



# ▶ Geotechnical Assessments of Quarries under Quarry Regulations 1999



*Excavations*

The 1999 Quarry Regulations require that all excavations and tips related to mineral extraction are appraised by 1st January 2001 and that identified significant hazards be geotechnically assessed by 1st January 2002. Golder RMT has an approach that applies the appropriate level of detail to the assessments whilst fully satisfying the requirements of the Health and Safety Executive.

The 1999 Quarry Regulations require the following to be done:

- ▶ Appraisals of elements detailed by regulations
- ▶ Assessments of significant hazards
- ▶ Notification of significant hazards



*Stockpiles*

## **Experience**

We have developed a cost-effective approach to hazard and risk assessment of excavations, tips and lagoons. This has been achieved by extensive experience drawn from UK and international mining operations in both hard and soft rock environments.



*Lagoons*

## **Objectives**

Our objectives are to provide the most effective Geotechnical Assessment services to suit the quarry operators' ongoing requirements in their hard rock and soft rock/sand and gravel operations.

## **Approach**

The fundamental requirement of the HSE is that a greater awareness of Geotechnical Risk is engendered in quarrying operations. This approach can be applied using either in-house expertise; external services or a combination of both. We can manage your ASSESSMENT requirements on a group basis if required.



*Tips*

Kinematic analysis is used to determine the principle failure mechanisms. This is undertaken using DIPS™ a geotechnical program designed for the analysis of orientation based geological data. Planar, wedge and toppling type failures may be identified either on bench or overall slope profiles.



Orientation data collection using a CLAR compass



**The following is an outline approach:**

1. APPRAISAL by an in-house competent person
2. Review and preliminary field Geotechnical ASSESSMENT
3. Cell mapping of slope design sectors for more detailed ASSESSMENT as needed
4. Inspection of Tips and Stockpiles
5. Reporting with recommendations
6. Training if required

The key is that in existing operations only sufficient assessment work is required to prove whether or not the existing design/working methods/rules/inspection and reporting regime is adequate or not and where shortfalls exist identify and implement appropriate measures.

**Design and Operating Improvements**

In the case of major quarrying companies it is to be expected that their rules and regimes will generally be acceptable or can reasonably become so with a limited amount of input. Should they be able to be improved then the geotechnical assessments will generally identify the potential improvements both in efficiencies and operating practices

For further information please contact:

Peter Altounyan  
 Technical Director Consultancy  
 Tel: +44 (0)1283 522201  
 Email: paltounyan@golder.com

