Quartz Hill, Alaska

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The Quartz Hill molybdenum deposit, located 44 mi (70 km) east of Ketchikan, Alaska, contains one of the world's largest concentrations of molybdenite. It is related to a Miocene intrusive complex referred to as the Quartz Hill stock. This deposit was discovered in 1974 by U.S. BORAX geologists as a result of a comprehensive reconnaissance geochemical rock and stream sediment sampling program designed to explore the western margin of the Coast Range batholithic complex on the

mainland portion of southeastern Alaska.

The country rocks of the area, orthogneisses and paragneisses, are intruded by the Quartz Hill stock which represents at least five phases of igneous activity. The main rock type within the Quartz Hill stock is a quartz monzonite which has been intruded by steeply dipping bodies of porphyritic quartz latite, and late quartz monzonite. These rocks are chemically and mineralogically similar and consist of quartz, potassium-feldspar, sodic plagioclase, and minor biotite, with many of the textures suggesting isothermal "quench" textures. These intrusive felsic rocks have been subsequently intruded by regional dikes of felsic and intermediate composition.

The Quartz Hill orebody occurs entirely within the Quartz Hill composite stock. The orebody forms a large, tabular to slightly convex downward shape and is at or near the surface. Molybdenite is the only mineral of economic importance. The orebody is approximately 9,200 ft (2,800 m) long by 4,900 ft (1,500 m) wide and extends from the surface to a depth of 1,215 to 1,640 ft (370 to 500 m). Reserve calculations have projected approximately 2.5 billion tons grading 0.125% molybdenite.