A contractor carrying out a quarry earthmoving campaign was required to cease operations and was expelled from the site on grounds of unsafe practices.

This action was taken because the following issues were identified:

- Non-compliance with the company's PPE policy – identified during VFL visit and subsequently not acted upon.
- Lack of notification to relevant Quarry Responsible Manager when accessing site.
- Failure to stockpile mineral as per design document, including:
    - Ensuring correct material compaction (to minimise geotechnical instability).
    - Excessive height of stockpile.
    - High risk end tipping activities. End tipping is forbidden on all the company sites.
    - Missing edge protection
    - Inaction following previous improvement request.

The contractor had been warned on several occasions that they weren't operating to the design specification and standards the company required and had not carried out the improvements issued by the site's appointed responsible managers.

Details of the occurrence are found below to provide further insight into this example.

END TIPPING

View from above the stockpiled material

Side view of the stockpiled mineral

The edge protection

Please see below an example of **end tipping** that occurred in the USA. This incident resulted in a fatality.

Link to accident report: https://www.msha.gov/data-reports/fatality-reports/2023/may-22-2023-fatality/final-report

LEARNING POINTS / ACTIONS TAKEN

- Please could all quarry responsible manager's ensure they reiterate the importance of these omissions to all relevant quarry colleagues including internal plant operatives and external contractors.
- Ensure that each site's appointed personnel is competent to advise on these risks in the context of safe operation of quarries in minimising geotechnical instability and unsafe acts.
- Please check the quarry's Excavation and Tipping Rules to ensure they are up to date and relevant to the site – requesting assistance from LMR where required.
- Even if the contractor supplies a floor-based supervisor, as an appointed person you need to be vigilant and ensure that you carry out your inspections and manage the contractors.

It is the company and our management structure that always remains responsible and accountable for quarry safety and compliance to the Quarry Regulations 1999. We can't become complacent just because we've used the contractor in the past. Anyone **can and must stop an unsafe act** and this forms part of our Golden Rules.

Quarry Safety – relevant aspects and resources

- By way of reminder of the principles and dangers of quarry haul roads and edges, please see the HSE website: Vehicles and Edge Protection.
- Please also review the Quarry Regulations, specifically Regulation 13 and the relevant ACOP.
- On quarry benches or roads used by heavy vehicles, the minimum acceptable height of the edge protection is 1.5m or the radius of the largest wheel/tyre – **whichever is greater**. Additional protection is needed in high-risk areas, such as sharp bends or steep haul roads, where sand traps should also be considered
- Below are the basic parameters of good and bad edge protection, taken from Regulation 13.
- When tipping material on top of a stockpile or tip, the load must be dispensed at least 6 metres from the break in slope. A suitably sized bulldozer must then push the material over the edge, whilst maintaining their tracks on relatively compacted ground.
- Always challenge actions that don't look safe, even if you are not sure.

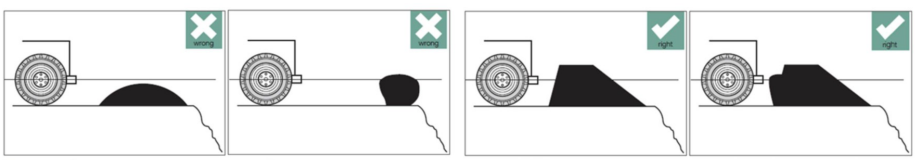

Figure 1 Ineffective edge protection – sloping sides

Figure 2 Unsuitable edge protection – blocks of stone can be pushed out of the way

Figure 3 Suitable edge protection – a bank of scalpings big enough to absorb the vehicle's momentum

Figure 4 Suitable edge protection – a rock which can safely absorb the impact

LOCATION:	**QUARRY**	**ALERT STATUS:**	**Normal**
ACTIVITY:	**QUARRYING AND FACE ACTIVITY**	**DATE ISSUED:**	**17/03/2025 15:04:13**
SUB ACTIVITY:	**NO SUB ACTIVITY AVAILABLE**	**INCIDENT No:**	**04862**