



## ***Kirkland Lake Gold Mines***

The parameters used to estimate Mineral Reserves and Resources are as follows:

- The ore reserves are calculated on 20 scale longitudinal sections or plan views (for veins dipping less than 45 degrees)- a few calculations are done on 10 scale longitudinal sections- using a modified polygon method of blocking.
- Cut-off grades of 0.25 oz/ton Au and 0.35 oz/ton Au are used for reserves depending on the location, and economics of the block. Generally, a cut-off of 0.30 is required on a whole-block basis to achieve profitability. It is possible to have sub-blocks within an ore reserve block that assay less than any cut-off which have been incorporated for mining or geotechnical reasons. Ore blocks that grade between 0.20 and the cut-off have been classified as resource.
- Gold price of \$C516/oz Au (average of past 3 years)
- Minimum mining width of 5 ft. for steep-dipping structures and a minimum mining height of 6.5 ft. for flat structures.
- Minimum strike length of 21 ft (3 sets of chip assays).
- High assays cut to 3.5 oz/ton Au. The justification for this top cut was contained in a report by Bruce Davis (Nov. 1995). In certain circumstances, a 10% grade factor (decrease) was applied in the absence of a top cut (i.e. when sample tickets could not be located).
- Dilution factors are generally as follows: in a range of 32%- 50% for longhole stopes and some cut-and-fill stopes less than 6.0 ft. wide, 15% to 24% for cut-and-fill blocks 5.0 – 7.0 ft. wide, and 10%-15% for cut-and-fill blocks greater than 7.0 ft. wide. The dilution is assigned a grade of 0.02 oz/t. These numbers were assessed by members of the Engineering Dept. and are based on a comprehensive 1993 study (Barrick)
- Tonnage factor of 11.7 cu ft/ton (the South Zone or Lower D, has a tonnage factor of 11.5 cu ft/ton).
- Average mining recovery of 94.2% applied to the reserve blocks.
- #2 Shaft resources are blocks greater than 0.25 oz/t
- Radius of influence from sampled headings of 30 ft. for Measured Resource/Proven Reserve. Block must be exposed by at least one drift and tested between drifts by drilling on 25 to 30 ft. pattern. Where continuity is proven as just described, the intervening polygons that are drilled on the 25 to 30 ft. pattern may be considered proven.
- Radius of influence of an additional 50 ft. (to 80 ft.) for Indicated Resource/Probable Reserve. Blocks sampled on two sides by workings out to a maximum of 150 ft. spacing of the development where no drilling exists, or above and below a drift where drillhole spacing is greater than 100 ft. For blocks with only drilling, 50' radius is used.

- Inferred blocks are 80 to 130 ft. from workings with one side bounded by a Measured/Proven or Probable/Indicated block. Also, blocks on a proven mineralized trend that are drilled on a spacing of greater than 100 ft.
- Raises that have been bored, have usually been ignored from the reserve calculation. The majority of the raises are 42" in diameter, and are non-representative of the ore width. Further, samples are generally not obtainable, and these raises yield less than 1 ton per vertical foot, which is generally insignificant.
- Test hole, and drift muck data are not used for ore reserve calculations.