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item 3

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June 16, 1974

To: J. E. Worthington

From: R. W. Thomssen

Subject: Exploration Potential of Quartz Mountain Prospect, Nye County, Nevada

As per your request I visited the Quartz Mountain Prospect and reviewed the diamond drill core in Gabbs on June 13, 1974. A rapid logging of the core from Q-3 is summarized on the attached sheet. Two particularly significant features of this hole are the pronounced increase in molybdenum mineralization below 788 feet and the striking resemblance of a quartz monzonite porphyry dike from 730.2 to 744 feet to the ore host porphyry at Anaconda's Hall Prospect, 56 miles to the southeast.

Below a strong fault at 695 feet the igneous and metamorphic rocks intersected by Q-3 are strongly shattered and core recovery is poor. However, several features are apparent with a gradual increase in argillic and sericitic alteration downward, and below 788 feet an increase in molybdenite content as fine disseminations and in thin, sheared quartz veinlets along bedding planes in calc-silicate hornfels and marble.

The very strong resemblance of the porphyry dike intersected from 730.2 to 744 feet to the quartz monzonite porphyry containing the Hall molybdenum deposit is especially encouraging. The porphyry in the Climax-type molybdenum deposit not only acts as a host for the ore minerals but also is genetically related to the mineralization and accompanying silicification. The occurrence of such a porphyry Quartz Mountain deposit with associated molybdenum mineralization is compelling evidence of a deposit similar in character to the Hall deposit. This property is reported to contain 150,000,000 tons at a grade slightly better than 0.15% Mo with a 3.5:1 stripping ratio or 60,000,000 tons at 0.17% Mo with a 2:1 stripping ratio.

The predominance of badly sheared, hornfelsed shaly marbles and sandstones below the strong fault at 695 feet suggests that the post-Tertiary section above the fault which consists largely of intrusive quartz porphyry has been displaced for a moderate distance. Assuming normal movement on the north-south-trending fault, the ground to the east of Q-3 becomes significantly

prospective under the Tertiary volcanics on the basis of the better molybdenum mineralization and alteration toward the bottom of the hole in the footwall block (see attached plan and section). A careful evaluation of all the available geological and geophysical data should be made with this structural hypothesis in view to test its validity and to more precisely establish future drilling targets.

In closing, I would like to again emphasize the similarity between the two quartz monzonite porphyries, one an ore host at the Hall molybdenum deposit and the other associated with sericitic alteration and molybdenum mineralization at the Quartz Mountain Prospect. The geological setting at this property thus discovered is so encouraging that it must be ranked as the best molybdenum prospect in the Great Basin and without question requires further exploration drilling.

R. W. Thomssen

RWT:ldl

Summary Log
Diamond Drill Hole Q-3
Quartz Mountain Prospect
Nye County, Nevada

R. W. Thomssen
June 13, 1974

Interval (ft.)	Description
0 - 40	No cuttings
40 - 330	Tertiary tuffaceous volcanics
330 - 340	No cuttings; cored below
340 - 416	Quartz porphyry; grey to tan, fine grained local sericitized sections
416 - 450.5	Calc-silicate hornfels and marble; light green, fine grained; minor FeS_2
450.5 - 625	Quartz porphyry; slightly coarser than above section, more numerous sericitized sections
625 - 695	Quartz porphyry; coarser with increasing sericitic alteration; local secondary biotite, minor FeS_2
695 - 702	Calc-silicate hornfels and marble; light green, dense; lower contact intrusive, upper contact strong fault
702 - 730.2	Quartz porphyry; tan, medium grained, sericitized shattered; trace MoS_2; contacts faulted
730.2 - 744	Quartz monzonite porphyry; pink to light grey, coarse grained sheared; local sericitization and argillization related to shearing in part
744 - 756	No Core
756 - 806	Calc-silicate hornfels and marble; light green to white, fine grained, dense, shattered; minor disseminated MoS_2 below fault at 788, minor FeS_2; no core intervals: 763.7 - 773, 777.2 - 787.
806 - 844.1 (bottom on 6/13/74)	Calc-silicate hornfels and marble; white, fine grained, dense, shattered and gougy - very poor core recovery; minor to fair disseminated MoS_2; few brecciated quartz veinlets with fine disseminated MoS_2 minor FeS_2, trace FeAsS; 2% core in last 12 feet of hole