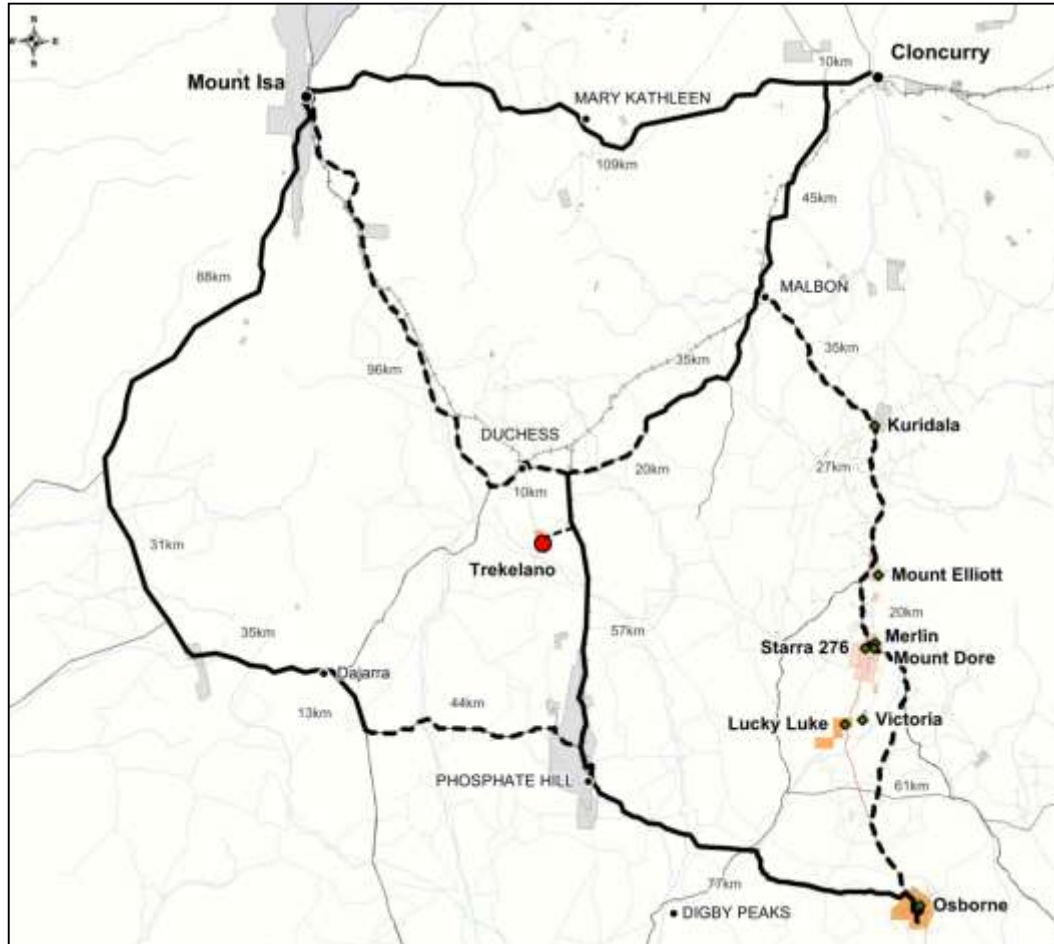
Rehabilitation of the Trekelano Mine

- Location
- History
- Recent Mining Activity
- Closure Criteria
- Closure Assessments
- Access and Security
- Summary



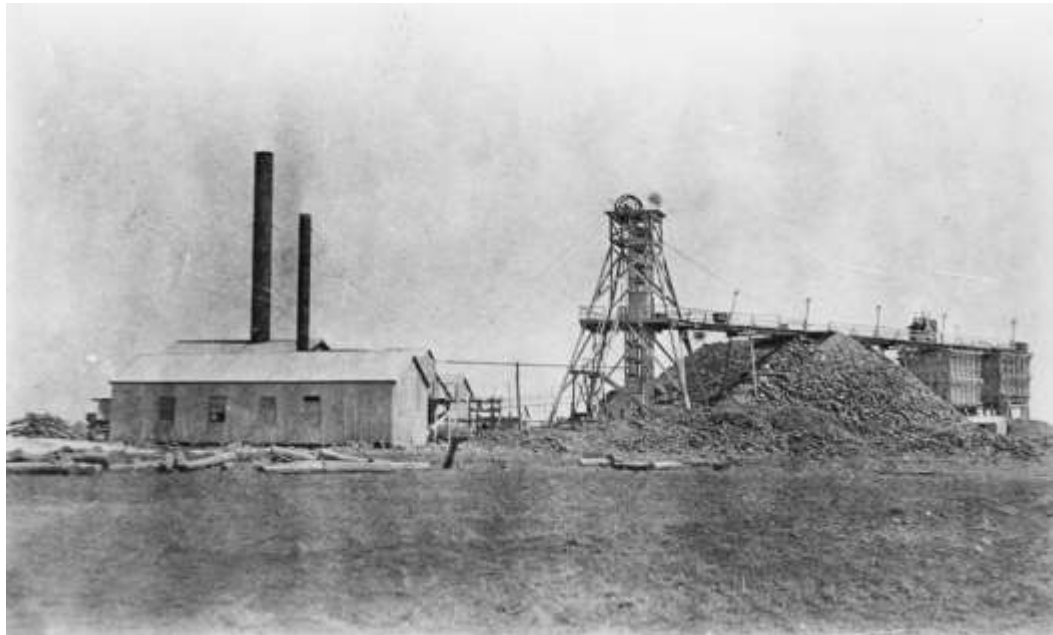
Location

- 94 kilometers south east of Mt Isa; and
- 125 kilometers by road from the Osborne Mine.



History

- The longest continuous producer from the Cloncurry Mining Field 1911-1945;
- One of the few mines where ore was mined below surface zones to 213 m;
- Provided regional infrastructure (rail) during the depression years;
- Produced 188,000 tons @ 10.9% copper;
- Of all the mines purchased by the Hampden Company only Trekelano justified the purchase price;
- 5 shafts and a small open pit were developed; and
- Only number 5 shaft is still apparent.



History



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Recent Mining Activity

- Open cut mining from two open pits ran from 2006-2009;
- Produced 2.4Mt @1.6% copper and 0.42 g/t gold;
- Transported 125 kilometres by road train to Osborne;
- 2 open pits developed - Inheritance and Trekelano 2;
- 24Mt waste rock dump;
- Operated for 3 years without a Lost Time Injury;
- Rehabilitation was completed using the mining fleet and existing safety management systems immediately after mining completion.



Closure Criteria

- Ensuring the safety of humans and fauna is protected;
- Developing non-polluting and stable landforms with low maintenance requirements;
- Achieving an agreed final land use consistent with pre-existing and surrounding systems; and
- Ensuring impact on natural ecosystems is limited.



Closure Assessments – Open Pits

- A geotechnical review of stability was undertaken to determine any safety issues or areas of instability;
- Rock bunds were constructed of fresh end dumped rock;
- Bunds are a minimum of 2 meters in height and 4 meters base width;
- Bunds are located a minimum of 10 meters beyond any areas of instability;
- Vehicle access into the voids is blocked with locked gates for authorised access only; and
- Thorough hydrogeological assessments were undertaken to demonstrate that any contaminants will be contained and do not impact on surface water or groundwater resources – modelled for five successive 1:1,000 year wet seasons.



Closure Assessments – Waste Rock Dumps

- Progressively characterised for acid producing potential during the mining phase;
- Kinetic waste rock trials also undertaken;
- Waste is non acid producing with significant net alkalinity;
- Dump battered down and topsoiled;
- Infiltration (rock) basins constructed on dump surface reducing run-off and erosion;
- Retention bunds placed on top of batters and run-off directed to rock armoured ramps; and
- Any run-off is contained to environment dam and Inheritance Pit;



Closure Assessments – Land-use

- The lease areas have generally been rehabilitated to re-establish natural systems;
- The area has been covered with a Term Lease;
- There is a quarry permit and development approval in place and we are currently producing road base and other material for DTMR; and
- There is an Indigenous Land Use Agreement in place with Yulluna People to transfer the land lease on surrender of the MLs.



Access and Security

- Locked gates have been established in bund walls to allow for authorised access to the pits for sampling;
- The old workings have been fenced and signposted to restrict access;
- The mine site is surrounded by barbed wire fences with warning signs on the gates; and
- Motion sensing security cameras are in place to record any trespassers.



Access and Security

Locked gates don't stop everyone!



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Summary

- The Trekelano Mine was rehabilitated immediately on completion of mining to take advantage of the mining fleet and existing safety management systems;
- Geotechnical and geochemical assessments were undertaken to ensure the risks to human health and fauna were effectively managed;
- The old workings were secured with fencing and signage;
- The open pits were bunded with locked gates for authorised access;
- The mine site is fully fenced with access points signposted;
- Security cameras were put in place to record unauthorised visitors;
- The site has been licensed and developed for production of quarry material; and
- An agreement is in place to transfer the land to the Traditional Owners on surrender of the mining leases.

