

The Golden Mile: 130 years of mining and the challenges posed for todays Mine Geologist.

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Keywords: Historic Workings, Reconciliation

The Golden Mile within the Eastern Goldfields of Western Australia, now known as KCGM (Kalgoorlie Consolidated Gold Mines), comprises the Fimiston Open Pit and Mt Charlotte Underground Mine and is wholly owned by Northern Star Resources. The Golden Mile, which is in fact over 5km long has been continuously mined for over 130 years and is set to continue well into the future. It is within the Norseman Wiluna Greenstone Belt which is made up of a series of mafic volcanic and sedimentary rocks that have been extensively structurally deformed and intruded by granitic rocks. There are two main styles of mineralisation; the Fimiston Style consists of classic Golden Mile lodes with abundant sulphides and tellurides while the Charlotte Style describes younger stockwork veins with a northerly plunge.

Underground workings extend to more than 1.2km below surface and pose one of the biggest safety risks to the operations and challenges for the geology team in terms of drilling, geological modelling, grade and tonnage estimation, marking up ore blocks, tracking material movement during blasting and reconciliation. Many assumptions are required to overcome these challenges and these are constantly and consistently validated and adjusted through thorough model and mine to mill reconciliations on a monthly basis.

This paper will discuss the various methods used to overcome some of the challenges associated with mining on the Golden Mile and the results of these activities.