KIMBERLEY QUARRY PTY. LTD.

QUARRY MANAGEMENT PLAN

CHAPMAN VALLEY QUARRY

28°41'18.8"S 114°47'44.2"E - CHAPMAN RD E, EAST CHAPMAN WA 6532

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1. INTRODUCTION

This Management Plan is submitted in support of a new Development Application for the Chapman Valley Quarry, lodged with the City of Greater Geraldton.

The application seeks to formalise an expanded operational boundary and further envelope to encompass both current and proposed operational areas, including stockpile zones, the extraction pit, and supporting infrastructure.

The underlying land use remains unchanged as Extractive Industry (Hard Rock), previously approved under Development Approval TP16/187 issued on January 5, 2017.

This expansion is specifically intended to support the upcoming Geraldton Port project, with no new capital works proposed.

2. QUARRYING METHOD AND PLANNING PROCESS

The quarrying method employed involves conventional multi-directional benching.

Bench Dimensions: Active bench thicknesses are commonly around 25-70 meters in width, while terminal bench widths are targeted at a minimum of 10 meters. Quarrying bench heights are nominally 10-15 meters, with a vertical to 10° dump on the first row of blast holes, aiming to produce a working batter angle between 80 and 90°.

Loading Operations: Front End Loaders (FEL) or excavators load directly from the shot rock pile to haul trucks, generally from areas more distal from the working face. When working and loading near faces, operators adhere to relevant work instructions.

Quarry Planning Process: This process encompasses all facets of quarry production, from life-of-quarry planning to day-to-day production requirements, integrating geotechnical, operational, efficiency, and market factors.

Short-Term Development: Controlled daily by the Quarry Manager through morning pre-shift meetings to discuss daily activities, incidents, safety issues, production focus, and drill and blast requirements.

Life of Quarry Plan: Based on a pit design and incorporates the final slope design and rehabilitation requirements. This plan is dynamic and will be updated as economic parameters change or new geological information is gathered.

Geotechnical Input: General geotechnical input is managed by the Quarry Manager, supported by technical assistance third parties.

3. GEOTECHNICAL CONSIDERATIONS AND GROUND CONTROL

The geotechnical model for the site is based on 23 domains, delineated by common characteristics that make up a typical rock mass model. Each characteristic is reviewed, and its impact on stability is assessed.

Site Geology: The site consists of a main granitic body, partially mylonitised, which is hard, unaltered, durable, and robust, suitable for high-quality construction materials. Weathering is generally limited to the upper 5-6 meters of the resource area. No undesirable contaminants like asbestiform minerals are present.

Slope Stability Findings:

The site is assessed as being of a **proportionally low and acceptable operational and geotechnical risk**. There are no current material signs of slope instability.

Rock fall risk, while slightly higher than slope instability, is well managed and at a commensurately low level. Observations indicate rock falls are typically small volume (generally less than 10 kilograms), low frequency, with roll out distances of less than 2 meters.

Common Geotechnical Issues and Mitigation:

Eastern Wall Rockfall: Managed through suitable bench widths, crest impact bunds, and scaling.

Crest Damage/Back Break: Resultant from blasting, addressed by modified blasting and extraction practices, including adjusting stemming levels and scaling failure areas.

Erratic Weathering Profile/Circular Failures: Mitigated by modified blasting and extraction practices, such as ripping back to fresh rock.

Minor Toppling Failures: Managed with impact bunds at the crest of successive benches.

Stockpile Encroachment: Stockpiles should be removed via excavator if encroaching on pit crest areas.

Sliding and Ravelling: In the north-western pit area, addressed through scaling.

Eastern Highwall Instability: Requires annual visual monitoring.

Operational and Terminal Slope Design Criteria:

Unweathered Fresh Granite: Operational bench heights and widths are typically 15 meters. For terminal benches, a height of 15 meters and a minimum width of 10 meters is used, with a maximum batter angle of 80°.

Weathered Granite (Upper Bench): Maximum batter angle of 65°, maximum bench height of 10 meters, and minimum bench width of 8 meters.

Residual Soils/Overburden: Maximum batter angle of 44°, maximum bench height of 10 meters, and minimum bench width of 8 meters.

Total Slope Angle: The total slope angle in the pit is highest in the north wall area, though proportionally low at 30 meters height. All concept pits will **not exceed a 45° total slope angle** to ensure low risk stability and allow for stable post-extractive land use.

Ground Control Measures:

Bunding: The height of rock catch impact bunds on all benches should be a **minimum of 1.2 meters**. Haul road travel bunds should be designed and implemented at a **minimum of 1.5 meters** as per industry standards. Bunding and edge protection measures are inspected frequently and remediated as needed.

Scaling: Minor scaling is required across the site to remove localised crest damage. Ongoing batter management and check scaling should be completed on an "as needs" basis.

Exclusion Zones: Operations are to be conducted within clearly demarcated exclusion zones, without requiring specific geotechnical inspection for routine work. The exclusion zone delineation should consider loose rocks, cracks, water seepage, back break, overhang, vehicle vibration, rainfall, and blasting effects.

Daily Inspections: Formalised daily pit inspections focusing on bench and batter stability, especially if working directly under them, are to be completed when operational. Visual batter inspections are needed prior to extracting under batters, particularly after blasting or large rainfall.

Risk Management Process: The site adopts the risk management process as outlined in the WHS Safety Act 2020 and (Mines) Regulations 2022. This involves establishing context, identifying risks, analysing risks (quantified as product of likelihood and consequence), evaluating risks against criteria, and treating risks. Continuous monitoring and review are essential for improvement.

Seismicity: The area is considered relatively seismically inactive, with only minor non-material seismic events reported since 1900, and no induced seismicity impacts.

4. DRILL AND BLAST METHODS

Kimberley Quarries (KQ) frequently conducts its own drill and blast operations on site. However, this work can also be contracted out to external parties at times. Whether these activities are conducted internally by KQ personnel or by external contractors, extensive procedures and documents are in place to manage these operations effectively.

The procedures for the transport, storage, use, and disposal of explosives are clearly defined and form a critical part of the Quarry's Drill & Blast, Safety, Health, and Environment Management Plans.

It is important to note that since Kimberley Quarries recommenced site activities, the site stability conditions have significantly improved, and overall performance is at a general industry standard level of performance and risk.

5. WATER MANAGEMENT

Water management focuses on conservation and stability.

Pit Drainage: The pit dam captures rainfall runoff from within the pit and surrounding high areas. The dam has never overflowed, and if it did, the water would be retained within the pit as the dam's top RL is well below the pit entrance.

Surface Water Management: Surface water is, where possible, diverted away from the workings or into the sump in the north of the pit. After large rainfall events (>50mm per 24 hours), problematic structures within the quarry are assessed for stability. Currently, surface water ingress does not materially increase the risk of instability, though minor channelling and infiltration have been observed in the south wall.

Groundwater Hydrology: The effects of groundwater on slope stability are considered minimal, as the groundwater in the area occurs at approximately -50m AHD. The highly jointed nature of the rock allows groundwater pressures to be released by seepage.

6. HAUL ROADS

Haul road design and maintenance are crucial for operational efficiency and safety.

Design Standards: Haul road widths have been set at a minimum of 3 times the truck width for two-way roads and 2 times the truck width for one-way roads. Additional width is required for safety bunds. Current haul road widths and gradients are considered suitable across the site.

Cross Gradient: Designed to be cambered between 1 in 50 to 1 in 25, aligned for drainage away from the road's centreline.

Bunding: Appropriate bunding is used on the margins of all haul roads as an additional barrier, with the height equivalent to the mid-axle height of the largest self-propelled vehicle commonly used on site.

Gradients: Down-slope grades should preferably be designed at 1:10. Steeper grades are possible but increase fuel burn, reduce efficiency, and require appropriate risk assessment.

Maintenance: Regular road maintenance is varied out to prevent deformations that could impede vehicle control/safety and damage machinery.

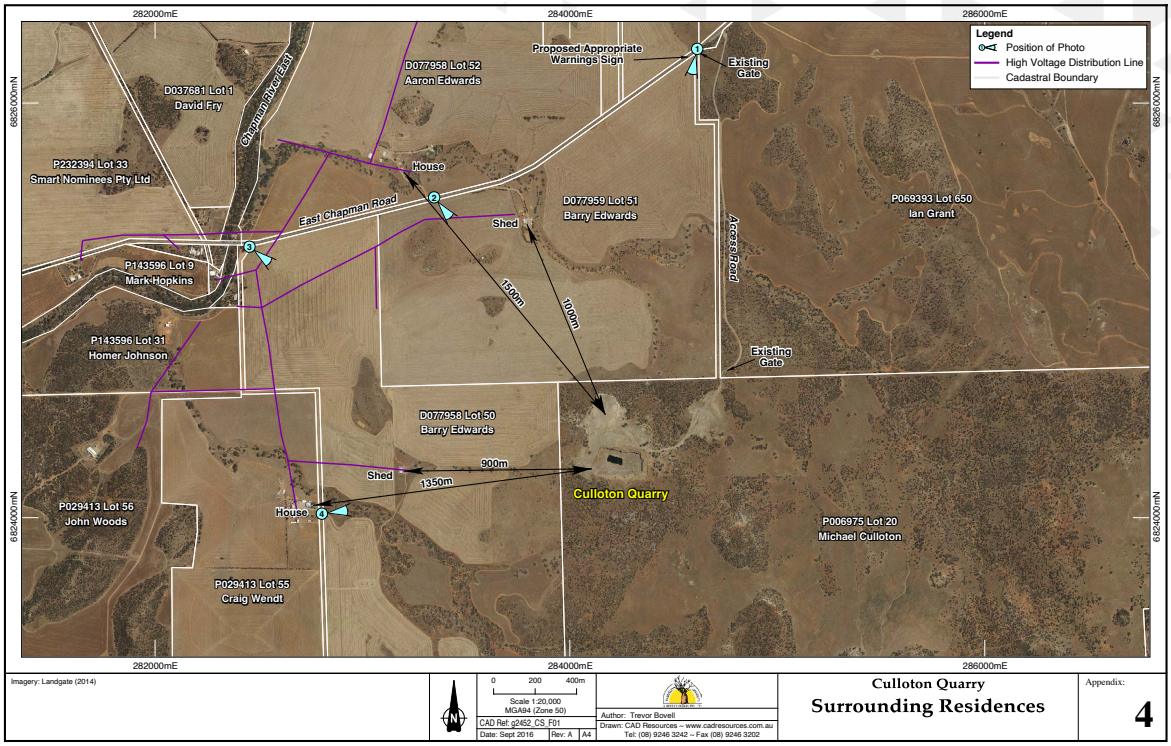
7. VISUAL SCREENING AND TOPSOIL MANAGEMENT

Visual Screening: The quarry is currently barely visible from nearby public roads, with minimal visual impact from East Chapman Road or nearest neighbours (over 1.5km away). The site is set back, and the pit is below natural ground level.

Future Visibility: Future work on lower benches, where rock quality is better, will not make the quarry more visible.

Topsoil Management: As an existing quarry, most topsoil has already been removed to existing bunds. Any new topsoil stripping will be completed progressively within the approved clearing envelopes as new areas are developed.

All recovered topsoil will be stockpiled in defined bunds within the site for later use in rehabilitation. Existing topsoil bunds will be maintained and used to support progressive rehabilitation as extraction advances.



8. TRAINING AND AWARENESS

In-depth and continuous training will be provided to all personnel regarding geotechnical stability and potential rockfall hazards. This training will cover visual cues for potential batter or bench failure and rockfall/slope instability, such as circular failures, increased occurrences of failure, unexplained groundwater flow or joint seepage, ponding, bulging, slumping, heaving, movement along fault planes, unexpected noises, haul road movement, swelling/bulging of the toe, widening of failure planes, or repetitive crest damage.

10. DOCUMENTATION AND REVIEW

This document is considered an "alive and dynamic document" and will be updated/reviewed annually.