

RED MOUNTAIN MOLYBDENUM DEPOSIT

Whitehorse Mining District, Yukon Territory, Canada

SUMMARY REPORT 1992

for

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Tintina Mines Limited**

by

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EXECUTIVE SUMMARY

With its peak at an elevation of 1702m above sea level, Red Mountain is a conspicuous reddish mountain with relatively steep talus covered slopes and an overall relief of 700m. It is located 610km south of the Arctic Circle, in the rugged Big Salmon Mountain Range, 15km east of the Teslin River, in south-central Yukon Territory, Canada.

The Red Mountain property comprises 183 mineral claims, maintained in good standing, jointly held by Amoco Canada Petroleum Company Ltd. and Tintina Mines Limited as to 50% undivided interest each therein, and under the terms of their joint venture Tintina is currently Operator. To date, an aggregate of \$6 million has been spent toward work at the property by the joint venture.

Access is by air from Whitehorse some 80km to the southwest, or by 114km of winter roads leading from the Alaska Highway. Of the total distance of 248km by road to Whitehorse, only the Alaska Highway portion is maintained during winter. Mobilization has traditionally relied upon a combination of helicopter, bulldozer and fixed wing aircraft utilizing two nearby modest gravel airstrips.

The earliest exploration work at the property dates back to 1966, spurred on by the search for lead-silver. The bulk of the current data is from a five-year work campaign, 1977-1982, carried out by Amoco, then Operator, during which 21,391m of deep drilling was completed in 32 holes, in addition to geological mapping, surface geochemical and geophysical surveys, orthophotography and land surveys, metallurgical testwork and petrography.

By the end of 1982, the above work had defined a steeply dipping, elongate, 900mx200m, typical molybdenite porphyry deposit down to 1150m from surface, hosted within the western one third of a northwesterly Quartz Monzonite Porphyry and adjacent hornfels. The deposit has strong surface geochemical expression. It is intersected by two dextral northeasterly faults with significant vertical displacements in the 300m-500m range, with downdropped eastern blocks. Estimated undiluted drill-indicated possible reserves stand at 187,270,000 tonnes grading 0.167% MoS₂, at 0.10% MoS₂ cut-off.

The deposit exhibits a well zoned pattern of molybdenite mineralization, with grades decreasing outward and upward away from a higher grade core (>0.2% MoS₂) at approximately 600m below surface (1200m Level). Below this core, grades increase progressively with depth, such that MoS₂ concentrations of 0.3%-0.4% are common at the bottom of the reserves as defined to date. An oxide zone overlies the deposit, extending down to 100m below surface.

The reserves have been defined in relative detail vertically down to 1150m from surface, excluding the overlying oxide zone and near surface lower grade material. Their depth is delimited only by length of the deepest drill-hole completed to date, and persistent high grades therefrom at depth suggest continuity to yet greater depths. In addition, all indications from earlier preliminary drilling to the north of the deposit are that it probably extends northward beyond a 50m wide barren dike of Quartz Eye Diorite traditionally regarded to represent its northern boundary.

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In addition to being demonstrably open at depth and to the north, the eastern extremities of the deposit have to date received little attention, despite the existence of a large surface geochemical anomaly over the eastern portion of the Quartz Monzonite Porphyry similar in size and tenor to that directly overlying the deposit. Considering that the western portion of the monzonite has been faulted up, exposing progressively deeper levels of the mineralization, it is conceivable that the deposit extends eastwards, albeit at greater depth, into ground as yet unexplored by deep drilling.

While additional material from depth and from the north could contribute good grade material to expand, and improve, current reserves by some 20%-30%, it can be speculated that an easterly extension could potentially double existing reserves. The data collected to date places no limitations as to a potential extension to the deposit, and the significance of additional work, especially probing an easterly extension, is self-evident.

Metallurgical testing of fresh ore samples demonstrates that Red Mountain ore is of relatively simple mineralogy, and that the Molybdenum can be easily liberated during flotation achieving excellent recoveries. The tests suggest a relatively coarse effective grind near 50% -200mesh with 95%+ Mo recoveries in the rougher flotation.

Copper, Lead and Iron were noted to be the principal impurities in the concentrates produced, and their levels were successfully depressed to below, or near, acceptable concentrate specifications in cleaner flotation tests by the addition of Nokes reagent. An average recovery of 94% Mo with a grade of 49.55% Mo was achieved in locked-cycle tests representing the nearest laboratory simulation of pilot mill conditions. An average of 143gm/t of silver was also recovered in the concentrate during the locked-cycle tests.

As a first order of magnitude estimate, barring any unforeseen excessive mining dilution, the current reserves translate into some 340,000 tonnes of concentrate containing approximately 170,000 tonnes of Mo metal and 48 tonnes of silver, representing an aggregate in situ value of some \$800,000,000. Considering the naturally high anticipated concentration ratios (1:400 to 1:550), it is conceivable that concentrates produced may also recover other precious metals of otherwise negligible tenor in the ore.

Following completion of the 1982 work, it was apparent that additional exploration from surface would not materially contribute to gaining any better an understanding of the deposit than that already established from the information on hand. It was decided that any future work would be best carried out from underground, and accordingly a preliminary development work program was outlined to provide a planning framework.

Considering that the bulk of the higher grade reserves (current and potential) are at a depth well below surface, and also considering the rough terrain, altitude and climate, traditional open pitting or shaft sinking were ruled out as effective options. Development and ultimate production by underground exploitation via a tunnel (decline or adit) designed to enter the reserves at as low an elevation as possible was considered to be the only suitable method. Material above such a tunnel could be bulk mined by caving and tonnages below it could be accessed by decline or internal shaft, or mined by an internal open-pit. In addition to affording some

selective mining, advantages of this scheme would also include omission of near-surface lower grade material and oxidized ore.

Of the many potential collar locations reviewed, the Boswell River valley at an elevation of 1060m above sea level, 3km to the northeast, was considered to be the most suitable location. An exploration adit from this location could enter the deposit within the top of the better grade material at the 1100m level (600m below surface), a suitable elevation for gaining access to deeper levels by means of a decline or internal shaft. While such an adit would initially be utilized for exploration and development purposes, it could subsequently be slashed to production size.

Excavation of the envisaged adit would be integral to a development program whose aim would ultimately be to prove up a viable block of underground reserves of confirmed recoverable grade and known ground conditions, by means of tunnelling, controlled drilling and testing of a bulk sample. As a first order of magnitude estimate, this program would cost approximately \$15 million, and would require some three and a half years for completion. It would entail the excavation of a 3200m long exploration adit to enter the reserves at the 1100m level; followed by 1000m of in-level drifting, 1800m of cross-cuts and 35,000m of controlled drilling. A 10,000 tonne bulk sample would also be tested. Ground condition studies would accompany this work as would investigation of potential extensions to the deposit.

In the event that significant additional tonnages are outlined as an easterly extension to the deposit, the above configuration would undoubtedly have to be revised to reconsider entry into the reserves from the east, rather than the north. Advantages of the revised scheme would include maintenance of a larger proportion of underground drives in ore and the availability of multiple headings for an accelerated schedule, and same may well counterbalance disadvantages of comparatively more demanding anticipated ground conditions.

In summary, with its size and tenor comparable to other currently producing molybdenum deposits and excellent potential for expansion, with relatively simple metallurgy and with manageable accessibility, Red Mountain has the potential of becoming a viable underground producer of Molybdenite. Despite all of its favorable features, however, there has been no work at the property since the 1982 phase of deep drilling, primarily due to discouraging Mo markets, further exacerbated by a generally poor economic climate.

As a strong carbiding agent, however, Mo has very few potential substitutes in its major application as an alloying element, in steels, cast irons and non-ferrous metals, and overall demand has been predictably and steadily growing. In addition, due to the versatility of its physical and chemical properties, a good deal of research continues to focus on the development of new materials benefiting from its alloying abilities.



LOCATION, PHYSIOGRAPHY, ACCESS, WEATHER AND LOGISTICS

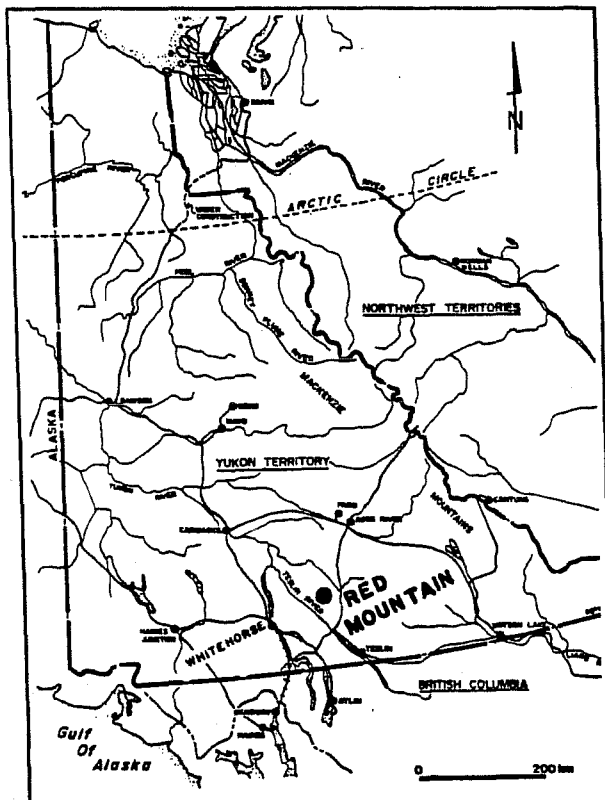
Physiography

With its peak at an elevation of 1702 meters above sea level and tree line at 1405 meters, Red Mountain is a conspicuous reddish mountain with relatively steep talus covered slopes and an overall relief of 700 meters.

While prominent gossaneous bluffs mark its south-east flank, a gentler grade characterizes the north flank sloping toward the Boswell River some 3km away to the north. Several other similar peaks of similar elevation highlight topography to its west, northwest and the southwest. The majority of the property is devoid of vegetation, and overburden thickness varies 2m-50m, averaging 10m over the deposit.

Location and Weather

Weather conditions at the property are typical of those for the Canadian far north. At a latitude of 60°59'N, some 610km south of the arctic circle, summers are short and the winters cold. Conditions from June to August are typically sunny and mild with daytime highs in the 10°-18°C range. By September, overnight frost is common and from October onward snowy winter conditions prevail with overnight lows often in the -25° to -40°C range. Adverse weather has not impeded field work in previous years, but same would be material to future production considerations.



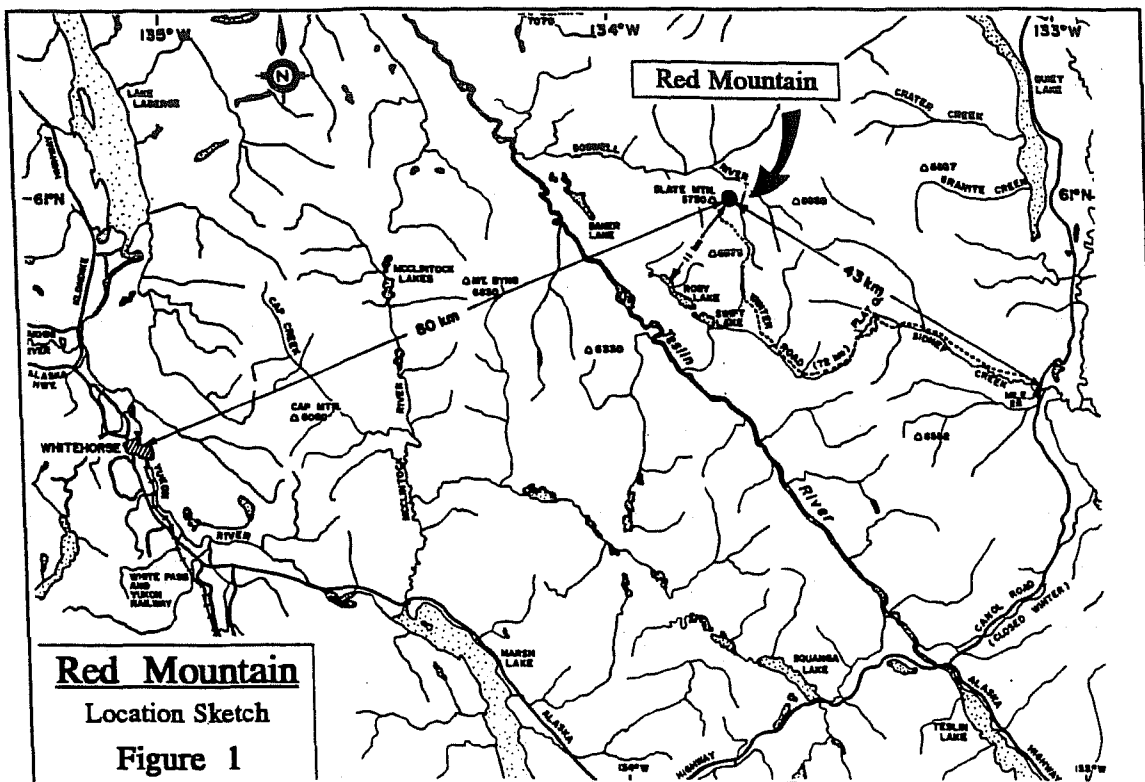
Red Mountain is situated in the rugged Big Salmon Mountain Range, 15km east of the Teslin River, in south-central Yukon Territory, Canada, at LAT 60°59'N and LONG 133°44'W (NTS 105C).

Access and Logistics

Access to the property is by air from Whitehorse some 80km to the west-southwest, or by 114km of winter roads leading from the Alaska Highway at a point 134km east of Whitehorse (Figure 1). Total distance by road to Whitehorse is approximately 248km, of which only the Alaska Highway portion is maintained during the winter.

Air access is primarily by helicopter, although a modest airstrip capable of accommodating otter and similar

aircraft was established during 1982 some 5 km to the north of the property, on the north banks of the Boswell River.



Mobilization to and from the property has generally relied upon a combination of fixed-wing aircraft, helicopter and bulldozer. Equipment, fuel and supplies have generally been brought in either by cat-train during early Spring, or flown by fixed wing to Rosy Lake, 11Km to the southwest, and then shuttled to the property by helicopter. An old winter airstrip in the southern part of the claims and the 1982 gravel airstrip to the north near Boswell River have also proven suitable for landing Beaver and Otter type aircraft for regular transport of crews and camp supplies. Drill moves around the property have been most effectively done by tractor.

Supplies, groceries and parts have traditionally been expedited from Whitehorse through the services of third party expeditors who also have maintained HF radio contact with camp crews. Whitehorse provides the principal logistics and supplies support for all activities at the property. In addition to road and air access, Whitehorse is also serviced by rail offering access to Skagway.

Following the most recent phase of field work (1982), all equipment was demobilized with the exception of the camp and core storage facilities all of which were left intact. At present, a half dozen plywood shacks and a number of steel core racks remain at the camp site, housing all drill core, sample rejects and sundry emergency camp equipment. At last visit during 1987, the camp was noted to be in good repair, and 1991 reports from local outfitters indicate that the gravel runway to the north, on the north banks of the Boswell river, was in use by small aircraft ferrying hunting parties.

PROPERTY DESCRIPTION & LAND TITLE

The property consists of 183 mineral claims, in the Whitehorse Mining District, Yukon Territory, Canada (approximately 3300 ha, 8300 acres). As normal mineral claims under the Yukon Quartz Mining Act, they confer the right to all minerals, as well as for commensurate surface usage. The claims are tabulated below and shown in Figure 2.

<u>Claim Name</u>	<u>Claim Number</u>	<u>Anniversary Date</u>
BUG 1-8	Y90711-Y90718	December 2, 1992
BUG 9-16	Y99304-Y99311	December 2, 1992
BUG 17-84	YA07932-YA07999	December 2, 1992
GUB 1-30	YA22209-YA22238	December 2, 1992
GUB 32-50	YA22240-YA22258	December 2, 1992
GUB 51-64	YA23055-YA23068	December 2, 1992
GUB 65-66	YA23648-YA23649	December 2, 1992
GUB 67	YA48020	December 2, 1992
GUB 68	YA48028	December 2, 1992
GUB 69	YA48021	December 2, 1992
GUB 70	YA48029	December 2, 1992
GUB 71	YA48022	December 2, 1992
GUB 72	YA48030	December 2, 1992
GUB 73	YA48023	December 2, 1992
GUB 74	YA48031	December 2, 1992
GUB 75	YA48024	December 2, 1992
GUB 76	YA48032	December 2, 1992
GUB 77	YA48025	December 2, 1992
GUB 78	YA48033	December 2, 1992
GUB 79	YA48026	December 2, 1992
GUB 80	YA48034	December 2, 1992
GUB 81	YA48027	December 2, 1992
GUB 82-90	YA48035-YA48043	December 2, 1992
GUB 91FR,92FR	YA48186, YA48187	December 2, 1992
SM 1-8	Y90711-Y90718	December 2, 1992

The claims are registered to Amoco Canada Petroleum Company Ltd and Tintina Mines Limited, as to 50% undivided interest each, and under the terms of their joint venture agreement Tintina is currently Operator of the property.

The claims are maintained in good standing by annual payments in lieu of performing work (\$100 per claim, \$18,300 for the entire property), and can

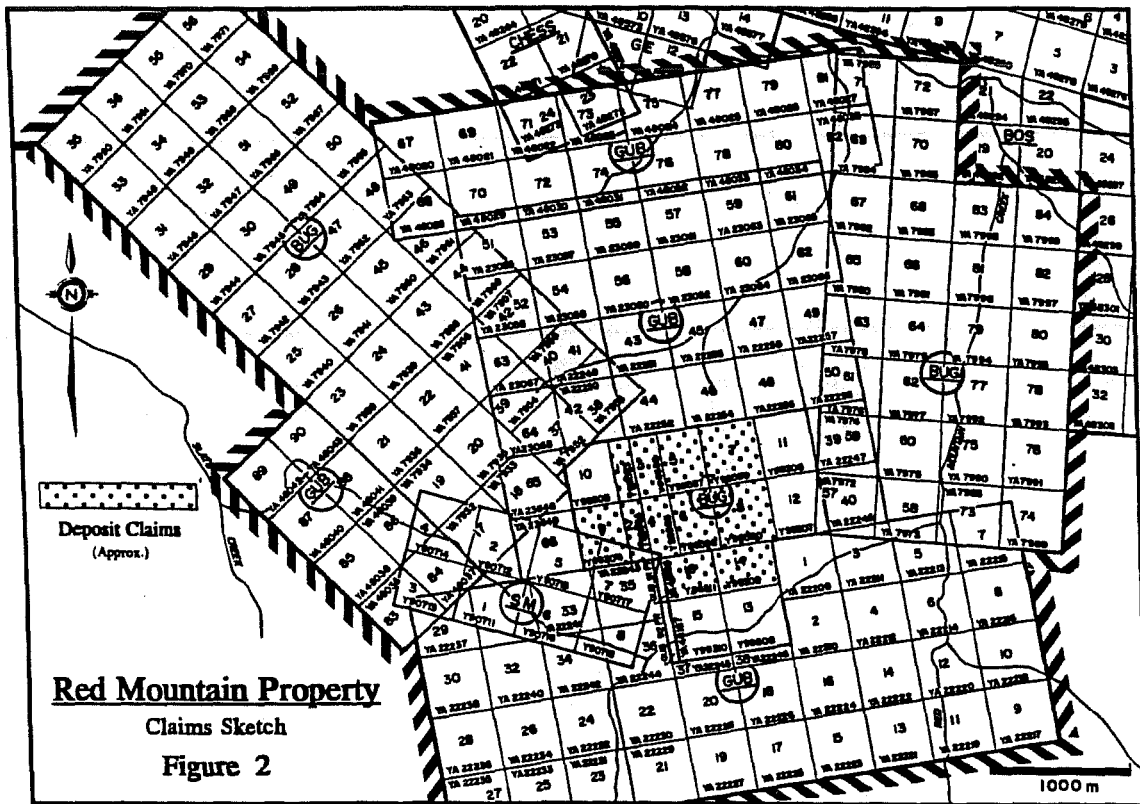
continue to be so maintained on an annual basis indefinitely.

Of the 183 claims, approximately 10 claims directly overlie the deposit as it is delimited to date (Figure 2). Under the provisions of the Yukon Quartz Mining Act, these claims can be brought to a 21-year lease by submission and registration of a boundary survey for each and every claim. The Act does not, however, permit the leasing of any claims which mark potential downplunge extensions of the deposit, nor does it provide for leasing of surfaces for infrastructure other than a maximum of 5 acres for a millsite.

All mineral activities at the property are governed by the Yukon Quartz Mining Act. At the time of writing of this report, however, legislation is pending in regards to certain amendments to the Act, which in most part pertain to new provisions to regulate land use.

All present indications are that the anticipated changes will not effect land tenure and rights related thereto, nor will they hamper future exploration beyond land-use

permitting requisites. In the event underground development work, or production is contemplated, however, activities will be subject to Federal legislation for the protection of the environment, and to that end will have to comply with the dictates of an environmental assessment review process.



PREVIOUS EXPLORATION HISTORY

1915, 1936

The earliest records of exploration work in the general area date back to 1915, concerning themselves mainly with occurrences of Silver and Lead within the sediments of the Big Salmon Complex. Some twenty years later, occurrences of Galena in the vicinity of Red Mountain were noted by the GSC (1936), in addition to the presence of an adit and several open cuts on the north side of the Boswell River, some 3km to the north of the property.

1966-1969

During 1966-67, while following up occurrences of Silver-Lead, Boswell River Mines staked 396 claims surrounding Red Mountain. Their initial work, overlapping the Mountain, consisted of airborne magnetic, electromagnetic and radiometric surveys. Field activities were accelerated in response to the results of a 1968 surface geochemical survey which revealed a strong northwest trending Molybdenum anomaly over Red Mountain which was also coincident with Silver, Lead and Copper anomalies over the central and southeast portions.

After constructing a winter road to the property from the Canol Road, and establishing access to worksites, Boswell River Mines explored the eastern portion of the anomaly during 1969 by drilling 16 holes (3,126m), and completing scintillometer (20,655m) and magnetic (4,694m) surveys. The drilling intersected several low grade Molybdenite zones, the most significant of which graded 0.084% MoS₂ over 176 feet (ddh 69-F-1).

Work was halted due to what appears to have been lack of funding, and the claims were allowed to lapse. The property was not mapped in detail, and the western portion of the anomaly (currently known to overly the deposit) was left unexplored.

1971, 1975

During 1971 the claims were restaked by J.B.O'neil, and geologically mapped by P.H.Sevensma, but subsequently allowed to lapse. The property was restaked by R.G.Hilker during 1975, and after cursory prospecting, was sold during 1976 to Tintina Silver Mines Limited. Minor hand trenching was carried out later that year.

1977-1983

Amoco Canada Petroleum Company Ltd. optioned the property from Tintina during 1977 and, during the following five years to 1982, conducted a systematic and integrated evaluation of the property. This work consisted of detailed geological mapping, surface and rock geochemical surveys, geophysical surveys, orthophotography, land surveys, metallurgical and petrographic work and 21,391m (55,705ft) of NQ&HQ-core diamond drilling in 32 holes.

By virtue of the excellent spatial control afforded by surface surveying, the above work documented a most comprehensive database for assessment of the property, and by 1982, an apparently elongate concentration of Molybdenite mineralization

had been delineated in reasonable detail over 1050m of strike, 450m of width and down to a depth of 1150m below surface.

Ore reserve estimates were calculated during 1981, and later revised in 1983, indicating drill indicated possible reserves of 187,270,000 tonnes grading 0.167% MoS₂ at a 0.10% MoS₂ cutoff grade. These reserves include a core of significant tonnage of higher grade material (>0.2%-0.3% MoS₂) which remains open at depth and to the north.

1982-present

After completion of the 1982 field work campaign, it was decided that any additional exploration from surface would not materially contribute to further an understanding of the deposit beyond that already provided by the information on hand, and that future exploration of the deposit would be best carried out from underground as a precursor to development and feasibility work.

Considering the weak Molybdenum markets of the past ten years, there has been no work at the property since 1982, and the claims have been maintained in good standing.

Amoco's 1977 option of the property was subsequently amended to establish a joint venture between Amoco and Tintina, according to which each of the two companies presently holds an undivided 50% interest in the property, Tintina being the current Operator. An aggregate of \$6 million have been spent to date by the joint venture on work at the property.

GEOLOGY

General Geologic Setting

The Red Mountain deposit is a typical molybdenum porphyry breccia system with multiple episodes of molybdenite mineralization hosted within a Quartz Monzonite Porphyry and adjacent hornfels.

As a small high level mid-Cretaceous stock which does not appear to have vented to surface, the Quartz Monzonite Porphyry exhibits a relatively well defined pattern of alteration and mineralization. It has been intruded near, and along, its northern boundary by a barren quartz eye diorite dike which also truncates the reserves. All indications from limited drilling to the north of this dike are that Molybdenum mineralization extends beyond it (at least on the 1200 level).

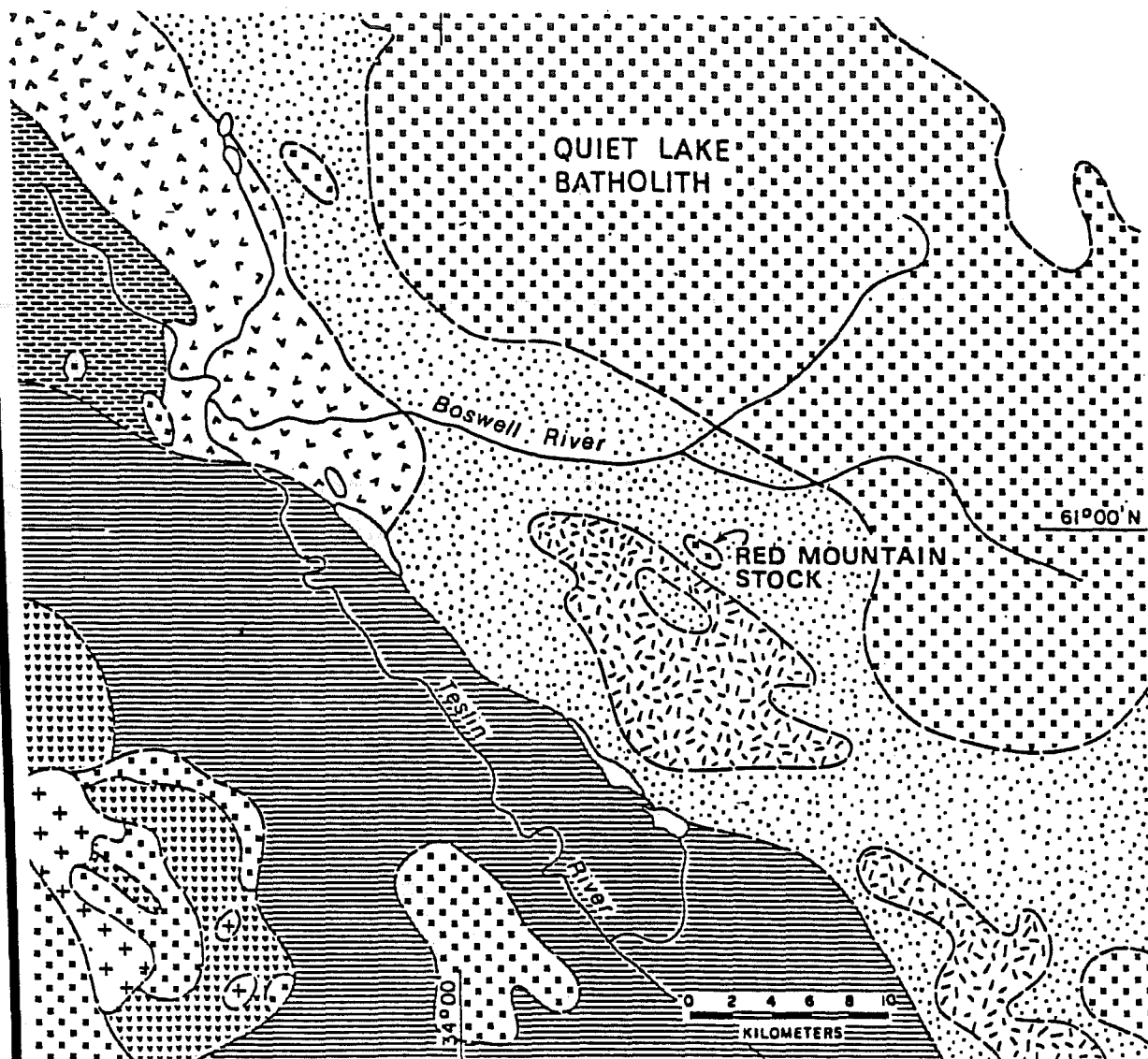
The Quartz Monzonite Porphyry is part of a steeply dipping, oval shaped, northwest trending intrusive complex with overall dimensions of 1450m by 650m (Figures 3 and 4). The intrusive complex consists of a number of phases, namely: Pre-Mineral Quartz Monzonite Porphyry, Post Mineral Quartz-Eye Diorite, Quartz Diorite Porphyry and Granodiorite Porphyry. The Quartz Monzonite Porphyry is the major member of the intrusive complex, representing 80% of its surface exposure, the remaining 20% being accounted for by the Post Mineral Quartz-Eye Diorite as a 50m wide northwesterly dike intruded along, or near, the northern contact of the Quartz Monzonite Porphyry.

The Red Mountain intrusive complex is emplaced within northwest trending argillaceous sediments associated with the Yukon Cataclastic Complex. Near, and around, Red Mountain, these sediments typically consist of fine grained, graphitic shales and light grey schists. Chlorite schist, quartzite and marble have also been observed in the northeast portion of the property. The sediments are generally moderately deformed exhibiting cleavage, folding and boudinage.

On a regional scale, within the general area of Red Mountain, the Teslin Suture Zone marks the western boundary of the Big Salmon Range. This Zone is represented by a wide belt of northwest trending, steep southwesterly dipping, cataclastic rocks including syn-orogenic sediments, interlayered volcanics and remnant crustal material. The boundaries of the suture zone are sharp, marked by abrupt lithologic and structural contrasts.

Several Cretaceous granitic rocks are distributed throughout the region. The Quiet Lake Batholith is the largest such intrusive nearest to Red Mountain some 6Km to the east. It is a Quartz Monzonite body with a gneissic border phase which has yielded K-Ar radiometric ages of 83.2Ma and 68.3Ma. In contrast, while the K-Ar radiometric age of 95.6 ± 2.8 Ma determined for the Red Mountain intrusive complex is older than the batholith, it is in conformity with ages for a number of other intrusives in the region (e.g. Cassiar, Seagull and Glenlyon Batholiths).

Alteration, structural geology, surface geochemistry, and geophysical work are summarized below. Representative cross-sections and level plans for the deposit are presented in the next section.



LEGEND

CRETACEOUS - TERTIARY
 Granite, quartz monzonite

CRETACEOUS
 Quartz monzonite, granodiorite, quartz diorite

Basalt, andesite, quartz dacite

JURASSIC
LABERGE GROUP
 Greywacke, conglomerate, arkose, greenstone

TRIASSIC - JURASSIC
 Argillite, sandstone, siltstone

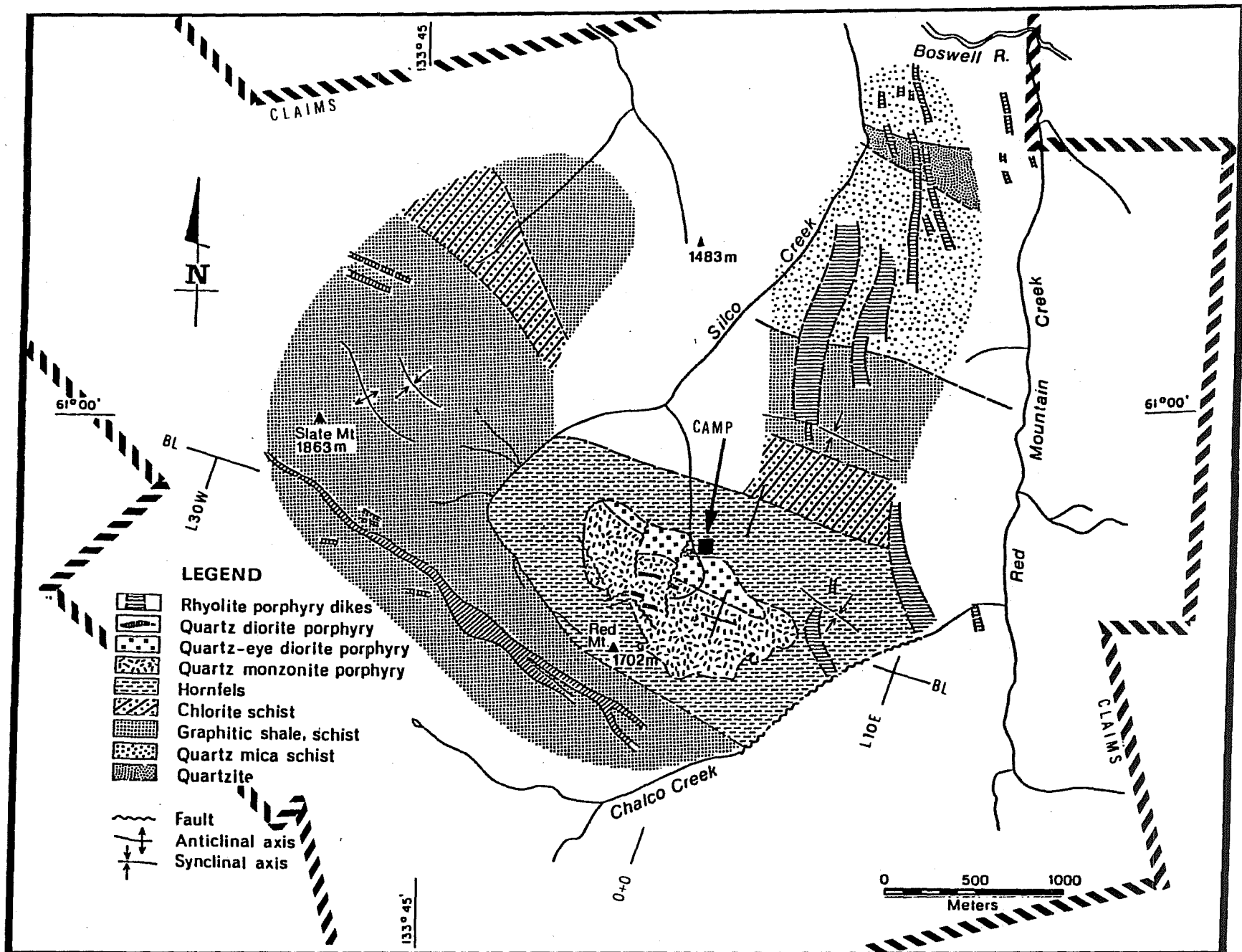
TRIASSIC
 Basaltic greenstone, lesser limestone

PALEOZOIC
 Gneissic granodiorite

CARBONIFEROUS - PERMIAN
YUKON CATACLASTIC COMPLEX
 Schist, gneiss, shale.

Red Mountain Property, Generalized Regional Geology.

Figure 3



Red Mountain Property. General Property Geology

Figure 4

Mountain, and anomalous Mo has been reported from streams draining to the north and, to a lesser extent, to the northwest.

Anomalies, typically ranging 20ppm-40ppm Mo (background 4ppm Mo), have been noted to occur down-stream as far as 1.6km away. Subsidiary streams nearer the deposit have returned anomalies with 300ppm Mo, and samples of soils overlying the deposit have typically returned 250ppm-600ppm Mo, with several higher values upward to 4800ppm Mo.

Surface geochemistry is presented in Figure 5, showing an elongate, 1900mx500m, northwest trending ≥ 100 ppm Mo anomaly characterized by two subanomalies exceeding 250ppm Mo. The western subanomaly, measuring 770mx400m, directly overlies the deposit as it has been delimited to date.

The eastern subanomaly, on the other hand, measures 800mx250m, is also anomalous in lead and silver, and defines the area of interest tested by Boswell River Mines during 1968, marking the earliest exploration efforts at the property. The subanomaly appears to be underlain predominantly by a pyrite zone, occupying a steep hill with well oxidized fine talus gossan and subcrop. While the subanomaly may reflect surface Mo enrichment, the lack of information therefrom, especially from drilling, does not enable conclusion of provenance.

Considering the zoned nature of the deposit with its higher grades well below surface, it is conceivable that the eastern subanomaly is the surface expression of material as yet untested by the deep drilling similar to that completed over the western subanomaly.

Other metals noted in surface geochemical work define zonation patterns typical of porphyry molybdenum systems. Tungsten, Fluorine, lead, silver, copper and zinc anomalies are typically peripheral to Mo, with a general tendency for lead-silver to "favor" and overlap the eastern Mo subanomaly. Zinc defines a large halo draped along the fringes of the Mo anomaly, some 400m-600m away from its core.

Geophysical Work

Geophysical work at the property has been limited in scope and coverage, restricted in most part to areas overlying the deposit and its general vicinity. This work is represented by an Induced Polarization and Resistivity survey over the strongest portion of the surface geochemical Mo anomaly, and a fluxgate magnetometer survey over the intrusive complex and adjacent hornfels.

A horseshoe-shaped chargeability domain with moderate-high resistivity was outlined over the intrusive complex by the IP/Resistivity work, whereas the magnetometer survey indicated relatively homogeneous magnetics over the intrusive complex surrounded by an envelope characterized by erratic magnetic highs attributed to pyrrhotite in the pyritic hornfels.

MINERALIZATION

Molybdenite mineralization at Red Mountain appears to be associated in most part with only with the Quartz Monzonite Porphyry member of the Red Mountain intrusive complex, occurring as mineralization within it and within surrounding hornfels. Mineralization delineated to date occupies the western portion of the Quartz Monzonite Porphyry, although data on hand does not suggest it to be restricted thereto. (Level plans, cross-sections and a longitudinal are presented in Figures 6 to 9. Grade contour level plans are summarized in Appendix B).

Within the Quartz Monzonite Porphyry, Molybdenite occurs predominantly as fine grained salvages and disseminations within well developed Quartz stockwork veins less than 1cm in width (typically 1-3mm), in free form or in association with pyrite. Within the hornfels, on the other hand, and especially at depth and nearer the Quartz Monzonite Porphyry, it occurs also as parallel bands within quartz veins, such that throughout the better grading localities a significant portion of the Molybdenite occurs as coating on fractures and as massive seams of up to six millimeters thick.

Minor chalcopyrite, galena and sphalerite have been noted, in addition to a pyritic zone peripheral to the Molybdenite mineralization with local pyrite contents of up to 10%. Limonitic gossan overlies part of the pyrite zone.

Trace element analyses indicate a subtle inverse correlation between MoS_2 and Cu/Zn/W, and no correlation of Fluorine with MoS_2 . Very limited assaying of core for precious metals has returned insignificant results (Ag 2ppm, Au 16ppb). It is of note, however, that despite its relatively low tenor, silver was also recovered in some concentrates during metallurgical testing. In general terms the Molybdenum zone is characterized by the following metal contents:

Cu	0.001%-0.05%	(Avg 0.01%, Max 0.02%)
Zn	0.003%-0.015%	(Avg 0.015%, Max 0.26%)
Pb	0.002%-0.004%	(Avg 0.003%, Max 0.26%)
W	2ppm-14ppm	(Avg 6.8ppm, Max 2,000ppm)
F	400ppm-950ppm	(only partial data)

Surface exploration work and diamond drilling on an approximately 125m by 125m spaced drill hole grid, have probed the Quartz Monzonite Porphyry in relative detail down to 1150m below surface (460m Level). There is a general trend for better grade with depth defining a higher grade core ($>0.2\% \text{ MoS}_2$), laterally away from which quartz-stockwork and associated mineralization gradually diminish in intensity. Vertically upward from this core, molybdenite tenor decreases nearer surface even though the quartz-stockwork is well developed.

Molybdenite mineralization in the $0.05\%-0.10\% \text{ MoS}_2$ range or better has been mapped over a strike length of 1050m, a maximum width of 400m-500m and down to a depth of 1150m below surface (the 460m Level). Within this zone, and approximately 400m-500m below surface (1200m Level), a higher grade core grading $>0.20\% \text{ MoS}_2$ has been encountered over some 375m of strike and down to a depth of 1150m below surface. This higher grade core has been intersected by drill holes over approximately 200m of its width, although its ultimate dimensions

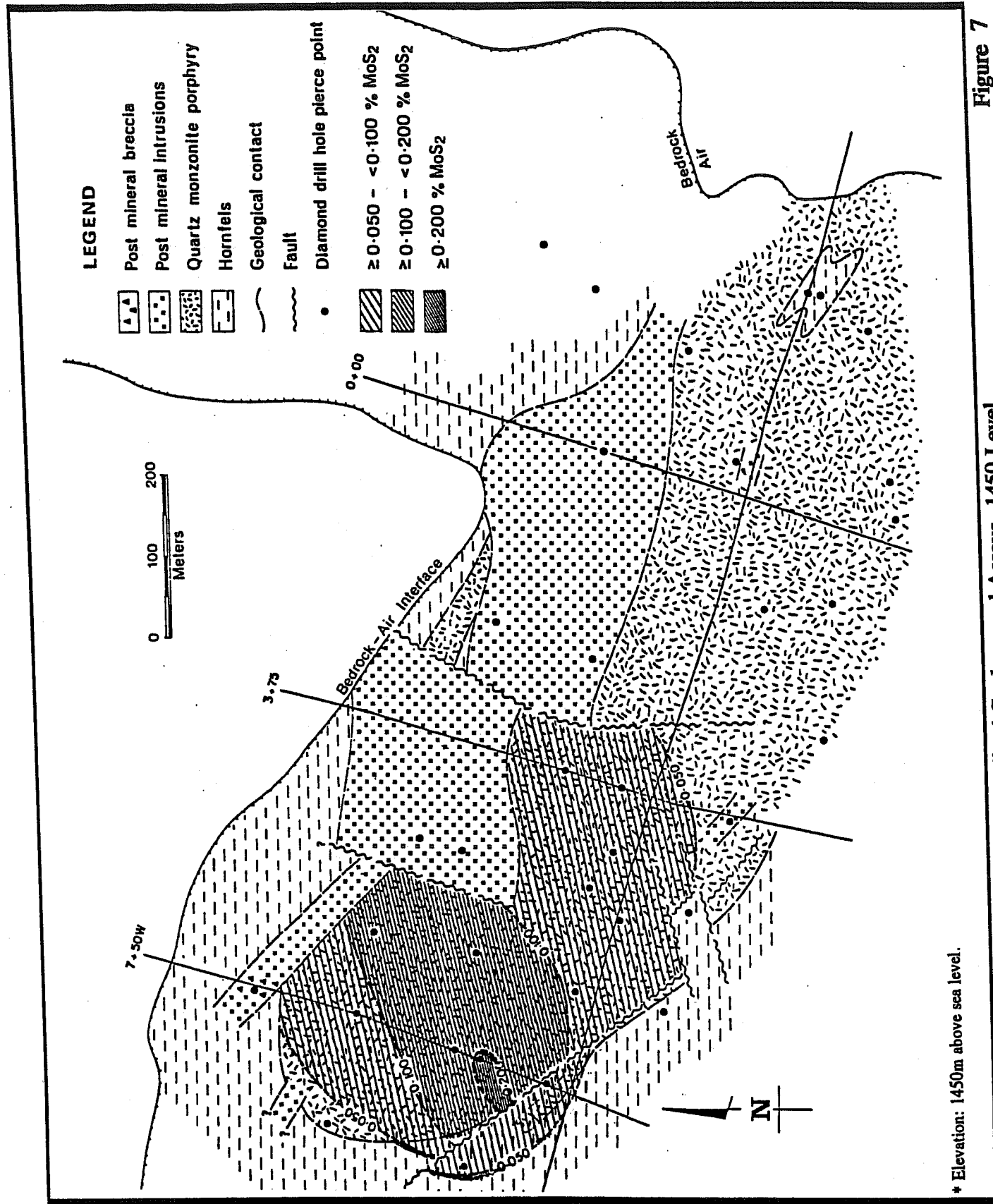
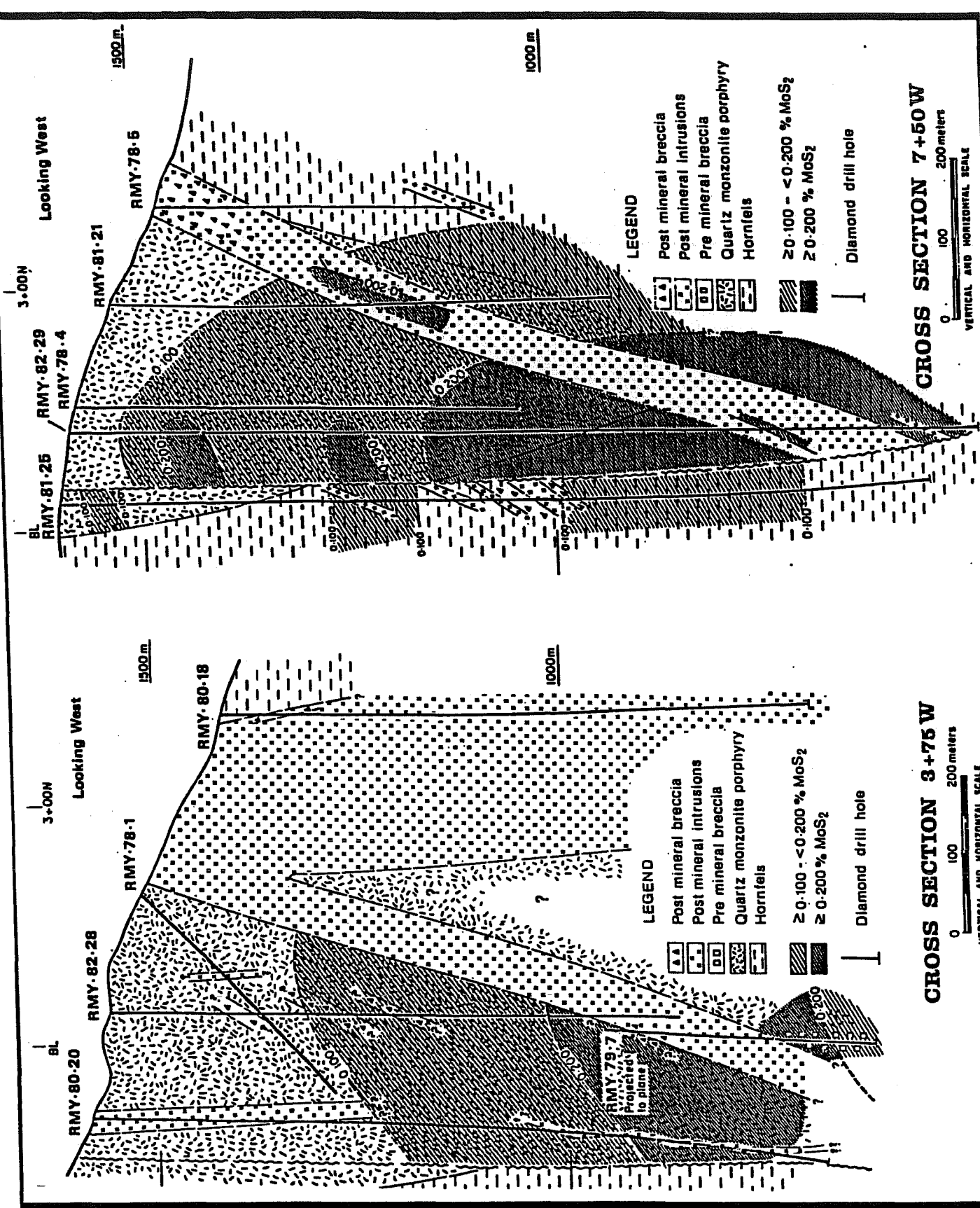


Figure 7

Red Mountain Molybdenum Deposit, Generalized Geology and Assays, 1450 Level.



Red Mountain Molybdenum Deposit, Generalized Cross-Sections 3+75W and 7+50W. Figure 8

METALLURGICAL TESTING

General Background and Summary of Results

Metallurgical tests were undertaken during 1980 to assess the amenability of Red Mountain ore and its suitability to the production of a saleable concentrate. More extensive tests were completed during 1981-1982 to address the recommendations of the earlier work and to expand upon observations therefrom. Fresh as well as oxidized ore were tested.

The tests demonstrated that unoxidized Red Mountain ore is of relatively simple mineralogy, and that the Molybdenum is easily liberated in the flotation stages achieving excellent recoveries. The test results suggest a relatively coarse effective grind near 50% -200mesh with 95% + Mo recoveries in the rougher flotation.

During the Cleaner Flotation tests, copper/lead depression was also investigated with the addition of Nokes reagent. Copper levels in the concentrates were effectively reduced to meet acceptable concentrate specifications, and lead levels were also successfully depressed to near, or below, acceptable specifications.

Locked-cycle tests, representing the nearest laboratory simulation of pilot mill conditions, achieved an average recovery of 94% Mo with a grade of 49.55% Mo (82.6% MoS₂). Silver was also recovered during these tests averaging 143 gm/t in the concentrate.

Despite the success during cleaner flotation tests in depressing copper/lead levels with the use of Nokes reagent, no depressants were used during the locked cycle tests. Accordingly, copper/lead levels of the locked-cycle test concentrates were unacceptably high. Copper/lead removal was addressed by separate leaching testwork which successfully leached out 98% of the two metals.

The metallurgical testwork suggests that a good grade concentrate of acceptable purity can be produced from Red Mountain ore either by flotation and leaching, or by flotation alone with the use of Nokes or other depressants. Details of the testwork is presented below.

1980 Testwork: General Description

Preliminary laboratory test were carried out during 1980 by Mountain States Research & Development Laboratories to develop a suitable flowsheet for the recovery of molybdenite. Two 50lb samples were tested separately, one of which represented surface material and the other fresh rock. Head grades of the two samples are tabulated below, but whether they are representative of typical ore is questionable.

<u>Element</u>	<u>Fresh Ore</u>	<u>Oxidized Ore</u>
Molybdenum (Mo %)	0.09 %	0.06 %
Oxide Molybdenum	-	0.024 %
Copper	0.002 %	0.01 %
Iron	1.08 %	2.28 %
Lead	0.004 %	0.004 %
 EQUIV GRADE (MoS ₂ %)	 0.15 %	 0.10 %

Three series of tests were completed as follows: **Series 1:** Three tests performed on each sample to determine the effect of grind on recovery; **Series 2:** Tests to produce a final molybdenite concentrate to assess any difficulties related thereto; **Series 3:** Tests to determine the effectivity of Nokes reagent in depressing lead content. In addition, the

effectivity of the Nokes reagent in depressing pyrite collected with the Phillips molybdenite promoter Orfom CO400 was also assessed.

Despite the overall low molybdenum content of the samples, the above tests demonstrated that the unoxidized material could easily be upgraded into saleable concentrates, but that the elevated lead content of the final concentrates would probably require a chloride leach circuit. Details of the tests are not discussed herein since they were subsequently superseded by more rigorous work during 1981-1982 the results of which are presented below.

1981-1982 Testwork: General Description

Following the 1981 field program, representative samples from drill core were combined into three composite samples, and five pallets of material (apprx 1050kg) were submitted to Lakefield Research for testing. Unlike the 1980 work, a larger quantity of more representative material was tested in detail to address recommendations of the 1980 tests and to augment same with additional treatments.

Sample Characteristics:

<u>Element</u>	<u>SampleAA</u>	<u>SampleCC</u>	<u>SampleBB</u>
Molybdenum (Mo %)	0.17%	0.084%	0.042%
Oxide Molybdenum	<0.001%	<0.001%	0.021%
Copper	0.007%	0.006%	0.014%
Iron	1.43%	1.91%	2.54%
Lead	0.015%	0.003%	0.003%
Specific Gravity	2.69	2.71	2.71
ALTERATION	FRESH	FRESH	OXIDE
EQUIV GRADE (MoS₂%)	0.28%	0.14%	0.07%
Bond Work Index	11.81	11.21	11.63

Of the three samples, one sample represented oxidized material (Sample BB), while the remaining two (Samples AA and CC) were of fresh ore. The following tests were performed:

Rougher Flotation tests to investigate the effect of grind on recovery; **Cleaner Flotation** tests to examine the effects of regrinding the rougher concentrate and the

use of Nokes Reagent as a sulphide depressant; **Locked Cycle** tests (eight cycle floatation) of the two ore samples (AA and CC) to produce a high grade concentrate without the addition of depressants; **Leaching Tests** to evaluate the response of lead and copper levels in the cleaner concentrates, and to assess the effectivity of leaching to lowering of levels of the two metals in the final concentrate; and, **Work Index** tests to determine the Bond Work Index for the three samples.

Preliminary mineralogical examinations were also made of head samples briquettes from the untreated samples, as well as of the combined cleaner concentrate produced in the locked cycle testwork from the two fresh ore samples.

Molybdenite was the only Mo mineral identified in both samples of fresh ore, and chalcopyrite was the only copper bearing mineral (occurring as liberated grains and fine inclusions in pyrite). Pyrite and marcasite were the most abundant sulphides. No lead minerals were identified and only a trace of sphalerite was noted in one sample.

Only a minor amount of molybdenite was noted in the oxide sample (Sample BB), and x-ray diffraction indicated the possibility that the oxide molybdenum is present as Wulfenite (PbMoO₄) and Molybdite (MoO₃). A few particles of chalcopyrite were identified. While no lead minerals were identified, the examination suggested that lead is represented in the form of Pb-Mo oxide (wulfenite).

Fresh Ore Tests: 1981-1982

The Rougher Flotation tests, of 2kg charges, representing 8-minute flotation with a fuel oil collector and MIBC frother, generally achieved better weight as well as Molybdenum recoveries with finer grinds, but at some expense to Mo grade. For example, in Sample AA, for an increase in fineness from 41.8% to 61.6% - 200mesh, weight recovery increased from 8.6% to 12.4%, Molybdenum recovery increased 93.5% to 98.0% and Mo grade decreased from 1.68% to 1.37%. While, the application of Orfom 0 300 induced a large increase in weight recovery, same was noted to be primarily the result of increased recovery of other sulphides (mainly pyrite) with relatively little improvement in the recovery of Mo (97.1% to 98.5%). Test results are summarized in Table 1.

Trends observed for sample CC were similar to those for sample AA with the exception that the loss in Mo grade for the finer grinds was minimal to nil. The application of Pennfloat 3 and of Aero 3302 as collectors was also assessed, and both were noted to enhance weight recoveries while contributing little to improvement in Mo grade. Progressive increasing of fineness appeared to have no commensurate beneficial effects on recoveries, suggesting an effective optimum grind near 50.6% -200mesh (but <61.1%).

The Cleaner Flotation tests, performed on twelve 10kg charges, included five tests also investigating the effectivity of the Nokes reagent (LR744) in depressing lead, copper and iron levels in final concentrates. The tests achieved Mo recoveries ranging 81%-89%, grading 43%-56% Mo.

Impurity levels of concentrates produced without Nokes were noted to be above acceptable specifications for a saleable concentrate, but all five tests with Nokes produced concentrates with significantly lowered copper and lead levels to meet these specifications (i.e. <0.15% Cu, <0.05% Pb). Copper levels were successfully depressed in all five tests to well below 0.15%, and lead was lowered to below 0.05% in two of the tests (0.036%, 0.044%) and to near-0.05% in the remaining three (0.057%, 0.063%, 0.071%).

Despite the above success with Nokes, no additional testing was carried out to more thoroughly investigate the use depressants in the flotation circuit, and instead the effectivity of leaching was assessed in a separate series of tests. Cleaner Flotation test results are summarized in Table 2.

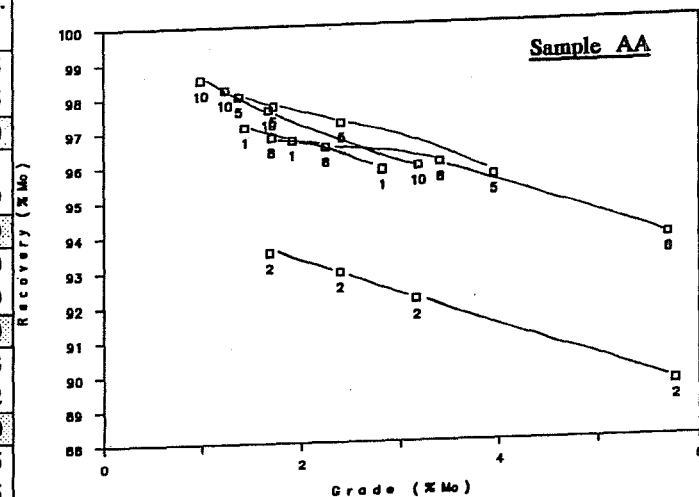
Locked Cycle Tests conducted on the two samples of fresh ore, without the use of depressants, successfully produced good grade concentrates with relatively high recoveries as follows:

Sample AA	51.1% Mo (85.2% MoS ₂) Grade. Projected Recovery of 96.5%
Sample CC	48% Mo (80% MoS ₂) Grade. Projected Recovery of 91.6%

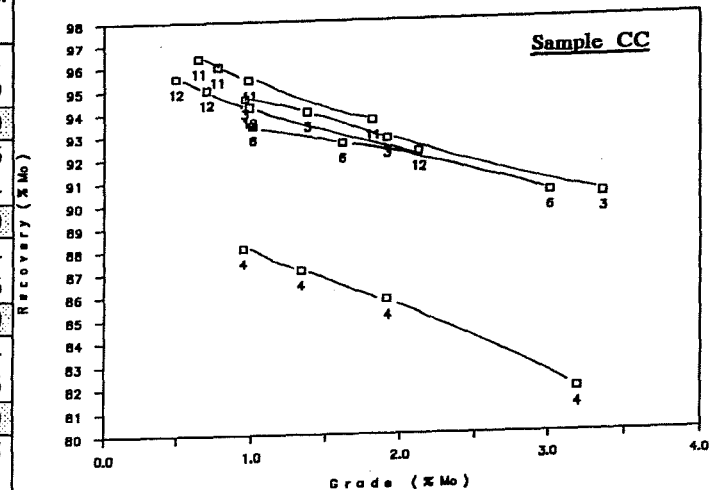
The tests also recovered 218.5 g/t and 68.2 g/t of silver from samples AA and CC, respectively. There appears to have been no assaying for other precious metals.

Considering that no depressants were used, copper and lead levels of the concentrates produced were relatively high. The locked cycle concentrates were combined and utilized as feed during the leaching testwork to address these impurities. Details of the cycle tests and additional metallic profiles are presented in Table 3.

Test no	% -200 mesh	Collector	Na ₂ SiO ₃ gm/tonne	pH	Product	Weight %	Assay % Mo	% Dist. Mo
2	41.8	Fuel Oil	-	8.0	Rougher Conc	8.6	1.680	93.5
					Rougher Tail	91.4	0.011	6.5
					Head (calc)	100.0	0.154	100.0
1	52.4	Fuel Oil	-	7.8	Rougher Conc	10.6	1.430	97.1
					Rougher Tail	89.4	0.005	2.9
					Head (calc)	100.0	0.156	100.0
5	61.6	Fuel Oil	-	7.9	Rougher Conc	12.4	1.370	98.0
					Rougher Tail	87.6	0.004	2.0
					Head (calc)	100.0	0.174	100.0
8	52.4	Fuel Oil	500	7.9	Rougher Conc	9.7	1.700	96.8
					Rougher Tail	90.3	0.006	3.2
					Head (calc)	100.0	0.170	100.0
10	52.4	Orfom 0 300	-	8.0	Rougher Conc	16.1	0.990	98.5
					Rougher Tail	83.9	0.003	1.5
					Head (calc)	100.0	0.162	100.0



Test no	% -200 mesh	Collector	Na ₂ SiO ₃ gm/tonne	pH	Product	Weight %	Assay % Mo	% Dist. Mo
4	39.1	Fuel Oil	-	7.3	Rougher Conc	7.3	0.940	88.1
					Rougher Tail	92.7	0.010	11.9
					Head (calc)	100.0	0.078	100.0
3	50.6	Fuel Oil	-	7.8	Rougher Conc	8.4	0.950	94.6
					Rougher Tail	91.6	0.005	5.4
					Head (calc)	100.0	0.084	100.0
6	61.1	Fuel Oil	-	7.7	Rougher Conc	7.8	1.000	93.4
					Rougher Tail	92.2	0.006	6.6
					Head (calc)	100.0	0.083	100.0
11	50.6	PF3	-	7.3	Rougher Conc	11.1	0.640	96.4
					Rougher Tail	88.9	0.003	3.6
					Head (calc)	100.0	0.074	100.0
12	50.6	A3302	-	8.0	Rougher Conc	14.8	0.490	4.5
					Rougher Tail	85.2	0.004	1.5
					Head (calc)	100.0	0.076	100.0



Rougher Flotation Test Results – Fresh Ore

Red Mountain Molybdenum Deposit

Table 1

Sample AA

Test No.	Reagents (gm/tonne)				Fineness		Rougher Flotation Time	Cleaning Stages	Ro. Tail. Mo %	Rougher Concentrate						Cleaner Concentrate					
	Fuel Oil	Nokes (LR744)	Na2SiO2	MIBC	% -200mesh	Regrind				Assays				Recovery % Mo	Wt %	Assays				Recovery % Mo	
										Mo %	Cu %	Fe %	Pb %			Mo %	Cu %	Fe %	Pb %		
13	25	-	-	27.50	48.7	91.6	8 min	3	0.009	3.64	4.17	0.070	1.82	0.18	94.6	0.33	43.5	0.570	2.30	1.610	89.4
14	25	350	-	27.50	48.7	97.1	8 min	3	0.017	3.47	4.47	0.087	3.02	0.22	90.4	0.25	56.5	0.023	0.25	0.063	82.4
18	35	550	-	30.00	48.7	90.2	8 min	3	0.013	3.85	4.16	0.075	1.74	0.17	92.4	0.29	50.4	0.026	0.36	0.071	84.6
19	35	550	100	27.50	48.7	88.6	15 min	3	0.017	3.80	3.20	0.063	1.74	0.12	88.2	0.26	40.8	0.014	1.03	0.057	76.6
20	35	-	-	30.00	48.7	90.2	18 min	4	0.010	5.00	3.10	0.050	1.95	0.13	94.2	0.30	44.6	0.510	2.28	1.560	81.6
26	70	-	-	50.00	50.0	98.7	15 min	4	0.007	7.18	1.97	0.036	2.14	0.084	95.6	0.25	50.9	0.420	0.75	1.690	86.2

Test 26 - Cleaner Concentrate <0.001 % U3O8

Sample CC

Test No.	Reagents (gm/tonne)				Fineness		Rougher Flotation Time	Cleaning Stages	Ro. Tail. Mo %	Rougher Concentrate						Cleaner Concentrate					
	Fuel Oil	Nokes (LR744)	Other	Orfom 0 300	% -200mesh					Assays				Recovery % Mo	Wt %	Assays				Recovery % Mo	
					Ro. Tail.	Regrind				Mo %	Cu %	Fe %	Pb %			Mo %	Cu %	Fe %	Pb %		
15	25	-	-	-	44.5	92.0	10 min	3	0.012	3.38	2.96	0.045	2.47	0.033	89.6	0.22	39.3	0.31	3.42	0.32	77.5
16	25	350	-	-	44.5	92.0	10 min	3	0.008	3.35	3.13	0.046	2.48	0.035	93.1	0.22	43.5	0.04	1.37	0.036	84.9
22	-	1000	(1) 500	75	60.0	98.6	15 min	4	0.005	8.15	1.15	0.045	10.39	0.036	95.3	0.15	55.5	0.13	1.62	0.044	84.4
23	-	-	-	77.5	59.2	99.1	15 min	4	0.005	6.81	1.62	0.051	5.67	0.022	95.9	0.20	47.3	0.44	5.75	0.24	82.5
24	65	-	-	-	48.1	99.1	15 min	3	0.003	4.93	1.41	0.037	3.03	0.012	96.1	0.11	54	0.26	0.69	0.18	81.9
25	-	-	(2) 1500	65	60.0	99.7	15 min	5	0.005	7.73	1.34	0.044	5.52	0.016	95.7	0.21	45.4	0.37	4.51	0.34	88.3

Other Reagents: (1)=K4Fe(CN)6; (2)=Na2SiO3

Cleaner Flotation Test Results – Fresh Ore
Red Mountain Molybdenum Deposit

Table 2

Locked-Cycle Test Results - Fresh Ore

Sample AA										
Product	Weight %	Assays				% Distribution				Additional Assays
		Mo %	Cu %	Fe %	Pb %	Mo	Cu	Fe	Pb	
Concentrate	0.32	51.10	0.57	1.44	2.18	96.50	44.30	0.30	51.10	Zinc (Zn) 0.73 %
Tailing	99.68	0.01	0.00	1.48	0.01	3.50	55.70	99.70	48.90	Bismuth (Bi) 0.11 %
Head (Calc)	100.00	0.17	0.00	1.48	0.01	100.00	100.00	100.00	100.00	Antimony (Sb) 0.062 %
										Silver (Ag) 218.5 g/t

*From combined fifth cleaner conc.

Sample CC										
Product	Weight %	Assays				% Distribution				Additional Assays
		Mo %	Cu %	Fe %	Pb %	Mo	Cu	Fe	Pb	
Concentrate	0.16	48.00	0.27	1.73	0.36	91.60	7.90	0.10	25.90	Zinc (Zn) 0.56 %
Tailing	99.84	0.01	0.01	2.04	0.00	8.40	92.10	99.10	74.10	Bismuth (Bi) 0.032 %
Head (Calc)	100.00	0.08	0.01	2.04	0.00	100.00	100.00	100.00	100.00	Antimony (Sb) 0.048 %
										Silver (Ag) 68.2 g/t

*From combined fifth cleaner conc.

Leaching Test Results - Fresh Ore

Test No.	% -400 mesh	Leach Sol'n		Time (hrs)	Product	Amount mL, g	Assays, mg/L, %			% Distribution		
		FeCl3	CuCl2				Mo	Cu	Pb	Mo	Cu	Pb
L-1	41.1	100	10	2	Preg.+Wash Sol'n	984	12.3	70.9	707	0.05	50.1	99.4
					Residue	46.4	53.1	0.15	0.009	99.95	49.9	0.6
					Head (Calc)	50.0	49.3	0.28	1.40	100.0	100.0	100.0
L-2	41.1	100	10	4	Preg.+Wash Sol'n	850	9.4	135	849	0.03	69.5	99.6
					Residue	45.9	53.8	0.11	0.007	99.97	30.5	0.4
					Head (Calc)	50.0	49.4	0.33	1.45	100.0	100.0	100.0
L-3	41.1	200	20	4	Preg.+Wash Sol'n	530	13.0	521	1378	0.03	92.1	98.7
					Residue	46.4	54.3	0.051	0.02	99.97	7.9	1.3
					Head (Calc)	50.0	50.4	0.6	1.48	100.0	100.0	100.0
L-4	56.2	100	10	4	Preg.+Wash Sol'n	790	14.7	491	1485	0.03	92.4	99.6
					Residue	84.5	53.7	0.038	0.006	99.97	7.6	0.4
					Head (Calc)	100.0	45.4	0.42	1.18	100.0	100.0	100.0

Additional Assays

	Zinc (Zn)	Antimony (Sb)	Bismuth (Bi)	Silver (Ag)	Uranium (U3O8)
L-3	0.19 %	0.018 %	0.009 %	8.5 g/t	<0.001 %
L-4	0.054 %	0.016 %	0.008 %	10.5 g/t	<0.001 %

Locked Cycle and Leaching Test Results - Fresh Ore Red Mountain Molybdenum Deposit

Table 3

Leaching Tests were conducted on a sample combined from the two final cleaner concentrates of the locked cycle tests. A mineralogical examination was also made.

<u>Leach Feed</u>		<u>Final Residue</u>	
		<u>L3</u>	<u>L4</u>
Mo	50.3 %	54.3 %	53.7 %
Cu	0.42 %	0.05 %	0.038 %
Fe	1.37 %	N/A	N/A
Pb	1.49 %	0.02 %	0.006 %
Zn	0.67 %	0.19 %	0.054 %
Bi	0.084 %	0.009 %	0.008 %
Sb	0.057 %	0.018 %	0.016 %
Ag	168g/t	8.5g/t	10.5g/t
U ₃ O ₈	N/A	<0.001 %	<0.001 %

The tests were conducted on 50gm splits from the concentrate, in a covered beaker with 20% solids in solution of 300g/l CaCl₂, 75g/l NaCl and 30g/l HCl containing chlorides, FeCl₃ and CuCl₂.

Mineralogical examination revealed Molybdenite to be the major Mo mineral, although a few particles

resembling a mixture of cpy-molybdenite were also present. The principal sulphide contaminants included galena, chalcopyrite, sphalerite, pyrite and pyrrhotite. A few occurrences of elemental minerals bismuth, copper and possibly silver were also observed. Quartz and feldspar constituted the major contaminants.

The tests successfully leached out over 98% of the lead and, after slight procedural adjustments, copper levels were lowered from 0.51% to 0.11% to 0.051% and, finally, to 0.038%. The molybdenum concentrate was significantly upgraded in all tests, with the exception of its silver content. Leaching test results are presented in Table 3.

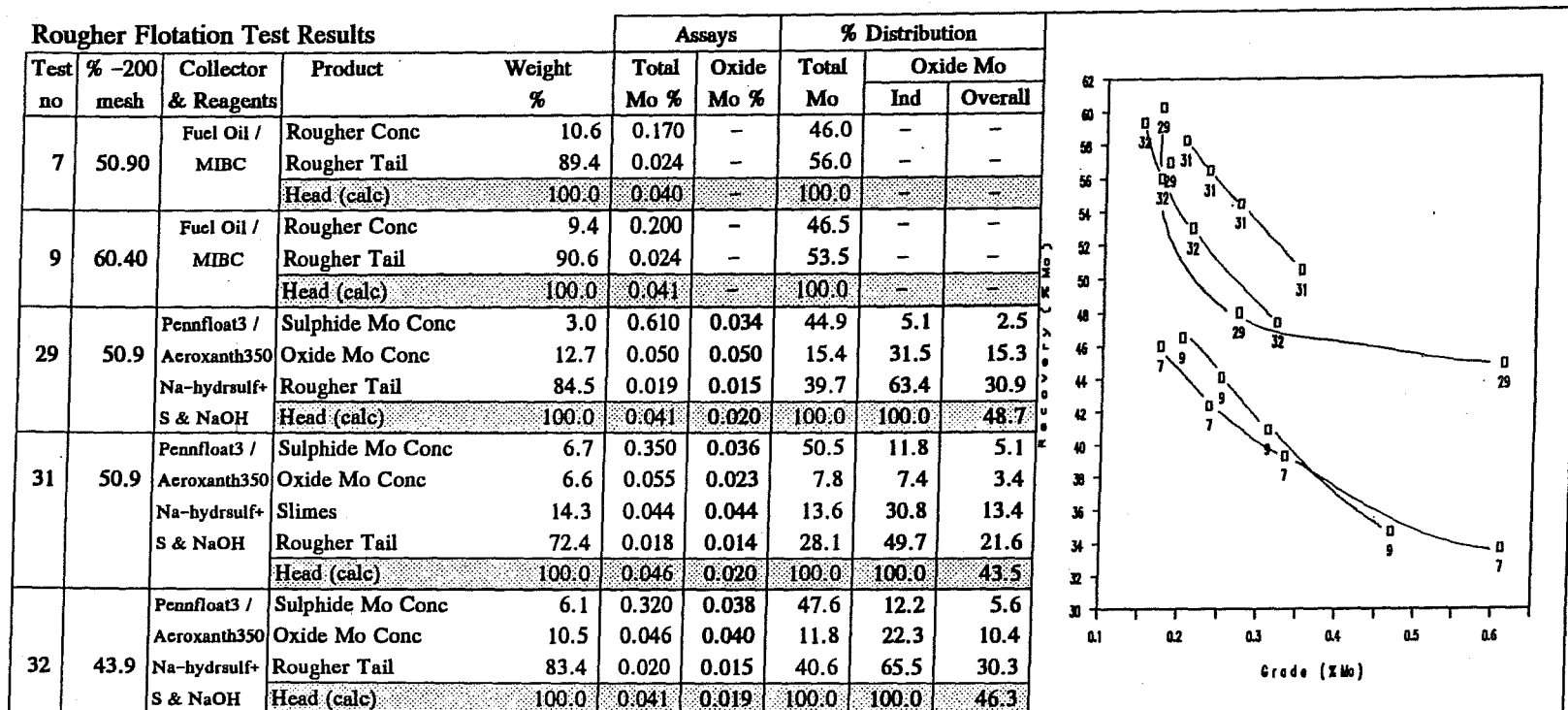
While the above tests successfully addressed concerns about Pb and Cu levels in the concentrate, the Lakefield work stresses that their investigation of depressant systems was limited to the use of phosphate Nokes and ferrocyanide, and accordingly recommends that future work include a more detailed investigation of Cu/Pb depression in the flotation circuit with the use of other reagents such as various oxidants, arsenic Nokes, sulphides and cyanides.

Oxide Ore Tests: 1981-1982

Unlike results from the fresh rock, the oxidized ore did not respond well to flotation. Considering that nearly half of the total molybdenum of the samples was present in the oxide form, therefore not readily floatable, only 46% was recovered despite attempts at variations in test parameters.

Increase in fineness did not have any significant effect on recoveries of Molybdenum from the oxidized material. A large percentage of the oxide Mo was found to be in the 10 μ m fraction, hence sliming was also necessarily addressed.

Only one cleaner flotation test was conducted on the oxide sample to investigate upgrading of the sulphide molybdenum. Although the rougher concentrate was successfully upgraded from 0.31% to 45.8% Mo in four cleaning stages, recoveries were poor due to the relatively low overall head grade (0.042% sulphide Mo) and insufficient sample size. Test results are presented in Table 4.



Cleaner Flotation Test Results

Test No.	% -200 mesh	Product	Weight %	Assays				% Dist. Mo
				Mo %	Cu %	Fe %	Pb %	
33	99.7	Cleaner Concentrate	0.013	45.80	0.72	3.93	1.150	11.9
		Rougher Concentrate	5.88	0.31	0.068	4.39	0.033	36.2
	44.7	Rougher Tail	94.12	0.03	0.016	2.38	0.005	63.8

Rougher and Cleaner Flotation Test Results – Oxidized Ore

Red Mountain Molybdenum Deposit

Table 4

ORE RESERVES

General Background

A preliminary ore reserve study was completed during 1981, and later revised during 1983 to incorporate additional information from subsequent work carried out in response to recommendations of the 1981 study. Reserves were estimated to be 187,270,000 tonnes grading 0.167% MoS₂, at a cut-off grade of 0.10% MoS₂. This material exclude oxidized material overlying the deposit.

The 1981 study classified the estimated tonnages as "Possible Undiluted Geological Reserves As Indicated By Widely Spaced Surface Diamond Drilling". After drilling four in-fill holes, deepening of a previously drilled hole, and completing metallurgical tests on a composite bulk sample from drill core, the 1981 estimates were revised during 1983 and reserves were upgraded and reclassified into the "Drill Indicated Geological Reserve" category.

Regardless of the excellent reliability of the database and the conservatism of methodology of the 1983 study, the reserves are best regarded to represent Drill Indicated Possible Reserves until such time as the deposit has been exposed underground and a representative bulk sample is tested.

Methodology & Parameters

Reserves were calculated manually, relying on information from surveyed drill holes spaced on an approximately 125mx125m grid. 125m spaced cross sections on a 1:1,250 scale were utilized and grades were contoured at 0.05% MoS₂ intervals on 1:2,500 scale level plans, over a vertical depth of 1200m at 50m increments (1650m-450m Levels). Grade contour level plans are appended (Appendix A).

Undiluted reserve tonnages were calculated for four separate MoS₂ cut-off grades as summarized below and tabulated in greater detail in Tables 5 and 6. The reserves are presented as Upper and Lower tonnages to address certain production criteria by separating material which can be bulk-mined and dropped to a production tunnel at the 1075m Level, from material which can be open-pitted from tonnages below that level. Production considerations are presented in greater detail in a later section of this report.

Cut-Off %MoS ₂	Reserves		%MoS ₂ Grade
	Location	Tonnage	
0.10 %	Above Tunnel	100,524,000	0.150
	Below Tunnel	86,746,000	0.187
	Total	187,270,000	0.167
0.15 %	Above Tunnel	41,782,000	0.192
	Below Tunnel	56,194,000	0.224
	Total	97,976,000	0.210
0.20 %	Above Tunnel	11,222,000	0.245
	Below Tunnel	34,813,000	0.258
	Total	46,035,000	0.255
0.25 %	Above Tunnel	4,480,000	0.276
	Below Tunnel	16,816,000	0.297
	Total	21,296,000	0.293

Detailed interpretation of mineralization was not possible since the majority of the geological features controlling the distribution of ore within the deposit have steep dips and have been tested by drilling of steep to vertical holes.

The reserve study assumes that mineralized material is not disrupted by barren dikes intruding it to any greater extent than that suggested by existing drilling, and that any faults, and displacements thereof, will not cause significant ore losses. The

effect of frequently noted broken ground and gouges on grade was also not assessed but was noted as an uncertainty to be addressed by future work from underground.

Drill Indicated Reserves Above Various %MoS2 Cut-Off Grades

(From 575m to 1625m Elevation Above Sea Level)

Elevation Interval (m)	0.05% Cut-off		0.10% Cut-off		0.15% Cut-off		0.20% Cut-off		0.25% Cut-off		0.30% Cut-off	
	Tonnes	%MoS2	Tonnes	%MoS2	Tonnes	%MoS2	Tonnes	%MoS2	Tonnes	%MoS2	Tonnes	%MoS2
1625-1575	1,468,125	0.078										
1575-1525	10,892,812	0.078										
1525-1475	18,832,500	0.081	5,619,375	0.120								
1475-1425	20,224,688	0.100	7,661,250	0.137	1,434,375	0.189						
1425-1375	27,278,437	0.097	9,196,875	0.131	2,337,188	0.158						
1375-1325	26,822,813	0.094	8,817,188	0.130	2,345,625	0.170						
1325-1275	25,489,687	0.109	13,474,687	0.141	4,649,062	0.180						
1275-1225	32,298,750	0.106	13,137,188	0.152	8,488,125	0.172	691,875	0.223				
1225-1175	29,818,125	0.120	15,128,437	0.161	9,053,437	0.186	2,944,687	0.224				
1175-1125	30,324,375	0.121	12,673,125	0.172	6,134,063	0.226	3,704,063	0.260	2,134,688	0.284	717,188	0.301
1125-1075	32,602,500	0.118	14,816,250	0.169	7,340,625	0.218	3,881,250	0.251	2,345,625	0.268		
1075-1025			11,702,812	0.164	7,020,000	0.201	3,594,375	0.234	354,375	0.306		
1025-975			10,487,812	0.185	6,437,812	0.221	4,379,062	0.246	3,088,124	0.263	700,312	0.307
975-925			10,825,314	0.189	7,112,814	0.222	4,978,126	0.252	2,910,938	0.281		
925-875			9,652,499	0.202	6,758,437	0.236	4,303,125	0.271	2,092,500	0.315	1,181,250	0.346
875-825			9,129,374	0.206	6,437,812	0.242	4,176,562	0.284	2,657,812	0.324	1,645,312	0.354
825-775			8,513,438	0.182	5,619,375	0.213	3,341,250	0.243	1,063,125	0.283		
775-725			7,796,250	0.195	4,978,125	0.242	3,121,875	0.284	1,442,813	0.352	691,875	0.435
725-675			8,125,314	0.186	5,180,626	0.224	3,037,501	0.262	1,442,813	0.312	717,188	0.350
675-625			5,906,250	0.183	3,611,250	0.220	2,084,062	0.252	987,187	0.286	430,312	0.300
625-575			4,606,875	0.182	3,037,500	0.212	1,797,188	0.237	776,250	0.253		
T O T A L S	256,052,812	0.105	187,270,313	0.167	97,976,251	0.210	46,035,001	0.255	21,296,250	0.293	6,083,437	0.346

Reserves Distribution as to hypothetical production tunnel collared in the Boswell River Valley entering deposit at the 1075m level.

Above 1075m	256,052,812	0.105	100,524,375	0.15	41,782,500	0.192	11,221,875	0.245	4,480,313	0.276	717,188	0.301
Below 1075m	0		86,745,938	0.187	56,193,751	0.224	34,813,126	0.258	16,815,937	0.297	5,366,249	0.352

Drill Indicated Reserves Above Various Cut-Off Grades

(From 575m to 1625m Elevation Above Sea Level)

Red Mountain Molybdenum Deposit

Table 5

Drill Indicated Reserves Within Various %MoS₂ Grade Ranges (From 575m to 1625m Elevation Above Sea Level)

Elevation Interval (m)	Over 0.30%		0.25%-0.30%		0.20%-0.25%		0.15%-0.20%		0.10%-0.15%		0.05%-0.10%	
	Tonnes	%MoS ₂	Tonnes	%MoS ₂	Tonnes	%MoS ₂	Tonnes	%MoS ₂	Tonnes	%MoS ₂	Tonnes	%MoS ₂
1625-1575											1,468,125	0.078
1575-1525											10,892,812	0.078
1525-1475									5,619,375	0.120	13,213,125	0.064
1475-1425							1,434,375	0.189	6,226,875	0.125	12,563,438	0.078
1425-1375							2,337,188	0.158	6,859,687	0.122	18,081,562	0.079
1375-1325							2,345,625	0.170	6,471,563	0.115	18,005,625	0.077
1325-1275							4,649,062	0.180	8,825,625	0.121	12,015,000	0.072
1275-1225					691,875	0.223	7,796,250	0.167	4,649,063	0.117	19,161,562	0.074
1225-1175					2,944,687	0.224	6,108,750	0.167	6,075,000	0.125	14,689,688	0.078
1175-1125	717,188	0.301	1,417,500	0.275	1,569,375	0.227	2,430,000	0.174	6,539,062	0.122	17,651,250	0.085
1125-1075			2,345,625	0.268	1,535,625	0.224	3,459,375	0.181	7,475,625	0.122	17,786,250	0.076
1075-1025			354,375	0.306	3,240,000	0.226	3,425,625	0.166	4,682,812	0.109		
1025-975	700,312	0.307	2,387,812	0.250	1,290,938	0.205	2,058,750	0.168	4,050,000	0.128		
975-925			2,910,938	0.281	2,067,188	0.210	2,134,688	0.152	3,712,500	0.127		
925-875	1,181,250	0.346	911,250	0.275	2,210,625	0.229	2,455,312	0.175	2,894,062	0.124		
875-825	1,645,312	0.354	1,012,500	0.275	1,518,750	0.214	2,261,250	0.164	2,691,562	0.120		
825-775			1,063,125	0.283	2,278,125	0.255	2,278,125	0.168	2,894,063	0.121		
775-725	691,875	0.435	750,938	0.275	1,679,062	0.225	1,856,250	0.172	2,818,125	0.113		
725-675	717,188	0.350	725,625	0.275	1,594,688	0.216	2,143,125	0.171	2,944,688	0.119		
675-625	430,312	0.300	556,875	0.275	1,096,875	0.222	1,527,188	0.175	2,295,000	0.125		
625-575			776,250	0.253	1,020,938	0.225	1,240,312	0.175	1,569,375	0.125		
T O T A L S	6,083,437	0.346	15,212,813	0.272	24,738,751	0.222	51,941,250	0.170	89,294,062	0.121	155,528,437	0.076

Reserves Distribution as to hypothetical production tunnel collared in the Boswell River Valley entering deposit at the 1075m level.

Above 1075m	717,188	0.301	3,763,125	0.271	6,741,562	0.225	30,560,625	0.172	58,741,875	0.121	155,528,437	0.076
Below 1075m	5,366,249	0.352	11,449,688	0.272	17,997,189	0.221	21,380,625	0.168	30,552,187	0.121	0	

Drill Indicated Reserves Within Various Grade Ranges

(From 575m to 1625m Elevation Above Sea Level)

Red Mountain Molybdenum Deposit

Table 6

Deposit Description & Possible Extensions

In general terms, the above reserves define the Red Mountain deposit as an elongate, 900mx(150-300m), steeply dipping mineralized section within the western part of the Quartz Monzonite Porphyry and adjacent hornfels. The deposit exhibits a well zoned pattern of Molybdenite mineralization with grades decreasing outward, and upward, from a higher grade core at approximately the 1200m level.

Two steep dextral faults, with vertical displacements of 300m-500m, crossing the deposit have been recognized. Other pre-ore and post-ore displacements are also suggested by numerous breccia zones and gouges, and four members of the many stages of cross-cutting veining have been identified to be molybdenum bearing.

While the deposit is truncated to the south by a northwesterly fault zone, all indications are that is open at depth, to the north and possibly to the east, and that there exists excellent potential for significantly expanding known reserves. In decreasing order of certainty they are as follows:

The depth of the deposit, provisionally taken to be the 500m level (1150m below surface), is based only on the length of the deepest drill hole completed to date. Data gathered to date do not place, nor suggest, any limitations as to ultimate depth of the deposit. All indications are that the higher grades encountered at depth ($>0.3\%$ MoS₂) will continue below the 500m level, and that the potential for substantially expanding higher grade reserves is excellent.

To the North, a 50m wide barren dike of Quartz Eye Diorite near the northern contact of the Quartz Monzonite Porphyry has traditionally been regarded as the northern boundary of the deposit, despite results from one drill hole from the north side of the dike suggesting the presence of good grade material to the north of the dike on at least the 1200m level to the north of the dike (ddh 79-16, 0.176% MoS₂ over 61.3m).

In addition, the dike splays at depth and separates into two smaller arms, but the paucity of information therefrom has necessarily discounted the inclusion of mineralized Quartz Monzonite Porphyry enclaves, although potentially substantial, into reserves (see grade contour level plans Appendix A).

The area to the east of the deposit has received little attention beyond the initial preliminary work carried by Boswell River Mines during 1968. In particular, although some shallow drilling and surface work data are available, information from deeper elevations is scarce.

Red Mountain is characterized by two surface geochemical Mo anomalies one of which directly overlies the deposit (western subanomaly, Figure 5, pp11). It has been suggested in an earlier section of this report that the eastern subanomaly, being of similar size and tenor as that to the west, may well represent the surface expression of as yet untested subsurface mineralization.

In addition, considering that the deposit is progressively downdropped eastward by at least two faults with 300m-500m vertical displacements, any possible extensions to the east would be expected to occupy greater depths than those observed to the west, hence well below the reaches of any exploration carried out to date. Surface topography also exhibits a drop in elevation of approximately 800m-1000m eastward from the deposit to the eastern

subanomaly, possibly reflecting the cumulative aggregate displacement of the two faults.

The above can support speculation as to the potential of outlining an easterly extension to the deposit at depths of some 600m-1000m below its current position. Implications to considerable expansion in reserves are self-evident.

It is significant to note that while additional material from depth and from the north could contribute good grade material to expand, and improve, current reserves by some 20%-30%, it can be speculated that an easterly extension could potentially double existing reserves. The data collected to date places no limitations as to extensions to the deposit.

PRODUCTION CONSIDERATIONS AND FUTURE DEVELOPMENT

Production Considerations

In conjunction with the ore reserve studies, a preliminary assessment was made of miscellaneous production related considerations, with emphasis on mining method and requisite infrastructure.

Considering that the bulk of the higher grade reserves (current and potential) are at a depth well below surface, and also considering the rough terrain, altitude and climate, traditional open pitting or shaft sinking were ruled out as effective options.

Production by underground exploitation via a tunnel (decline or adit) designed to enter the reserves at as low an elevation as possible was considered to be the only suitable method. Material above such a tunnel could be bulk mined by caving and tonnages below it could be accessed by decline or internal shaft, or mined by an internal open-pit. In addition to affording some selective mining, advantages of this scheme would also include omission of near-surface lower grade material (hence faster capital payback) and oxidized ore.

After a review of potential collar locations, the Boswell River valley at an elevation of 1060m above sea level, albeit some 3km away, was considered to be the most suitable location. A 3200m long exploration adit from this location could enter the deposit within the top of the better grade material at approximately the 1070m level, a suitable elevation for gaining access to deeper levels by means of a decline or internal shaft. While such an adit would initially be utilized for exploration and development purposes, it could subsequently be slashed to production size.

As far as other possible underground access layouts are concerned, a shorter adit from the east was ruled out due to anticipated poor ground conditions, and various configurations of shorter declines were also ruled out since they would all enter the deposit at too high an elevation to be of any benefit to future production.

Possible Future Development Program

Following completion of the 1982 work, it was apparent that additional exploration from surface would not materially contribute to gaining any better an understanding of the deposit than that already established from the information on hand. It was decided that any future work would be best carried out from underground, and accordingly a preliminary development work program was outlined to provide a planning framework.

The aim of the contemplated development program would ultimately be to prove up a viable block of underground reserves of confirmed recoverable grade and known ground conditions, by means of tunnelling, controlled drilling and testing of a bulk sample. As a first order of magnitude estimate, this program would cost approximately \$15MM, and would require some three and a half years to complete. It would entail the excavation of a 3200m long exploration adit collared in the Boswell River Valley, to enter the reserves at the 1100m level; followed by the excavation of 1000m of in-level drifting and 1800m of cross-cuts to provide drill stations and material for the bulk sample. Approximately 35,000m of controlled drilling would then be carried out to detail the deposit at 50m-100m intervals in 19 cross-sections.

Ground condition studies would accompany this work as would investigation of anticipated extensions to the deposit.

The 10,000tonne bulk sample would be tested to establish grade correlations and recoveries, and tonnage of same could be reduced on-site to pilot mill quantity, using a portable crusher, in the event the facilities of a local mill cannot be secured.

Contemplated Activity	Year 1	Year 2	Year 3	Year 4
<u>Environmental Impact Review & Permits</u>				
Apprx 90days. \$0.5MM	■			
<u>Adit Excavation</u>				
3,200m. 550days. \$6.5MM	■	■		
<u>Drifting In-Level</u>				
1,000m. 120days. \$1.3MM		■		
<u>Cross-Cuts & Drill Bays</u>				
1,800m. 130days. 300m on 6 x-t'ns. \$1.8MM			■	
<u>Diamond Drilling</u>				
35,000m. 180days. 57ddh/19 x-t'ns. \$1.8MM			■	
<u>Bulk Sample Transport & Testing</u>				
10,000tonnes. 80days. \$1.0MM				■
<u>Supervision, Technical Support & Logistics</u>				
Staff, Equip & Infrastructure. \$2.6MM	■	■	■	■

While presently only a planning guide addressing reserves as they are presently known, the above configuration anticipates production, and can accommodate same once underground workings have been slashed to production size. Needless to say, detailed engineering would be required to more precisely establish costs and schedule, as would also be detailed consideration as to anticipated mining method, whether tracked or trackless.

In the event that significant additional tonnages are outlined as an easterly extension to the deposit, the above configuration will undoubtedly have to be revised to reconsider entry into the reserves from the east, rather than the north. Advantages of the revised scheme would include maintenance of a larger proportion of underground drives in ore and the availability of multiple headings for an accelerated schedule, and same may well counterbalance disadvantages of comparatively more demanding anticipated ground conditions.

CONCLUDING REMARKS

Geology, mineralogy, metallurgy and known reserves of the Red Mountain Molybdenum deposit have been presented in the preceding sections. It suffices to say that, with size and tenor comparable to other Mo producers, with relatively simple metallurgy and manageable accessibility, Red Mountain definitely has the potential of becoming a viable underground producer of Molybdenite.

Barring any unforeseen excessive mining dilution, the current reserves of 187,000,000 tonnes grading 0.167% MoS₂ (at 0.10% MoS₂ cut-off) translate into some 340,000 tonnes of concentrate containing approximately 170,000 tonnes of Mo metal and 48 tonnes of silver, representing an aggregate in situ value of some \$800,000,000. Considering the naturally high anticipated concentration ratios (1:400 to 1:550), it is conceivable that concentrates produced may also recover other precious metals of otherwise negligible tenor in the ore. The data on hand neither supports nor negates same.

The above reserves are demonstrably open at depth, below the reaches of exploration carried out to date, and to the north. They are also arguably open to the east, data wherefrom is scarce and available only for shallow depths well above the locus of any potential extensions. While additional material from depth and from the north could contribute good grade material to expand, and improve, current reserves by some 20%-30%, it can be speculated that an easterly extension could potentially double existing reserves. The data collected to date places no limitations as to the suggested extensions to the deposit.

The significance of additional work to probe an easterly extension is self-evident. This work is best carried out prior to underground activities since any encouragement therefrom could dictate major reconfiguration of underground layouts presently envisaged.

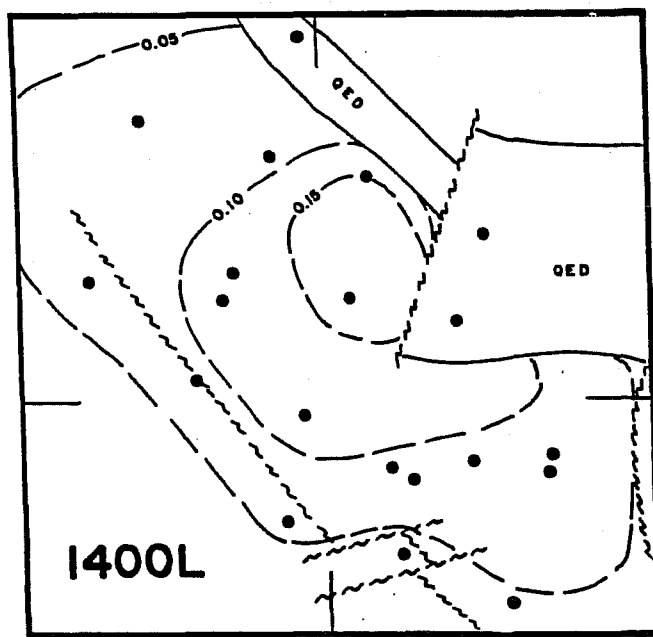
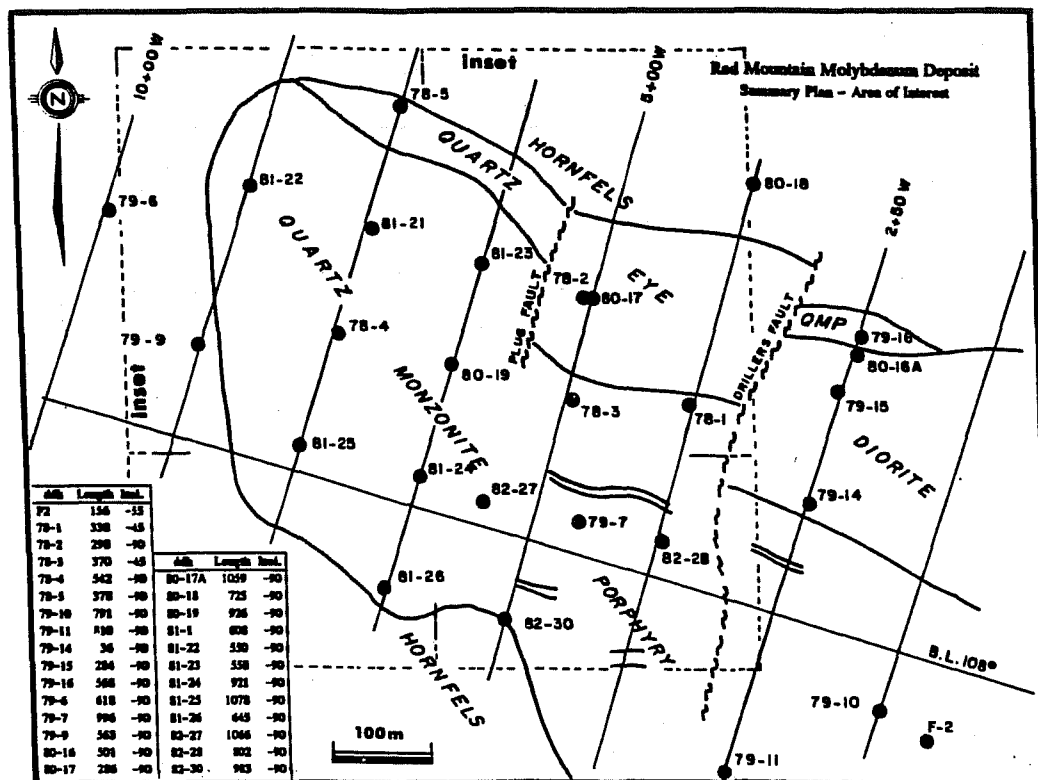
Despite all of above favorable features, there has been no work at the property following the 1982 phase of deep drilling, primarily due to discouraging Mo markets, further exacerbated by overall depressed levels of exploration activity reflecting a generally poor economic climate.

While a discussion of Mo and its markets is beyond the scope of this report, it suffices to say that following an insurgence in the late 1970's, Mo markets have continued to be weak as a result of continuing oversupply. As a strong carbiding agent, however, Mo has very few potential substitutes in its major application as an alloying element in steels, cast irons and non-ferrous metals, and overall demand has been predictably and steadily growing.

In addition to its many superior physical properties, Mo is also capable of forming compounds with most inorganic as well as organic liquids, and its overall versatility continues to focus a good deal of research toward the development of new materials benefiting from its alloying abilities. The work toward identification of new uses continues to be of active interest to industry assuring longevity for the metal's future.

APPENDIX A

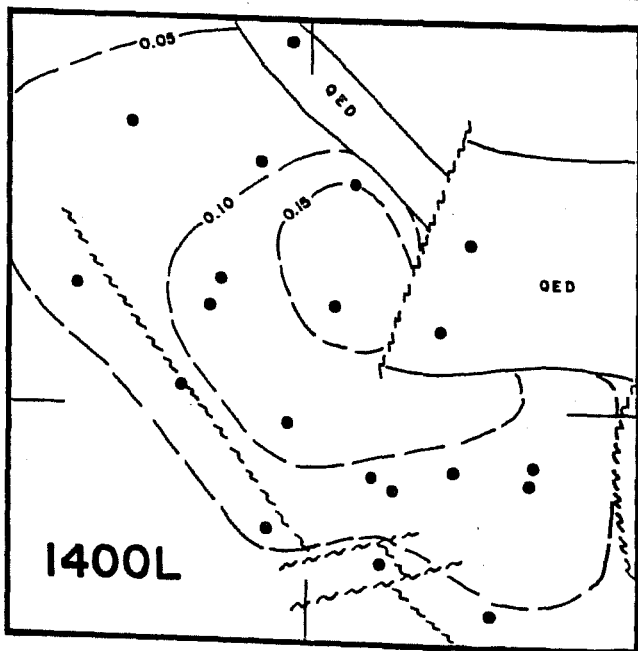
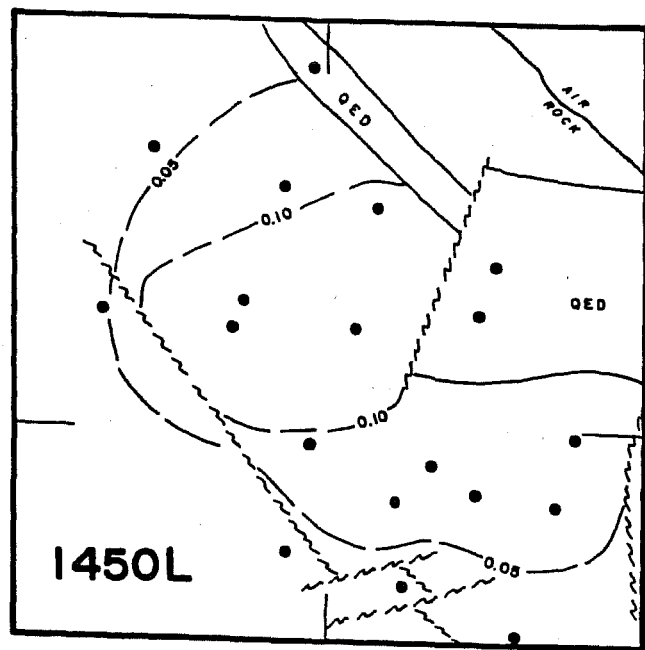
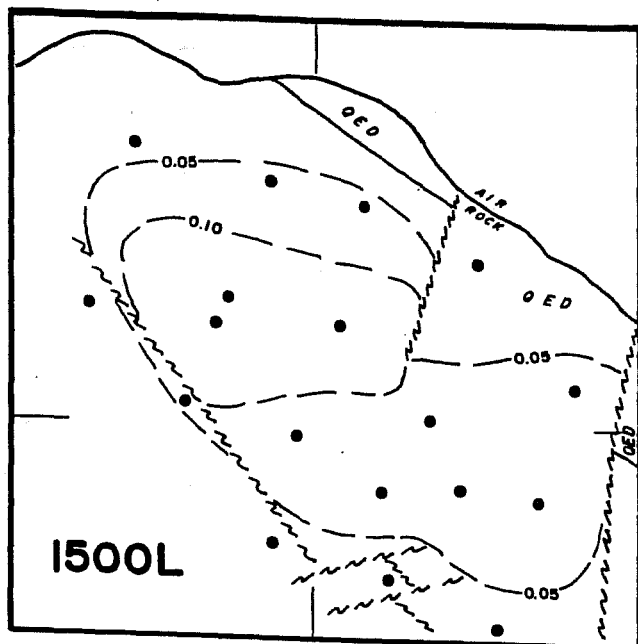
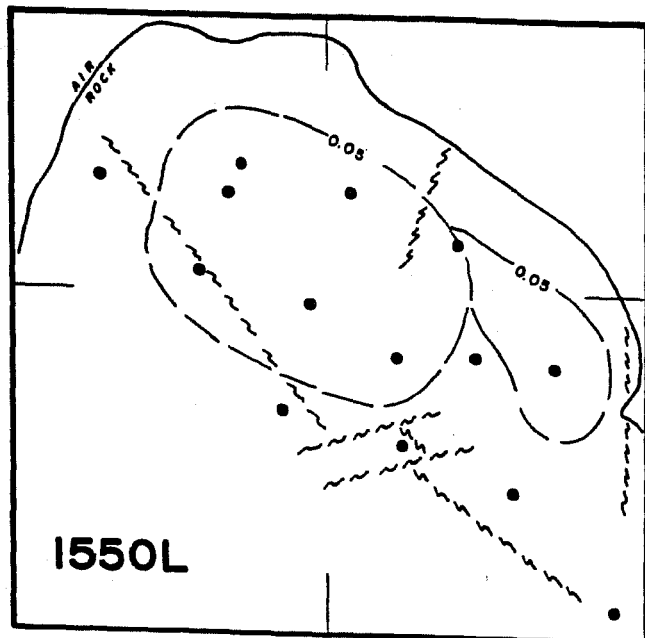
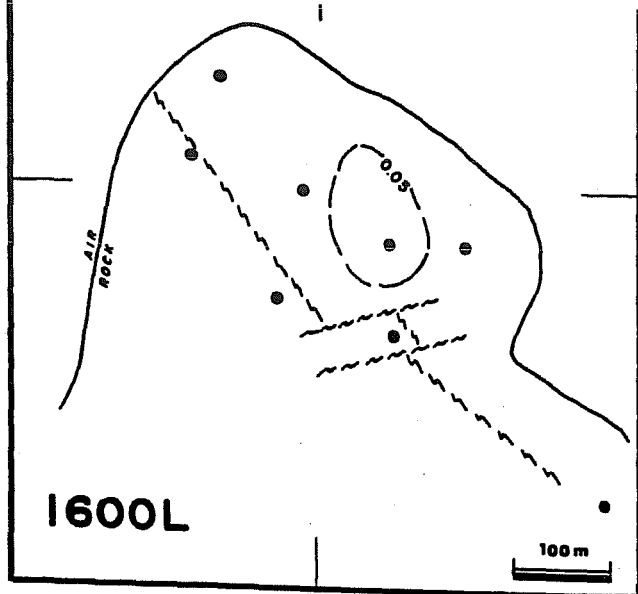
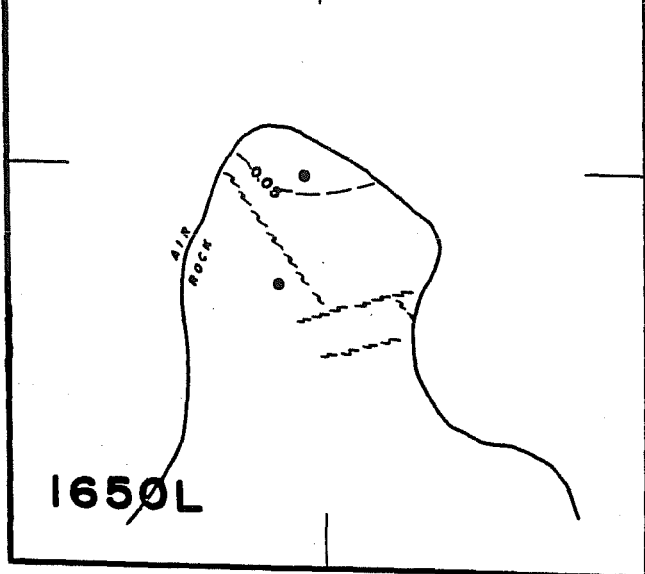
Summary Grade Contour Level Plans



- 1400L** 1400m Above Sea Level Elevation
- QED** Quartz Eye Diorite
- Fault
- %MoS2 Grade Contour

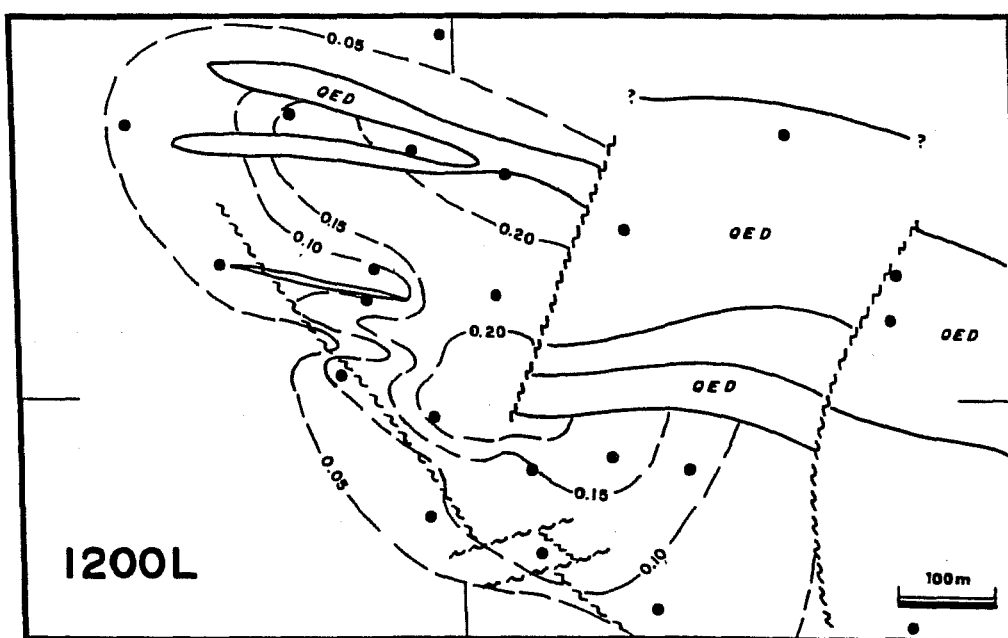
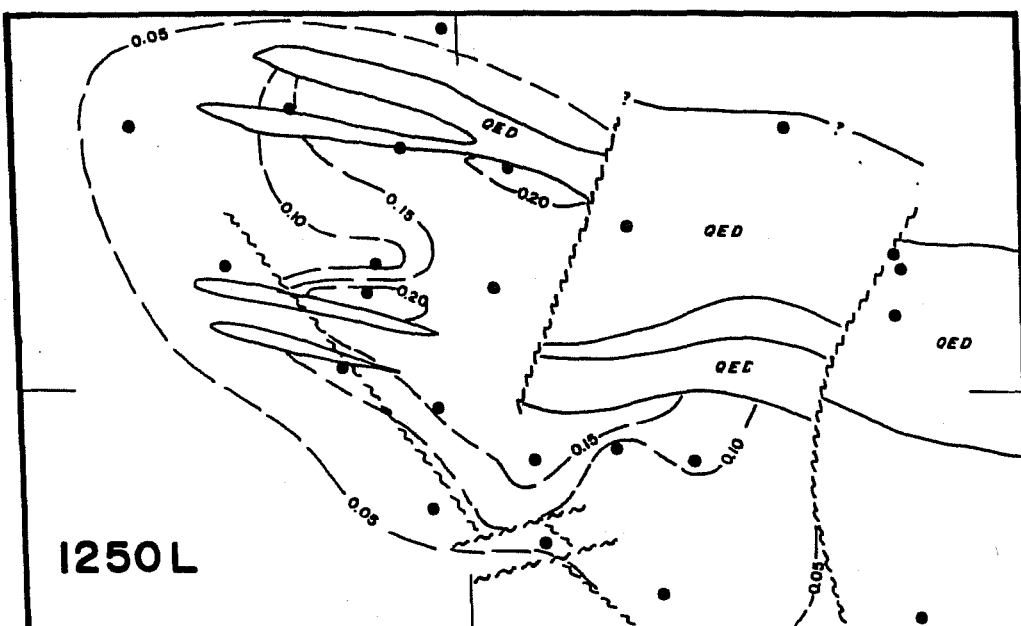
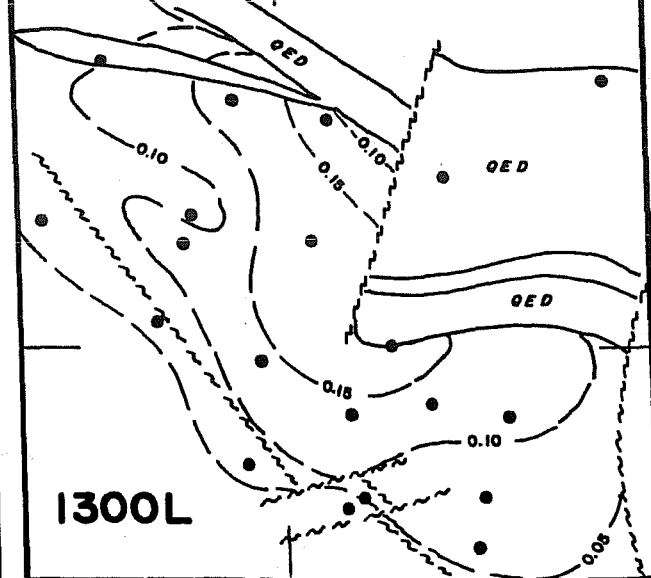
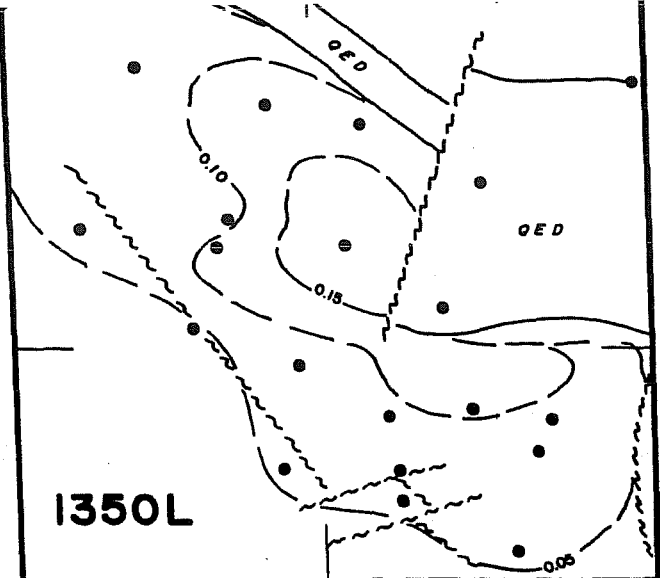
Red Mountain Molybdenum Deposit - Grade Contour Level Plans

Key Sketch



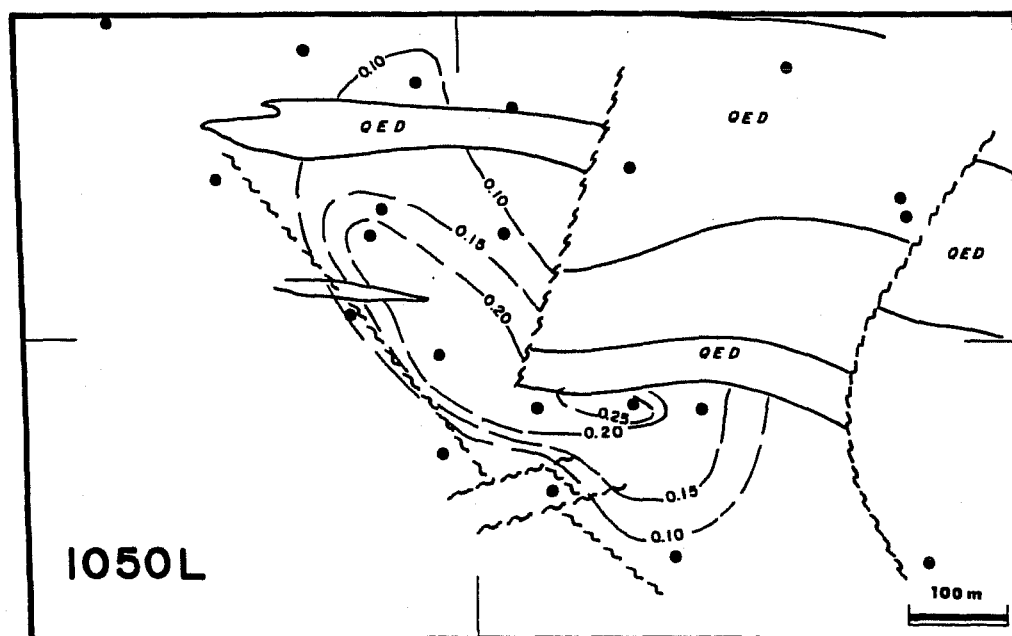
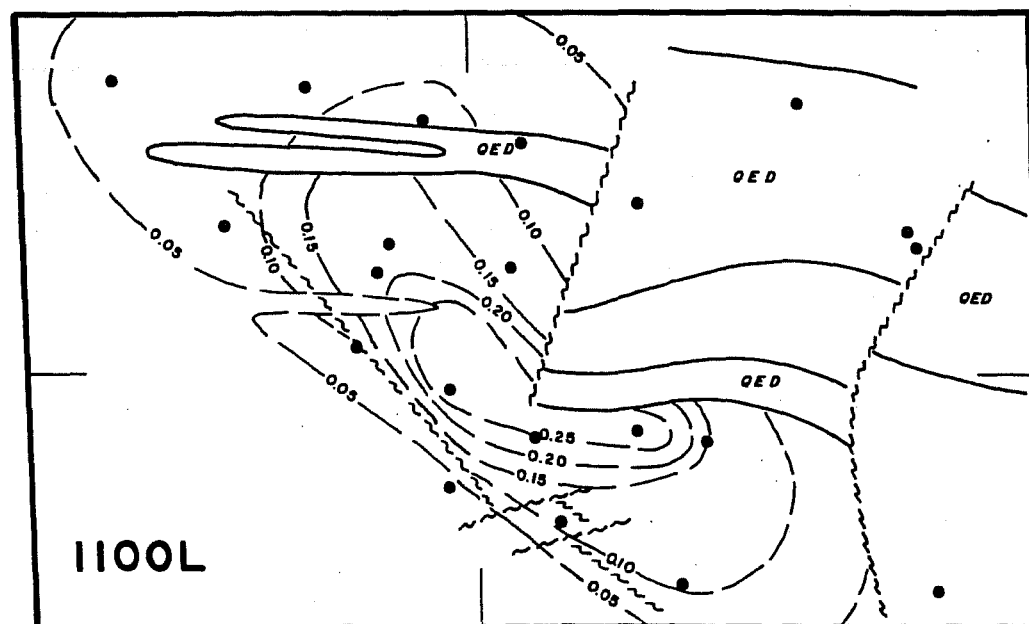
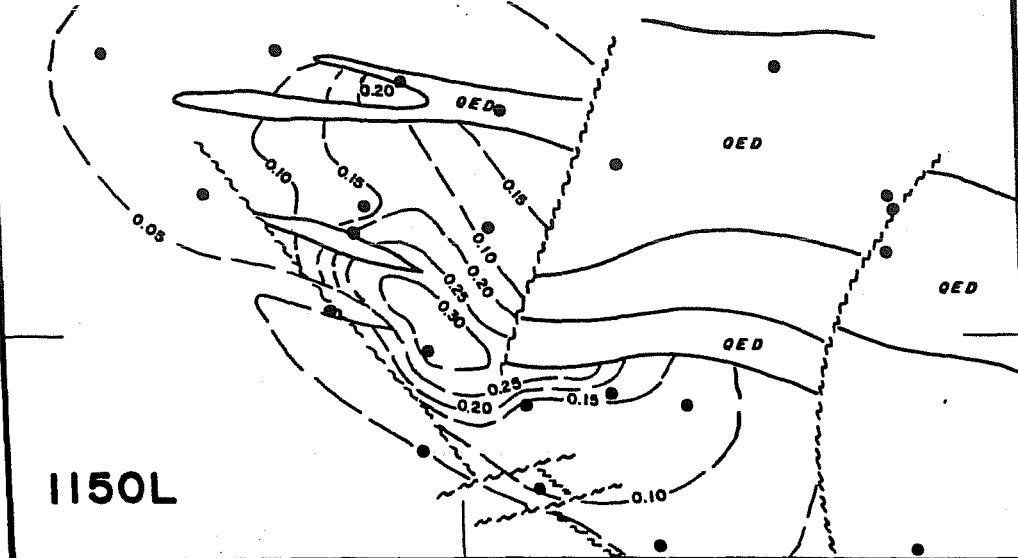
Red Mountain Molybdenum Deposit - Grade Contour Level Plans

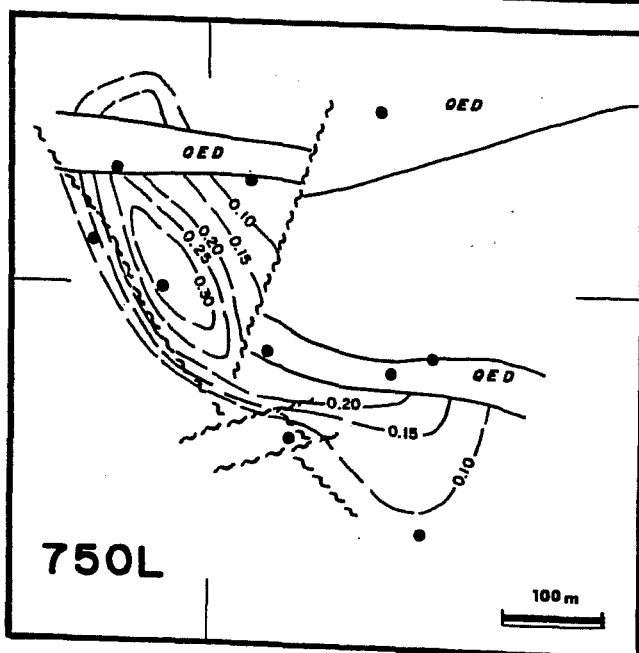
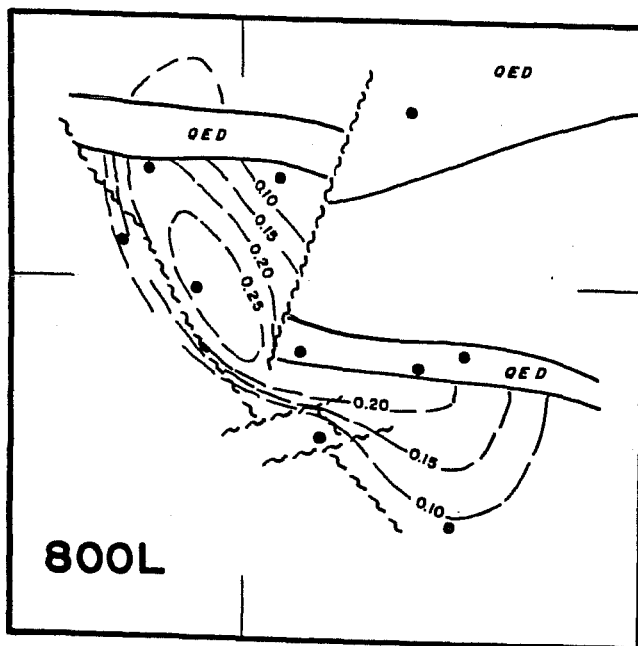
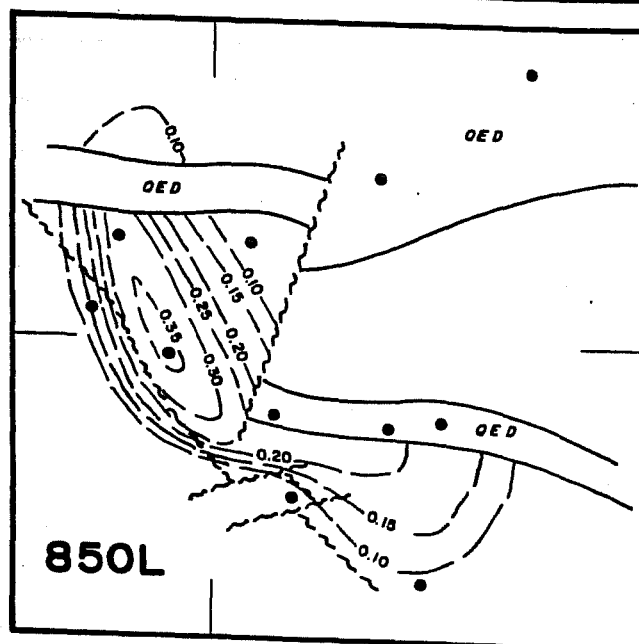
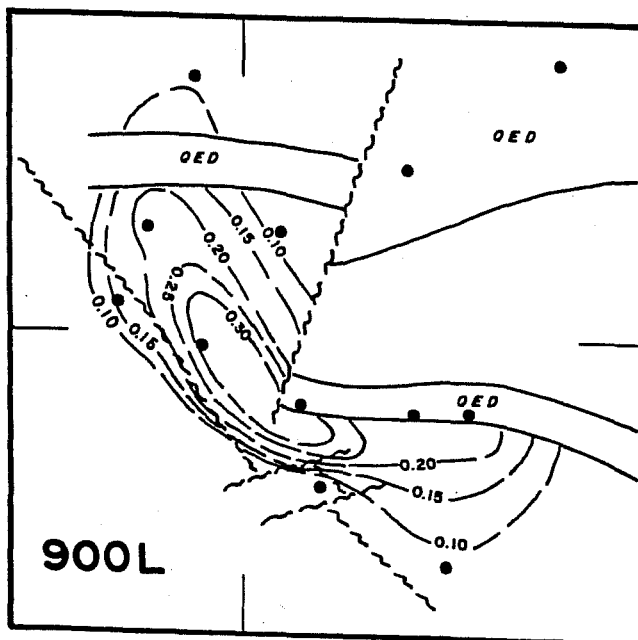
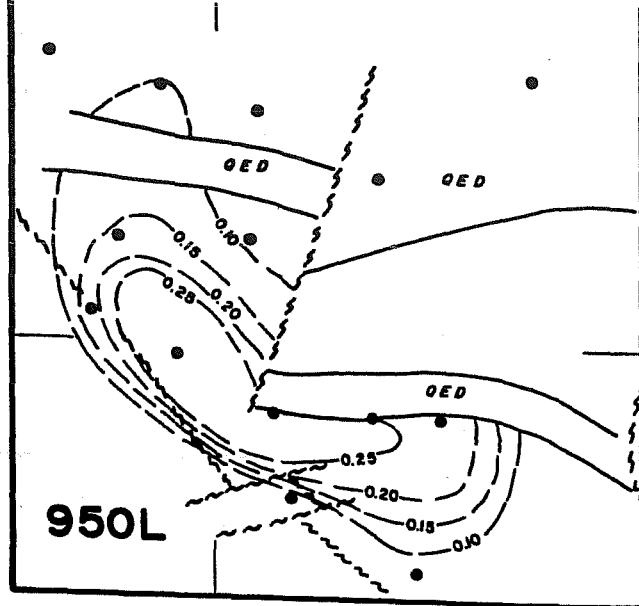
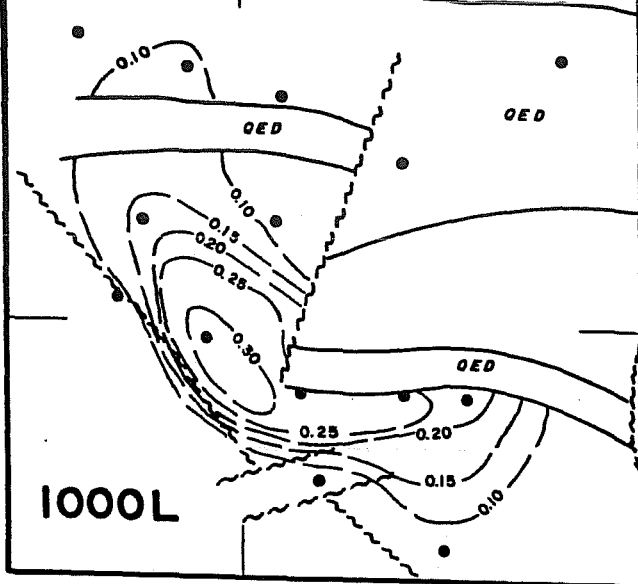
1650L to 1400L (meters above sea level)



Red Mountain Molybdenum Deposit - Grade Contour Level Plans

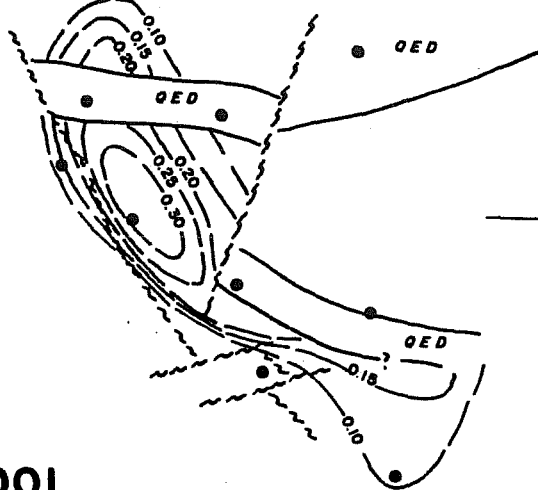
1350L to 1200L (meters above sea level)



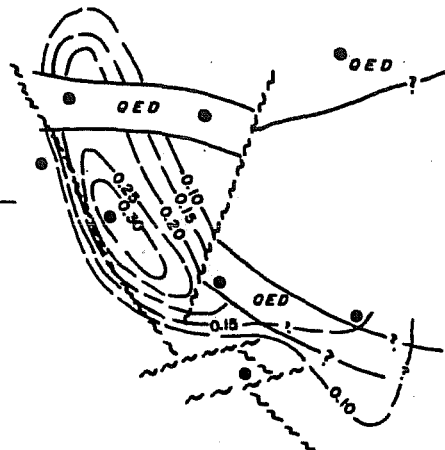


Red Mountain Molybdenum Deposit - Grade Contour Level Plans

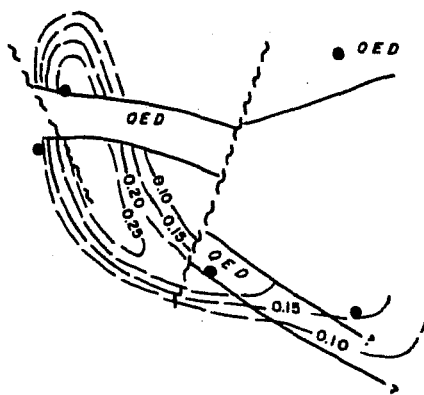
1000L to 750L (meters above sea level)



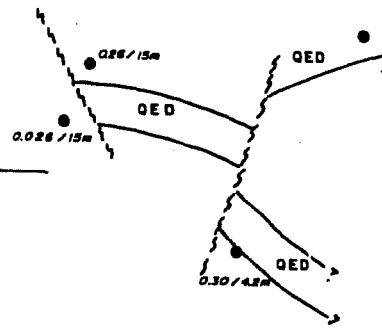
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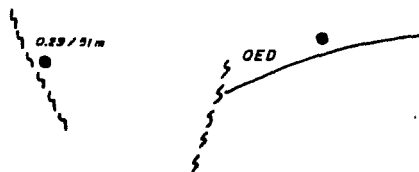
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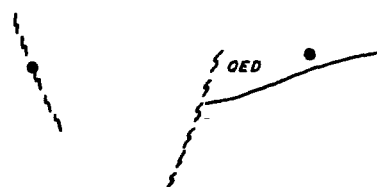
600L



550L



500L

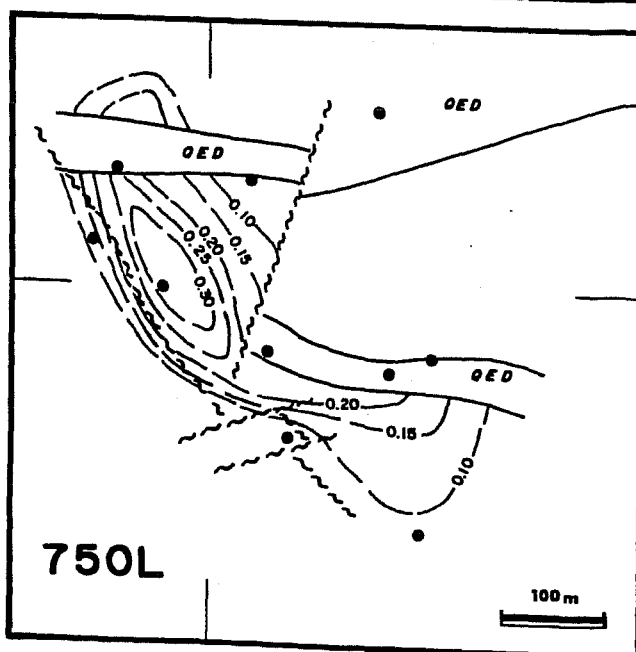
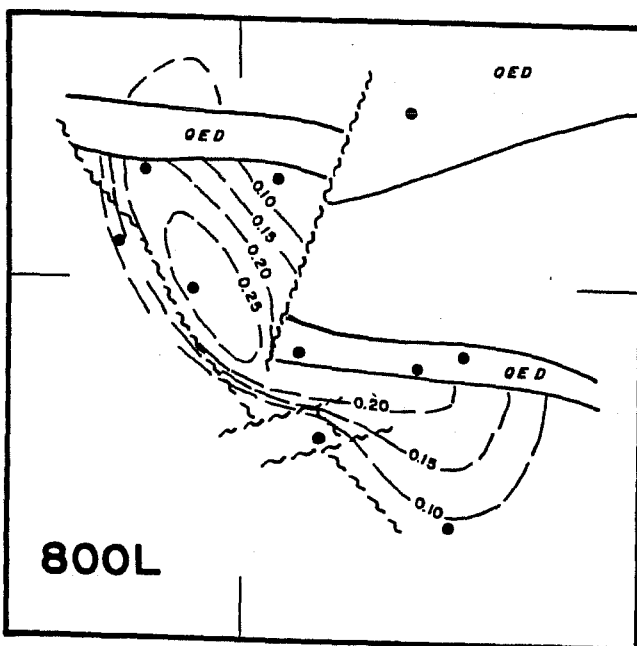
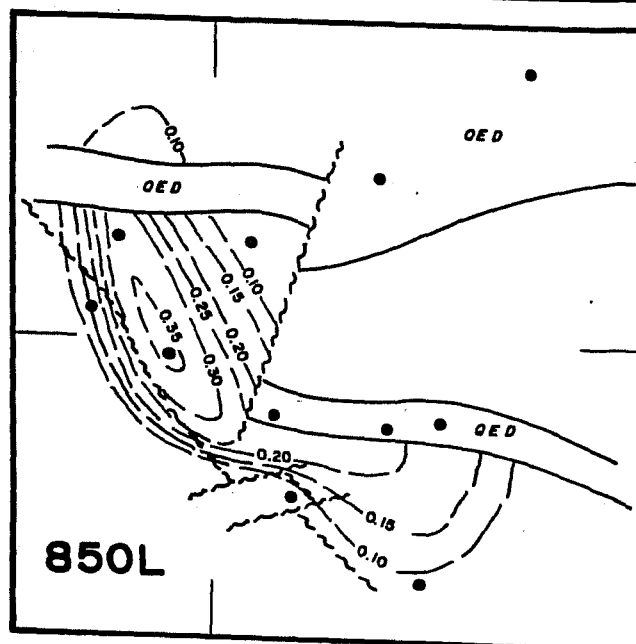
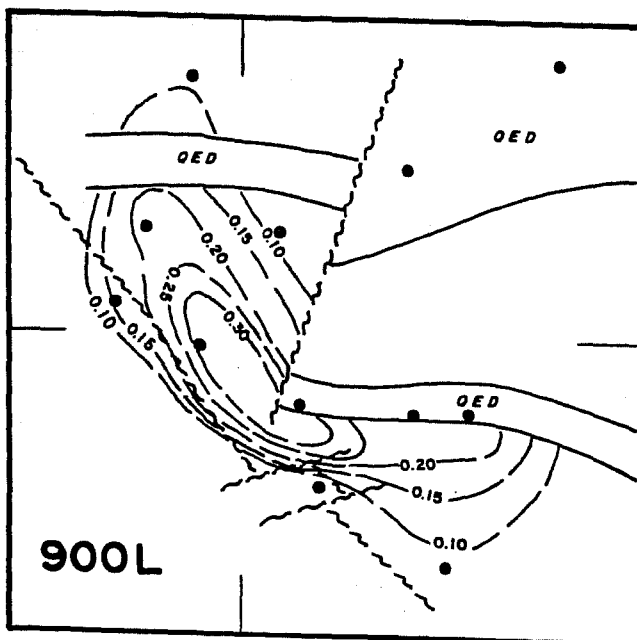
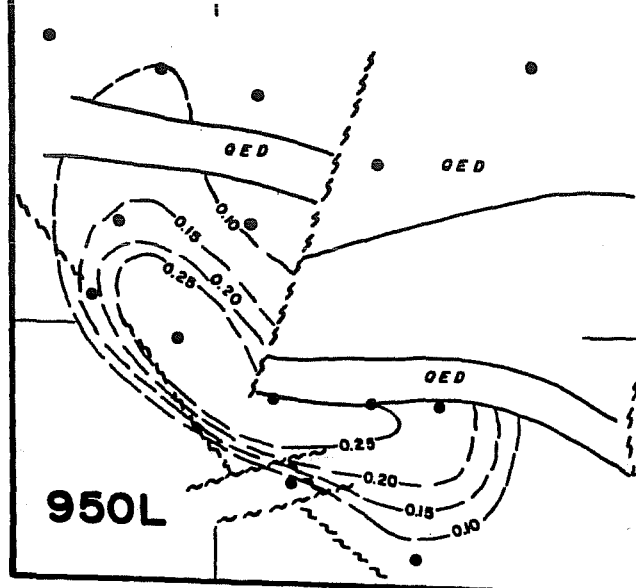
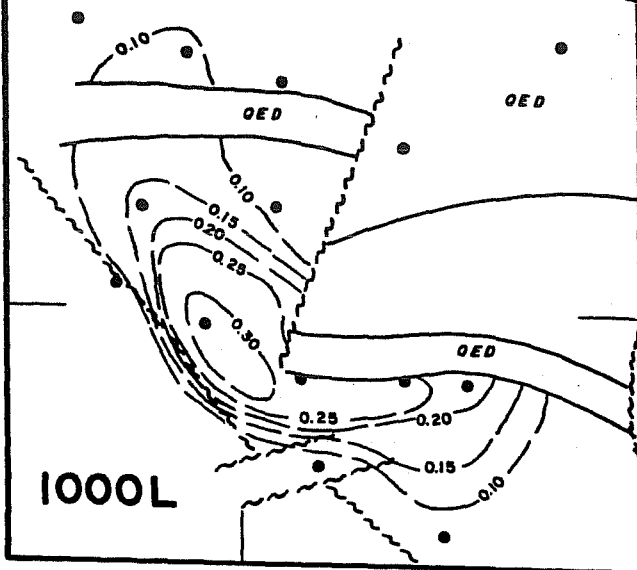


450L

100 m

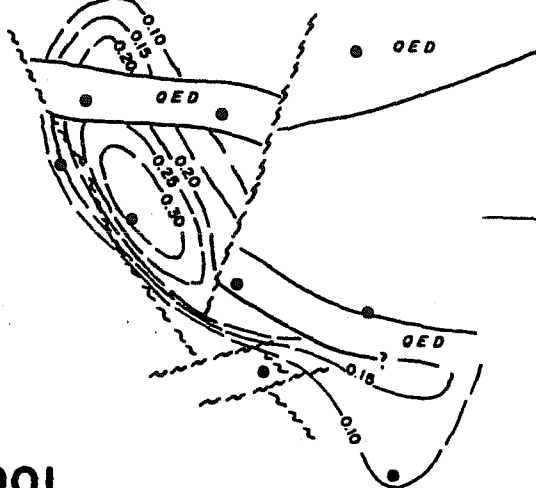
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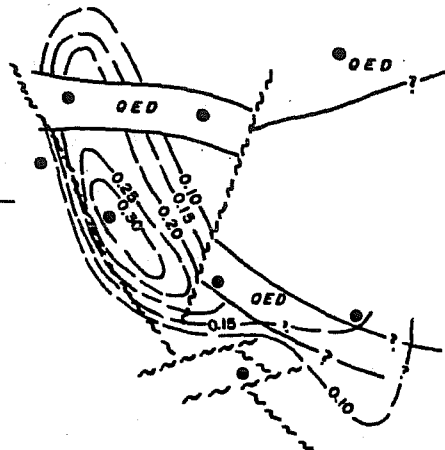


Red Mountain Molybdenum Deposit - Grade Contour Level Plans

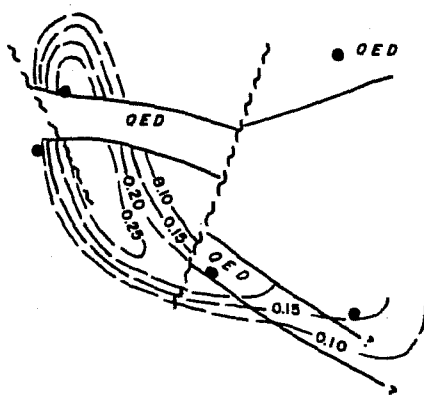
1000L to 750L (meters above sea level)



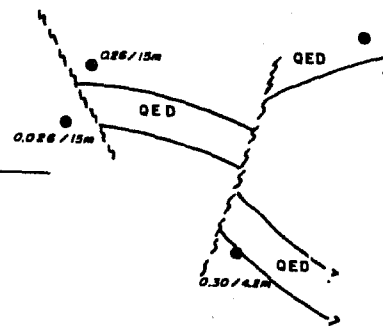
700L



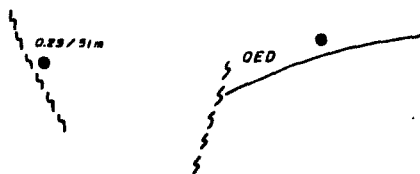
650L



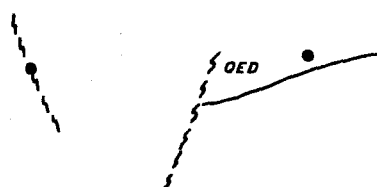
600L



550L



500L



450L

100 m

APPENDIX B

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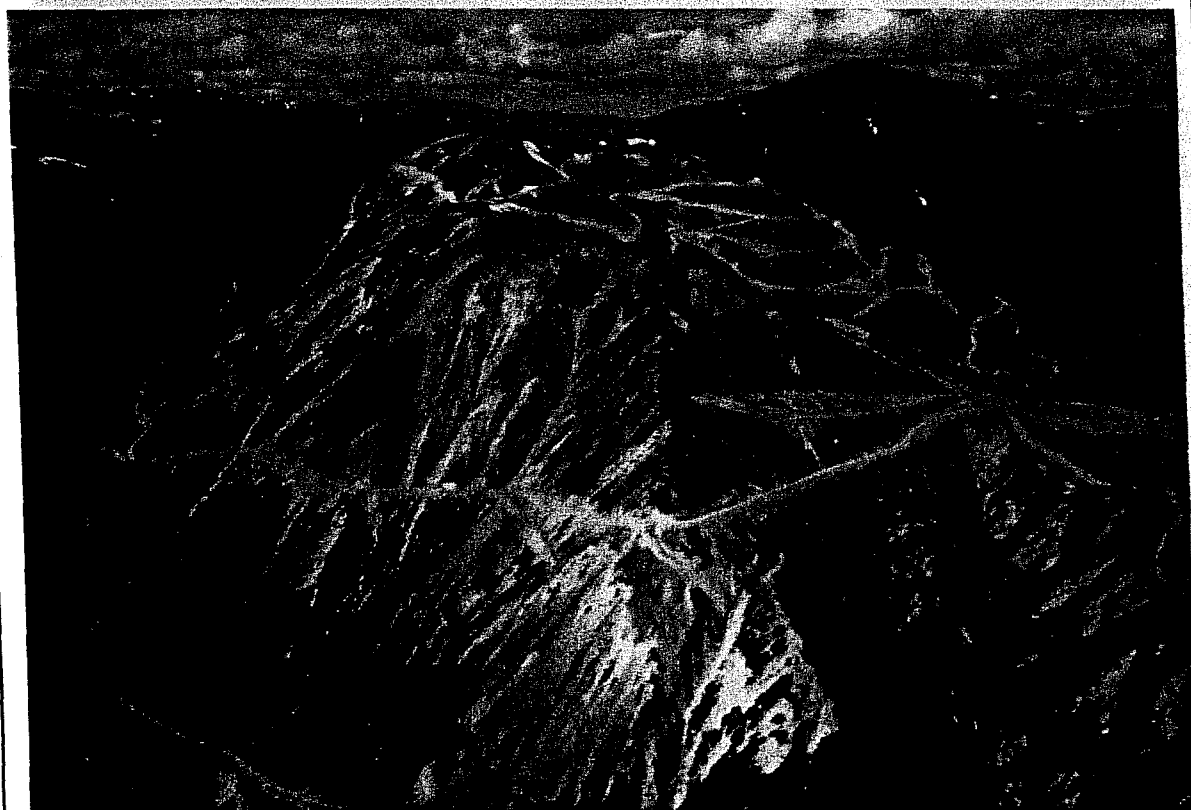
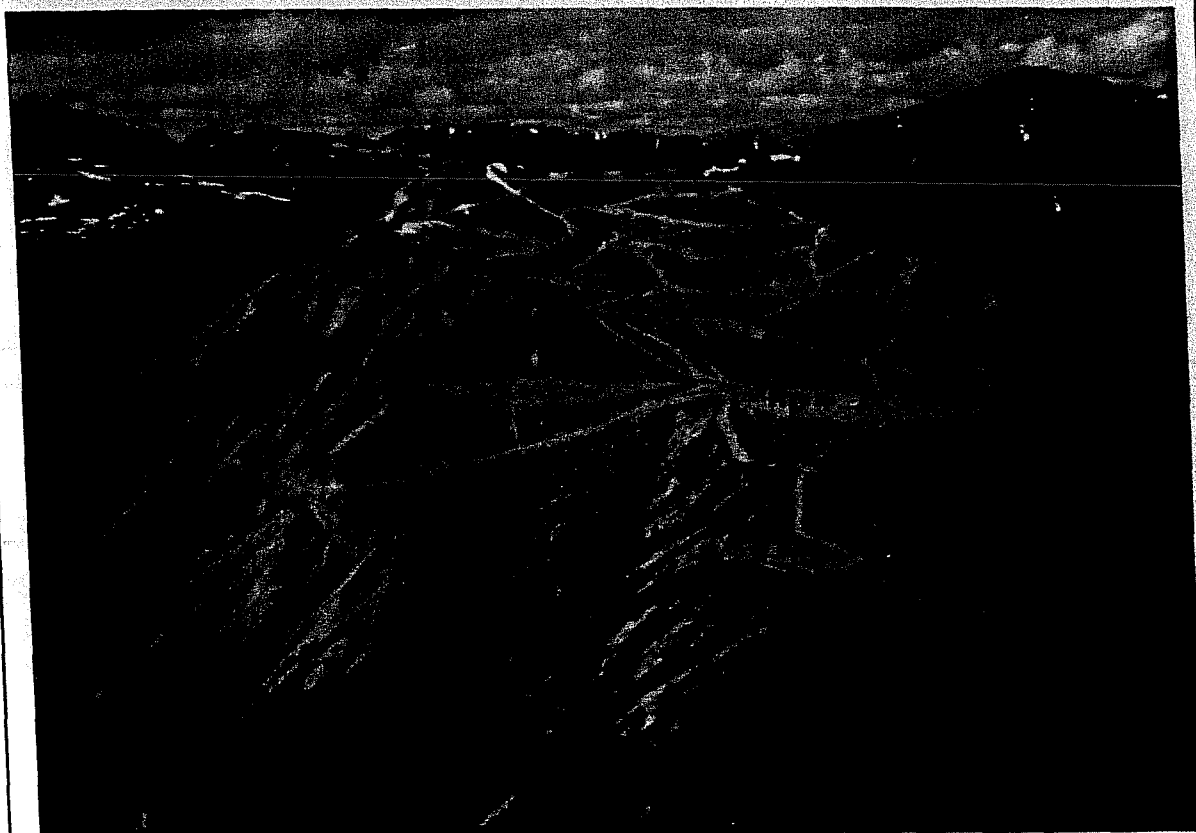
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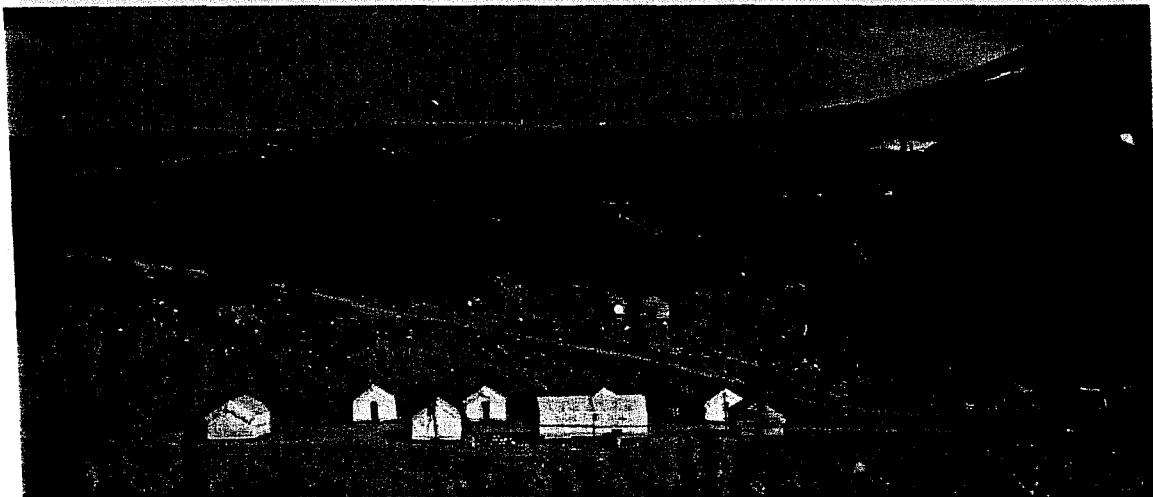
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APPENDIX C

MISCELLANEOUS PHOTOPLATES



Red Mountain. Looking westerly (above) and northwesterly (below). Showing bulldozed drill-access trails, oxidized gossan on west slope and heli-pad (hp).



Red Mountain. Looking northeasterly (top) from heli-pad toward camp, and looking southerly (middle) from valley below camp toward heli-pad. Showing 1982 camp and core-shacks (bottom).