ON MINE-TO-MILL RECONCILIATION

Gap Identification

Table 1 and Figure 1 show significant discrepancies (a gap) between Actual and Predicted.

Following are some of the “burning” questions:

1. Any loss of resource?
2. What went wrong: sampling, modelling, planning, mining?
3. Other possible causes?
4. Or is it “normal” variation? In this case, the challenge is rather: How to do it better?

Gap Analysis

It is important to understand whether the gap is:

- Due to statistical fluctuations that will even out in the long run?
- Or systematic in character and indicative of a potentially serious bias?

A root-cause analysis is well justified to investigate the nature of the gap. A fact-based, cross-functional and multi-disciplinary approach should help address a host of inter-related issues (Figure 2) and identify, analyse and rank possible causes (Figure 3). In this example, over-break, a source of bias, is the largest contributor to the overall gap. Note that root causes have their own peculiarities and can either produce a bias or generate statistical fluctuations, which makes the analysis more challenging and rewarding.

Gap Management

Once the gap and its likely consequences on operations are assessed, an action plan can be developed to address the root causes. Statistical fluctuations can be reduced to suit a specific production schedule. Sources of bias should be eliminated.

Experience shows that mine-to-mill reconciliation can greatly contribute to the management and optimisation of the orebody while reducing uncertainties and risk.

Reconciliation provides opportunities to re-engineer poor practices, develop performance improvement strategies and focus attention on common goals around the operation.

Table 1

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<th>ACTUAL / PREDICTED</th>
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<tr>
<td>Av Grade</td>
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<td>80 %</td>
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