

## **AusIMM Bulletin January / February 2002**

Letters to the Editor by D.Mclean, MAusIMM, CPGeo

### ***Management Of The Geological Database***

Dear Editor,

This letter develops an issue that has been raised in previous LTE's by other members. It emphasizes the ramifications of poor data management and the importance of maintaining quality geological databases in a mining company, and suggests steps a company might take to overcome this.

If the chief financial officer of a company found that his/her company had inadequate documentation of the corporate assets, he/she would fix the situation as a priority. A CFO who took no action, could risk not only his/her position in the company but also his/her status as a CPA.

A financial resource analyst will frequently value an exploration or mining company by considering the financial costs and benefits in developing the resources in the company portfolio, and add to this the value of the mineral potential of the tenements held by the company. In arriving at a value, the analyst will refer to the mine strategy, the resource models, expectations of the sale price of the commodity, the geologic setting, and the performance of similar companies. Much of this information is readily at hand to the analyst, is well recorded and carefully explained.

At a more fundamental level, the chief geologist equivalent is responsible to ensure that the geological database adequately documents the exploration data. The project geologist uses the geological database in order to:

- develop a strategy for further drilling,
- interpret the geology, and
- construct a geologic model.

The resource geologist uses the database to construct a grade model.

Few would question that a good database is an essential requisite to building a reliable grade model, a reliable mine plan and finally reliable financial forecasts for the company.

Unfortunately the condition of the geological database in many mining companies does not reflect its value to the company. The database may be managed at the mine site by a geologist who has several other pressing issues under his/her umbrella of responsibility. The database may be infrequently reviewed, and the company may not have a system to rigorously cross-check the data before it is accepted as "valid" in the database. An inadvertent error in

editing the database may result in the loss of a substantial amount of almost irretrievable data. Under these circumstances, the database will accumulate errors.

This is not to suggest that the mine-site geologist or the exploration geologist is neglecting his/her responsibility. In some companies, the responsibility for the database may be distributed among several professionals, so that no single person has the overruling day-to-day authority of the database.

The Geological Manager must satisfy himself/herself of the integrity of the geological databases. The obvious way to do this is to:

- a) Appoint a database manager who is independent of the immediate demands of the site operations. The database manager has a responsibility to review the quality of the data provided by the sites before accepting it as "valid" data in the database.
- b) Provide the database manager with the dedicated time and facilities to monitor the condition of the data.
- c) Arrange for an annual or biannual audit of the database.

A database manager occupies a key position in the company. He/she should be recognized as a "competent person" for his/her role in the company, and have the authority to assure that the data

provided for geological modeling and resource grade modeling is:

- Comprehensive documented,
- Free of errors, and
- Can transparently track the information back to the method of collection and assay, the method of geological logging, and the location of each sample.

Yours Sincerely,

David McLean, MAusIMM, CPGeo.

## **AusIMM Bulletin 1998**

Software in Mining – an update

by Tony Shellshear.

### ***The Real Cost of Poor Technical Data Management***

Both during exploration and evaluation of a new project, and during mining and rehabilitation of a deposit, large amounts of money, often millions of dollars, are spent acquiring data; data ranging from exploration, reserves, planning and production data through to environmental control and rehabilitation data. This data is used to make decisions that can, in turn, involve millions, or in some cases billions, of dollars.

This technical 'database' thus becomes the primary link between the deposit itself, and the decisions being made about that deposit, in an effort to provide a cash flow and to produce a profit.

The speed, effectiveness and integrity of those decisions will therefore be affected directly by the accessibility and accuracy of that data. The inability to access this data with confidence will lead to delays, errors and re-work that can affect this cash flow and profit in very real (and large) terms.

Why is it then that so often the data supporting these decisions is treated with almost total disregard with respect to its security, integrity, accessibility and concurrency, left to the elements in spreadsheet files, PC databases

and ASCII files on the junior geologist's or engineer's desk?

### **Improving Data Management**

Centralisation of technical data storage with a view to improving security, integrity, accuracy, concurrency and above all accessibility, is the first and most important step. This central database then becomes a data 'server', passing data to the different application packages, and to the users directly, in the format required.

Other factors are however also vital and these include –

- An understanding of the real cost of poor data management, and a commitment to support improvement from the senior management level.
- Integration of the central database with application software and other user systems.
- Utilization of personnel with real experience and qualifications in both the mining / exploration skills and current computing skills.
- The establishment of procedures and standards for data management, and the training of staff in these

standards, and in the other software tools they need to use to effectively perform their duties.

- The research and use of current computing tools and practices.

Software Design Consultants is a Brisbane based consulting firm that has been working with these problems for some 14 years. Focusing on the centralization and rationalization of technical data in the resources industries, SDC's primary aim is to provide improved access to all data, by all users and systems, at the same time ensuring security, concurrency and integrity of the data.

SDC's Principal, Tony Shellshear, believes that senior management in the mining and exploration industries is only just beginning to fully appreciate the enormous real cost that poor data management is having on their projects.

Inadequate security, integrity and accessibility, coupled with the use of old and inappropriate technologies causes evaluation and planning delays which outweigh, by orders of magnitude, the investment in their staffing, training and tools necessary to address the situation.

By fully appreciating firstly, the cost of acquiring the data initially, and secondly the lost or delayed revenue caused by errors and delays in projects, senior executives may start to realize that the problem requires the attention and support of the highest levels of management.

**The ultimate aim should be the cost effective management and protection of the data that has cost a great deal to acquire, and to maximize the return on the investment that has been made in that data.**