

840509

May 13, 1970.

Toluma Mining and Development Co. Ltd. (N.P.L.),  
201 - 535 Howe Street,  
Vancouver 1, B.C.

Attention: Mr. C. W. Marshall,  
Secretary

Dear Mr. Marshall:

Re: Toluma Mining and Development Co. Ltd. (N.P.L.),  
Copper Property - 7 Miles North of Upper Nicola,  
Highland Valley, B.C.

Thank you for the above property submission and your consideration of Gulf Minerals Company in this regard.

We have now had time to review the data in detail. Unfortunately, the property does not present just the exploration opportunity for which we have been searching.

We do wish you success in your continuing effort to explore and develop your property.

We understand that you have made this submission voluntarily and that you acknowledge that Gulf has not requested or in any other way induced you to disclose the information contained in your report. It is also agreed that Gulf is under no obligation to make any payment of any kind whatsoever to you, Toluma Mining and Development Co. Ltd. (N.P.L.), or any third party for receiving, considering and/or using the information you have disclosed. Nor does Gulf assume any limitation on how it may decide to use the information you have disclosed.

Very truly yours,

Original Signed  
By F. C. Perry

N. M. Ediger

FCP  
/gm

FILE COPY	
Exploration File	<input checked="" type="checkbox"/>
General File	<input type="checkbox"/>
Lease File	<input type="checkbox"/>
S & M Contract File	<input type="checkbox"/>
A/C Payable File	<input type="checkbox"/>
Catalogue File	<input type="checkbox"/>
Library	<input type="checkbox"/>
File No. <u>NTS 92-I</u>	

**TOLUMA MINING AND DEVELOPMENT CO. LTD. (N.P.L.)**

201 - 535 HOWE STREET  
VANCOUVER 1, B.C.

May 6, 1970

Gulf Minerals Co.  
Ste. 1300 - 10 King St., E.  
Toronto 1, Ontario

Gentlemen:

We bring to your attention a copper-moly property on which a moderate expenditure would complete engineering recommendations with the likely possibility of proving up a profitable commercial ore body.

The tight money market leads us to seek a developer on equitable terms rather than attempting to raise the money ourselves.

The attached summary can be supplemented with more detailed reports and inspection of the property at the convenience of your engineers.

Yours sincerely,

TOLUMA MINING AND DEVELOPMENT  
CO. LTD. (N.P.L.)



Charles W. Marshall,  
Secretary

CWM/mjc  
Enclosure

TOLUMA MINING & DEVELOPMENT CO. LTD. (N.P.L.)

The Toluma Mining property comprising claims totalling over 2,000 acres is located about seven miles north of Upper Nicola in a geological formation known as the Guichon Batholith, comparable to Craigmont, at an elevation of around 4,000 feet.

CONDENSED HISTORY

1929 - Discovery claims staked and prospecting begun. Shaft on Crown-Grant Turlite claim sunk to a depth of fifty feet.

1947 - Property acquired by Guichon Mines Ltd. Drift from shaft at fifty foot level extended 105 feet and three carloads of ore shipped by rail to the Tacoma Smelter which averaged 5.16% copper.

Electrical survey by D. L. Hings pinpointed some 40 anomalies.

1949 - Shaft sunk to 200 feet intersecting 3 vein structures and drifting done at 100 and 200 foot levels.

Survey of shaft development reported on at length in B. C. Department of Mines Annual Report 1949.

Stripping and trenching undertaken on 40 anomalous zones of quartz and quartz feldspar carrying copper mineralization.

1951-55 - Exploration continued intermittently and shaft sunk to depth of 465 feet.

1956 - Carload of ore shipped to Tacoma smelter averaging 6.91% copper and 1.74 o.p.t. silver.

Property optioned to Western Copperado Mining Co. (Quebec based) who diamond drilled from surface numerous short holes on out-crops.

1958 - Electro-magnetic survey of entire property by Shields Mining Surveys resulting in a number of recommendations which were not implemented due to the decease of the operator of Western Copperado. All records including engineering reports were turned over to the Official Administrator of Quebec Province.

1959 - Property reverted to Guichon Mines who entered into an agreement with A. M. Arnold.

1960 - A. M. Arnold conveyed property to Toluma Mining & Development Co. Ltd. who resumed extensive drilling, stripping and trenching on the North-West showings. On completion of the agreed upon development work Toluma secured clear title to the property and subsequently conveyed 750,000 escrow shares to Guichon Mines Ltd. in full settlement.

1961 - 65 - Toluma undertook an extensive exploration program under the direction of W. B. Montgomery, P. Eng. Mr. Montgomery went to Britannia Mines on leaving Toluma at the end of 1964 and was involved in the discovery of a larger copper ore-body there than that on which the mine has been operating for over forty years.

Mr. Montgomery was responsible for uncovering the wide-spread indications of molybdenite on the property, the existence of which had hitherto been ignored. Soil sampling for both MoS<sub>2</sub> and CU revealed combined values of commercial ore. As an indication of some of the mismanagement in past operations, thousands of feet of diamond drill core which had been carefully logged were dumped in a pile. Examination of samples of split core revealed the same molybdenite mineralization from

many sections of the property but the exact locations were unidentifiable.

The late Dr. A. C. Skerl acted as consultant and was able to confirm Mr. Montgomery's findings as will be noted from the following excerpts from his reports:

"14. Dr. A. C. Skerl, Consulting Mining Geologist, September, 1961 -

"Near the southwest extremity of the Central Nicola batholith, in a zone of foliated quartz diorite, two large, low grade, zones of copper mineralization have been partially explored. These are at or near the contact with Nicola andesitic rocks. These conditions are favorable for the occurrence of large copper deposits, and the possibilities of finding same on the Copperado property are considered good.

Although the copper mineralization so far uncovered is in the foliated quartz diorite, the older Nicola rocks cannot be ruled out as a host for copper mineralization. In support of this hypothesis, the Craigmont orebody, thirteen miles to the west is in Nicola limestone near the contact with the Nelson igneous rocks of the Guichon Creek batholith.

Local conditions are such that, should a large copper deposit be developed on the Copperado property, cheap mining, concentrating and smelting costs are indicated.

If a major copper deposit is not developed on the Copperado property it may be profitable to mine selectively some of the high grade material and arrange to have it concentrated at Craigmont, or if a smelter is constructed in the area, sold directly to the smelter where it would receive premium prices because of the high silica content."

15. Dr. A. C. Skerl, Consulting Mining Geologist, April 1963 -

"Although the mineralization is often richer in association with quartz stringers, it is by no means confined to them.

The mineralization is now known over a length of 200 feet and intervals over a width of 200 feet. Its lower limit is not known since the vertical hole No. 16 averaged 0.27% Cu for its full depth of 200 feet.

The indicated average grade is not commercial; although the copper ranges up to 0.53% over 24 feet and the molybdenum up to 0.16% over similar widths, the average grade is probably about 0.20% Cu, 0.07% MoS<sub>2</sub> and 0.50 oz Ag per ton, or a gross value of nearly \$4.00 per ton.

When it is considered that this material was found in a limited area at one corner of the known copper anomaly that extends for 2500 feet, it offers great encouragement to extend the search for an area of better grade. Thus an average of 0.50% Cu, 0.20% MoS<sub>2</sub> and 1.5 oz. Ag per ton would have a gross value of over \$10.00 per ton, equivalent to 1.7% Cu. This would be an economic grade for widths of 20 feet or more."

16. Dr. A. C. Skerl, Consulting Mining Geologist, November 1964 -

"The new cut shows that for a width of 70 feet from the granite contact there is a series of quartz stringers in zones up to 2 feet wide in the so-called granodiorite containing molybdenite and chalcopyrite. The zones are shears, some with fault gouge, that strike north parallel to the granite contact and are vertical. The mineralization is in lenses and the largest exposed is 30 feet long and 18 inches wide.

These zones were estimated to average 1/2% MoS<sub>2</sub> and 1-1/2% Cu for a total width of 5 feet out of the 70 feet.

Over a width of 40 feet an average grade of 0.2% Cu and 0.05% MoS<sub>2</sub> is indicated by the visual estimates. Although some leaching is still evident, in spite of the freshness of the rock, it is doubtful if the average grade could be more than twice this."

It is significant that Mr. Montgomery's faith in the property was such that he continued his work there for nearly a year after the Company exhausted its treasury.

1966-67 - Toluma entered into a development agreement with Great Slave Mines Ltd. under which exploration of the southerly blocks of claims was undertaken under the direction of Mr. N. C. Lennard, P. Geol., P. Eng., which resulted in four separate recommendations to his principals:

1. Sinking of two deep drill holes to below a depth of 1000 feet;
2. Draining of the shaft and further exploration of the shaft area to determine tonnage of available ore. (See R. E. Parkes Report, Nov. 5, 1956);
3. Exploration of the hitherto untouched South Anomaly.
4. Percussion drilling of the Montgomery-Skerl findings in the South East area.

In the early Spring of 1967 Great Slave Mines carried out only recommendation number four and carried out the recommended drilling on the S. E. anomaly. This was strictly a "one-shot" effort by Great Slave and consisted of a number of short vertical holes, notwithstanding the fact that the three diamond drill holes previously undertaken were all driven

at an angle as the indicated vein structure was vertical. The results were further minimized by a late Spring snowfall of some 24" of wet snow so six weeks elapsed from the time of completion of the drilling before the first assays were available. Naturally no adjustments in the drilling program were possible. It should be pointed out that the abortive percussion drilling program does not discount the existence of the values estimated by Dr. Skerl in his report of April 1963 of values of up to 0.53% CU and 0.16% MoS<sub>2</sub>.

One other factor which led to the termination of the agreement with Great Slave Mines was that their President took over control of Yorkshire Securities at that precise time and the Toluma enterprise faded into being one of minor importance.

The amount of high grade ore remaining in the shaft is undetermined but in transferring the property, Guichon Mines tabulated 50,000 tons of known high grade ore (much below the figure of R.E. Parkes) following the shipment of 45 tons to Tacoma in 1956 which averaged 1.74 silver and 6.71 copper and probably with some MoS<sub>2</sub> values which were not considered. However with silver at 90¢ and copper at 34¢, freight and handling reduced the return by nearly half. It proved uneconomical to continue mining until such time as the ore could be concentrated or a local smelter put into operation. As a result the shaft operation was shut down in 1956 and has since filled with water from an underground drill hole.

Pete Williams of the firm of J. R. Williams & Sons, Provincial Assayers, who have assayed hundreds of samples and cores from the Toluma property, positively asserts that the alteration evident in the deeper core samples indicates the existence of a massive ore body at levels below those which have so far been penetrated by drilling.



The unfulfilled commitment of Great Slave Mines to drill two holes to a depth of 1000 feet plus, together with exploration of the unexplored South Anomaly and the draining and further exploration of the shaft area would have cost approx. \$75,000.

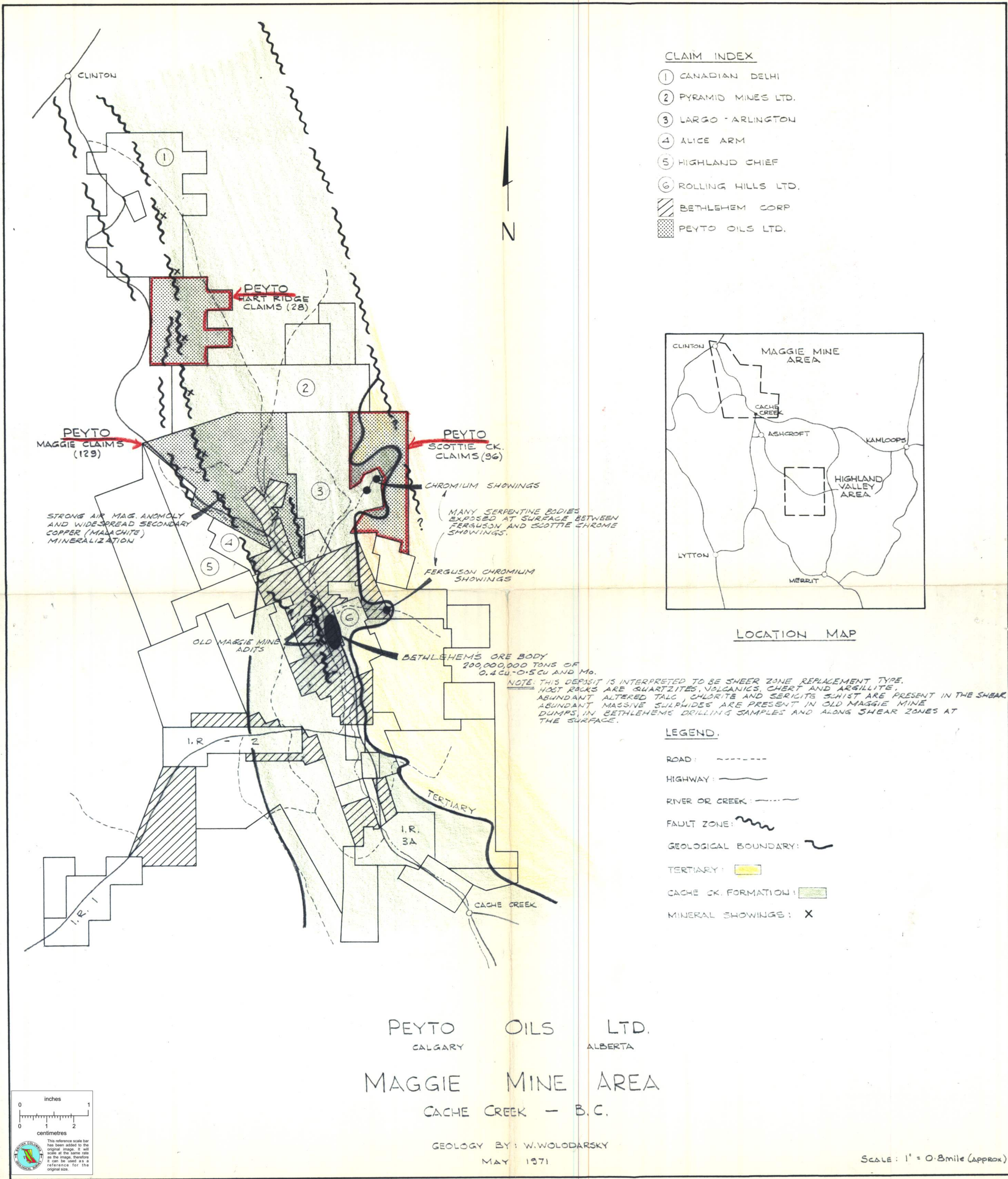
#### SUMMARY OF REPORTS

In spite of the fact that some \$400,000 has been expended on exploration, all efforts have been directed toward finding a multi-million ton copper bearing orebody that would be suitable for strip mining. The fact that molybdenite was evident in significant quantities throughout the property was almost completely ignored until 1963, by which time exploratory work was curtailed as finances dwindled. The partial assessment of molybdenite findings in 1963 would not appear to be representative of the overall potential indicated by the numerous samples from trenching and drill cores taken over much larger areas of the property. It is a reasonable assumption that with one exception, the overall molybdenite values in the present known ore-bodies, equal or exceed the value of the potential copper recovery. The exception being the high grade copper orebody intersected by the shaft.

A review of the overall exploration program based on the reports leads to the conclusion that a little of many things was done and not enough of any one thing, with the result that the total falls far short of what would be considered a methodical scientific exploration of the property. Some of the negative or less promising findings, which appear to be the result of speculative drilling, only more or less related to geophysical findings, are of limited significance on a property of this size and do not disprove the positive indications of extensive mineralization in depth of commercial value elsewhere.

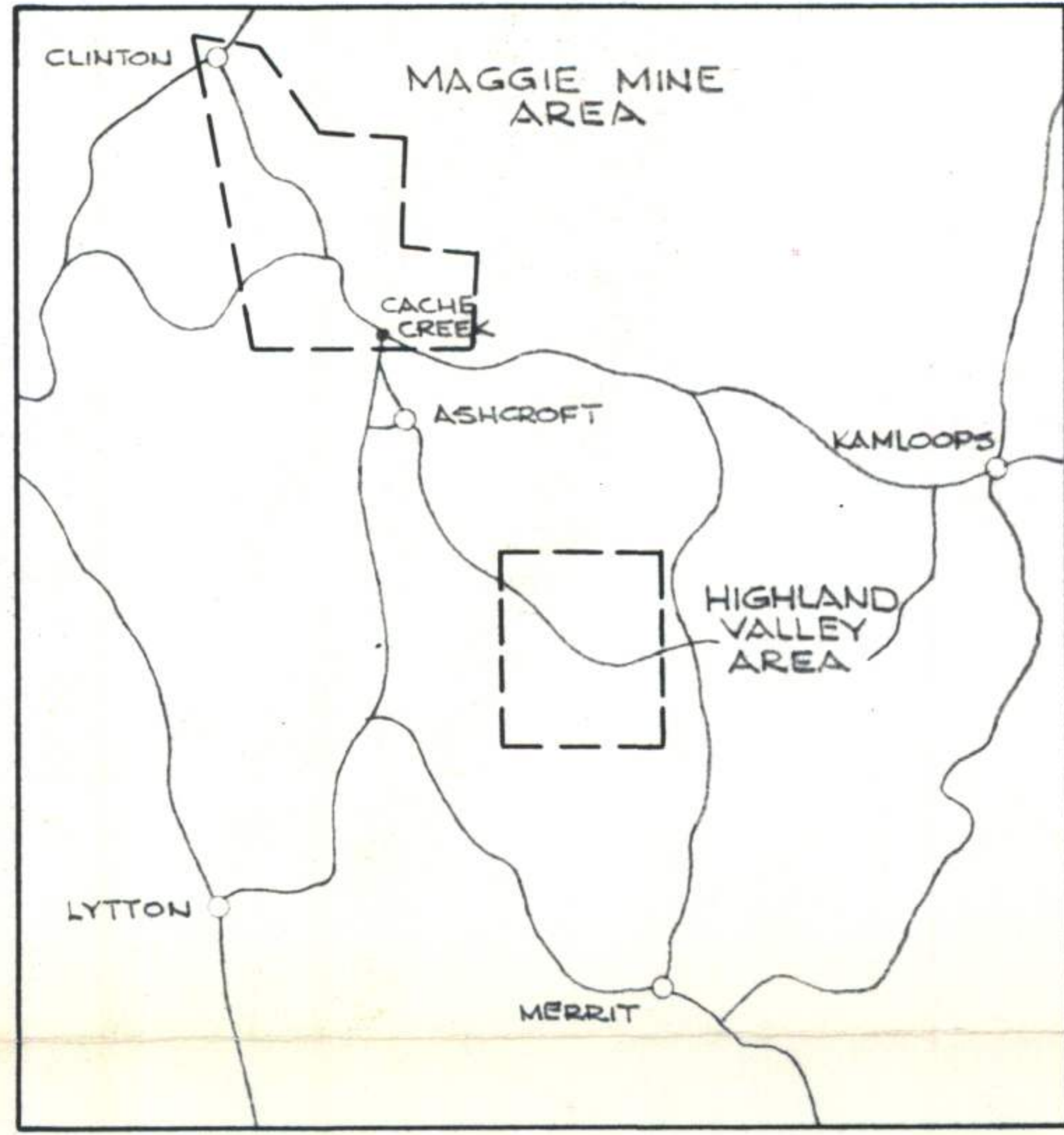
Had ample funds been available, methodical geological and electrical surveys of the entire property would have been possible and such surveys would likely have been much more revealing. Blasting and trenching have shown mineralization over a large area but it is significant that deep drilling was required to locate the main ore body at both Craigmont and Valley Copper properties, both of which have some similar geological characteristics.

One aspect of the property to which reference has so far been omitted is the high silica content of the carload ore shipments made to the Tacoma Smelter. As one engineer commented "with 97% silica, who needs copper?" Our hopes for further development have therefore been raised considerably by the announcement of a B. C. Government subsidy followed by protective legislation to foster the establishment of a copper smelter in Southern British Columbia. While this is a nice "ace in the hole", with Toluma being lined up between Brenda and the Highland Valley plus the development work already completed, it would seem to be of secondary importance.



**CLAIM INDEX**

- ① CANADIAN DELHI
- ② PYRAMID MINES LTD.
- ③ LARGO - ARLINGTON
- ④ ALICE ARM
- ⑤ HIGHLAND CHIEF
- ⑥ ROLLING HILLS LTD.
- ▨ BETHLEHEM CORP
- ▩ PEYTO OILS LTD.



**LOCATION MAP**

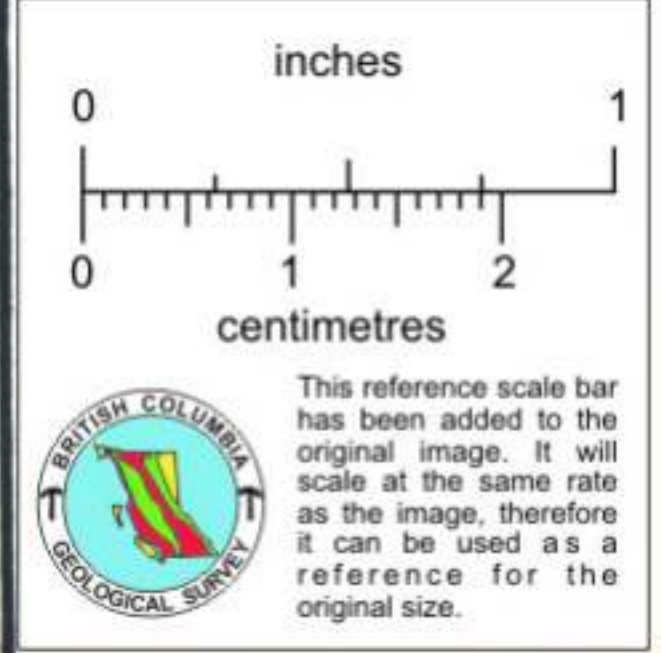
NOTE: THIS DEPOSIT IS INTERPRETED TO BE SHEAR ZONE REPLACEMENT TYPE. HOST ROCKS ARE QUARTZITES, VOLCANICS, CHERT AND ARGILLITE. ABUNDANT ALTERED TALC, CHLORITE AND SERICITE SCHIST ARE PRESENT IN THE SHEAR. ABUNDANT MASSIVE SULPHIDES ARE PRESENT IN OLD MAGGIE MINE DUMPS, IN BETHLEHEM'S DRILLING SAMPLES AND ALONG SHEAR ZONES AT THE SURFACE.

- LEGEND.**
- ROAD: - - - - -
  - HIGHWAY: ~~~~~
  - RIVER OR CREEK: ~~~~~
  - FAULT ZONE: ~~~~~
  - GEOLOGICAL BOUNDARY: ~~~~~
  - TERTIARY: [Yellow Box]
  - CACHE CK. FORMATION: [Green Box]
  - MINERAL SHOWINGS: X

PEYTO OILS LTD.  
 CALGARY ALBERTA  
 MAGGIE MINE AREA  
 CACHE CREEK - B.C.

GEOLOGY BY: W. WOJODARSKY  
 MAY 1971

SCALE: 1" = 0.8 mile (Approx.)



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