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GEOLOGY AND SOIL GEOCHEMISTRY

MOUNT SICKER PROPERTY

VICTORIA MINING DIVISION
BRITISH COLUMBIA

LOCATION: NTS 92 B 13 (E and W)
Latitude 48° 52'N
Longitude 123° 46'W

CLAIM NAMES: CF Group #1-8 inclusive
CF Group #13-18 inclusive
Rocky #1-6 inclusive
Acme Fraction
Margret Fraction
26 Crown Grants (see Appendix 2)

OWNER: S.E.R.E.M. Ltd.

REPORT BY: P. A. Ronning

WORK BY: G. Allen
C. van Houten
P. Ronning

DATE: Jan. 31 /1980

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MAPS AND FIGURES

1. INTRODUCTION

The Mount Sicker property straddles Big Sicker Mountain and part of Little Sicker Mountain in the Chemainus Seymour and Somenos Land Districts, Vancouver Island, British Columbia. Big Sicker Mountain is 10 kilometers northwest of the town of Duncan. Access to the property is by road, from Highway 18 north on Somenos Road, northwest onto the Mt. Prevost Road and thence onto a network of old mining and logging roads. It can also be reached from Highway 1, via a turnoff to the west onto a country road, just south of the Chemainus River bridge.

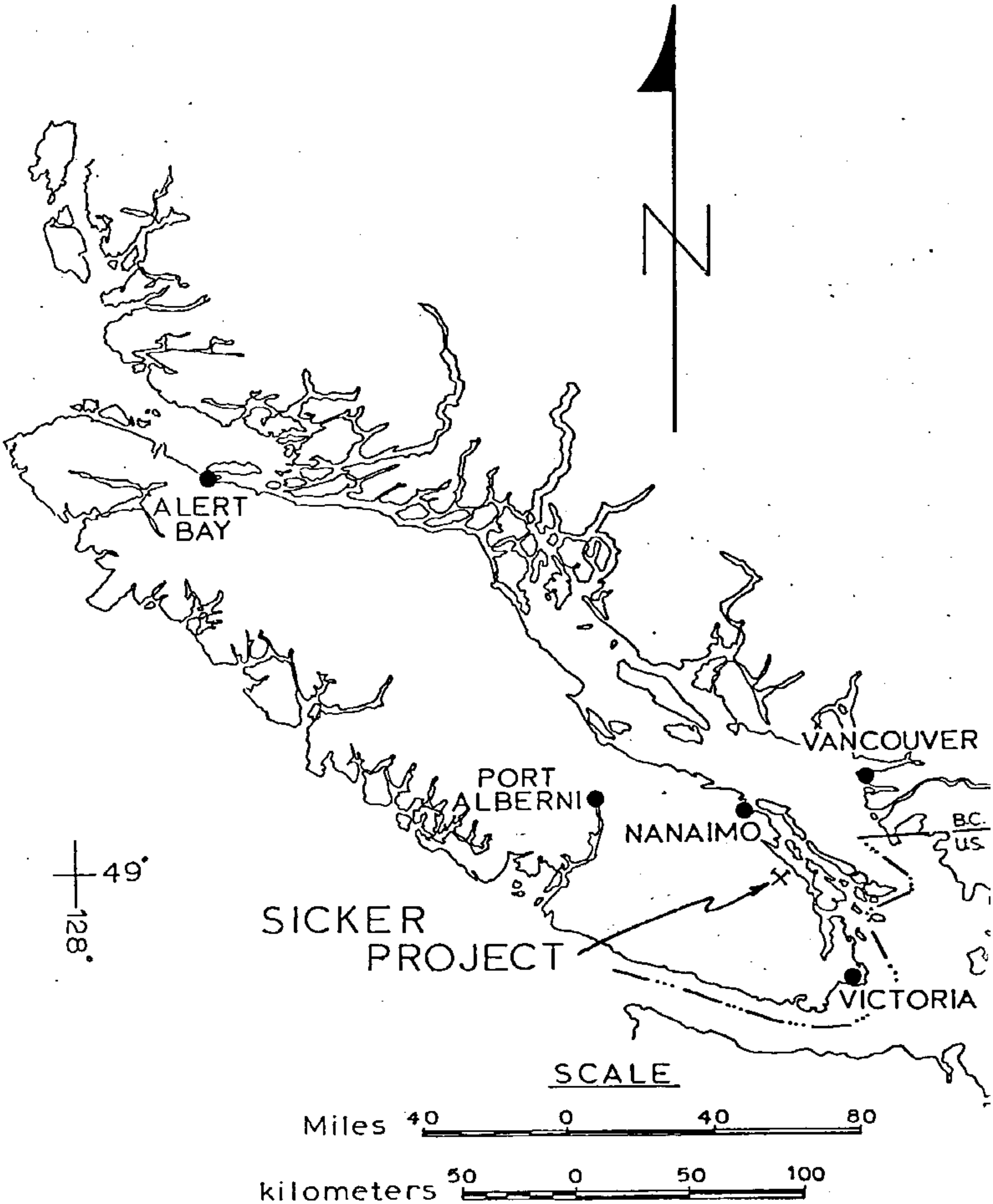
Big Sicker Mountain is a little over 700 meters high. For the most part its flanks slope between 10 and 30 degrees and it is densely treed, except for some steep bare cliffs on the east side facing Highway 1. The mountain has been glaciated and much of it has been covered with drift. The flatter parts of the top and flanks are swampy. It is bounded on the south by Mt. Prevost, on the west by the U-shaped valley of the Chemainus River with Copper Canyon in its bottom, on the north by the broad valley of the Chemainus River and on the east by the valley of Bonsall Creek and Highway 1.

S.E.R.E.M. Ltd. staked the six Rocky claims, the Acme Fraction and the Margret Fraction. The fourteen CF claims and 26 crown grants are owned by S.E.R.E.M. under the terms of an option agreement with Mount Sicker Mines Ltd.

The property centers on an old underground mine which has been worked sporadically by various companies since the turn of the century. The initial

Location Map

Fig. 1



discovery was made in 1897, with development and mining beginning on the Tyee claim in that year. Work on the Lenora claim began in 1898, and mining continued until 1907. A few tons were shipped from the Richard III claim in the same period.

Development and exploration work were done by Ladysmith Tidewater Smelters Ltd. in 1926-1929 and by Sheep Creek Mines Ltd. in 1939-1940.

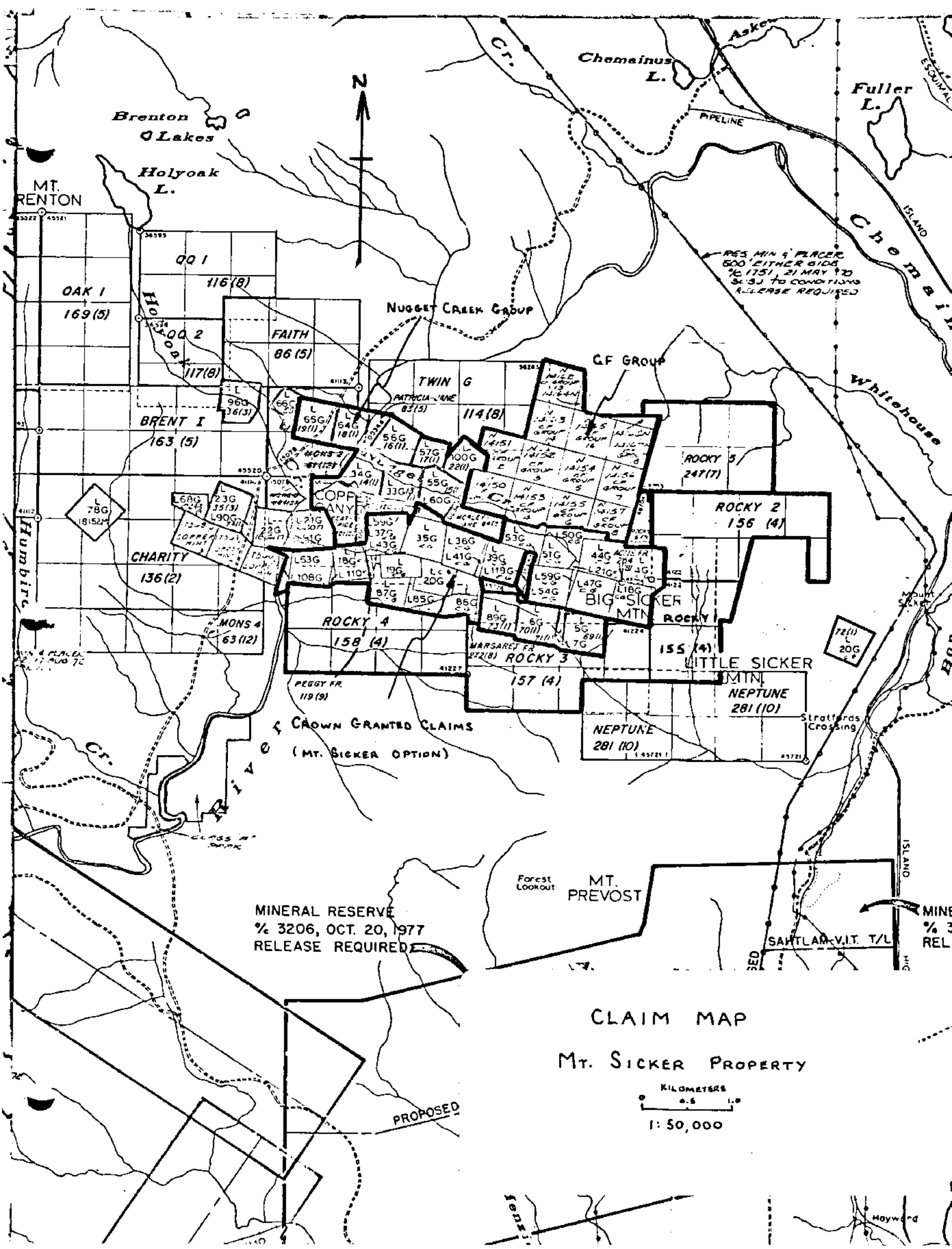
From 1943-1947 Twin J. Mines produced copper and zinc concentrates from the consolidated group. In 1949-1952 Vancouver Island Base Metals rehabilitated the mine, with some production.

Some surface mining was done by the original principals of Mt. Sicker Mines Ltd. in 1964, and the company was formed shortly thereafter. From that time until 1974 various operations explored the property, doing surface work and diamond drilling. In 1967 an attempt was made to extract copper from dump material by heap leaching but it did not prove feasible.

In the old mine were two nearly parallel east-west trending ore bodies. They consisted of massive sulphides, containing principally copper and zinc, with minor lead and significant gold and silver. Barite is a major constituent of some ore and may be of economic interest. To date production has been 305,787 tons of ore yielding 20,265,763 lbs. of copper 45,960,252 lbs. of zinc, 40,052 ounces of gold and 841,276 ounces of silver.

The ore bodies occur within the mid to upper paleozoic Sicker group, associated with schists belived to have originated as felsic volcanics.

Some ore may remain in or adjacent to the mine. Old mine plans and reports show a few occurrences of massive sulphides which were not exploited


CLAIM MAP
Mt. Sicker Property
KILOMETERS
0 0.5 1.0
1: 50,000
N
Brenton Lakes
Holyoak L.
MT. RENTON
Chemainus L.
Fuller L.
PIPELINE
ESQUIMALT
ISLAND
Chemainus
Whitehouse
RES. MIN. & PLACER 500' EITHER SIDE % 1751, 21 MAY '70 S. 3J TO CONDITIONS RELEASE REQUIRED
NUGGET CREEK GROUP
CF GROUP
QQ 1 116(8)
OAK 1 169(5)
QQ 2 117(8)
FAITH 86(5)
TWIN G 114(8)
PATRICIA-JANE 83(5)
BRENT I 163(5)
ROCKY 5 247(7)
ROCKY 2 156 (4)
CHARITY 136(2)
COPPER CANYON
MONS 4 63(12)
ROCKY 4 158 (4)
ROCKY 3 157 (4)
MARGARET FR 272(8)
ROCKY 1 155 (4)
BIG SICKER MTN
LITTLE SICKER MTN
NEPTUNE 281 (10)
NEPTUNE 281 (10)
PEGGY FR. 119(9)
Stratfords Crossing
Mount Sicker
CROWN GRANTED CLAIMS (MT. SICKER OPTION)
Humbird
Cr.
River
CLASS "A" PARK
Forest Lookout
MT. PREVOST
MINERAL RESERVE % 3206, OCT. 20, 1977 RELEASE REQUIRED
SAHTLAM-V.I.T. T/L
PROPOSED
Hayward

or followed up and several references are made to "low grade" disseminated type mineralization that was not of much interest in the early days.

Another possibility is that there may be similar deposits elsewhere on the property. Many mineral occurrences exist and good potential host rocks are widespread.

S.E.R.E.M. Ltd. began exploration work on the Mount Sicker property in June, 1978. The work described in this report includes geological mapping of 1200 hectares at a scale of 1:2,500 and a survey of soil geochemistry with 2,837 samples covering 92 kilometers of lines at 30 meter intervals.

2. TOPOGRAPHIC CONTROL

Topographic control for the geological and geochemical work described here was provided by a 1:2,500 topographic map made from air photos and by 106 kilometers of grid lines. Preparation of the map and most of the grid system have been previously reported. Seventeen km. of cutting on previously marked lines is included in the cost statement for this report.

Geological and geochemical maps accompanying this report have been reduced to 1:5000 to make their sizes more convenient. The detail of the 1:2,500 originals has been retained.

3. REGIONAL GEOLOGICAL SETTING

Mount Sicker is underlain by rocks of the Sicker Group, which "comprises all known Paleozoic rocks of Vancouver Island... The group is exposed in narrow, fault-bounded uplifts" (Muller, 1977). Mount Sicker is near the southeastern end of the largest of these, the Horne Lake-Cowichan Lake uplift. It extends from Maple Bay in the southeast, 110 km. northwest to Horne Lake, and is about 20 km. wide.

Muller divides the Sicker Group into a lower volcanic formation, a middle greywacke-argillite formation, and an upper limestone formation. Within the Horne Lake-Cowichan Lake uplift the volcanics and greywacke-argillites vastly predominate with minor limestone on the southern and western fringes. On Mt. Sicker itself one sees mostly volcanics with minor amounts of sediments mixed with pyroclastics.

Regionally the volcanics range from fine grained banded tuffs to coarse breccias to agglomeratic flows with basaltic to rhyolitic compositions. They are "mostly of low greenschist chlorite-actinolite metamorphic rank" and "locally they are shear-folded and converted to well foliated chlorite-actinolite schist."

Shear folding has certainly taken place on Mt. Sicker, which is a graben-like structure bounded by faults on four sides.

4. GEOLOGY OF MOUNT SICKER (Refer to Map 3)

4.1 LITHOLOGIES

Unit 1 - Quartz Schist includes most rocks in the central part of the property. In its usual form, thin laminae of very fine grained siliceous appearing material are separated from each other by micaceous foliations consisting of sericite with variable but lesser chlorite. The siliceous material is seen in thin section to consist of a very finely crystalline mixture of quartz and intermediate to sodic plagioclase feldspar.

A few percent of white phenocrysts, up to 3 mm. across, often shaped like subhedral feldspar, usually occur in Unit 1. They are plagioclase in the oligocene-andesine range, often partly to completely replaced by quartz.

Unit 1 is broken into four sub-units depending on the amount of chlorite visible and whether or not augen are present.

These schists are believed to have originated as felsic to intermediate volcanics, mostly flows but probably including some pyroclastic material.

Unit 2 - Schist comprises those rocks in which sericite dominates and quartz or feldspar does not form an important part of the groundmass. Subsidiary amounts of chlorite may be present (sub-Units 2c, 2d) and quartz augen sometimes occur (sub-Units 2b, 2d). In some sericite schist, very fine sandy or silty quartz is present in small amounts.

These rocks are usually soft, light coloured and very fissile. Iron and manganese oxides occur on cleavage surfaces in even the freshest specimens.

Unit 2 probably originated as silty and/or tuffaceous mudstone.

Unit 3 - Chlorite Schist is made up almost entirely of chlorite (sub-Unit 3a) or contains subsidiary sericite (sub-Unit 3b).

Chlorite schist of sub-Unit 3a is soft, dark green, frequently slightly calcareous and often contains a few percent silty quartz grains. Much of it is probably a metamorphosed silty mudstone or very finely tuffaceous mudstone. It is usually spacially associated with andesitic rocks of Unit 5b and 15, and may be partly equivalent.

Sericite chlorite schist of sub-Unit 3b is soft streaky looking shiny silvery grey rock, often calcareous. Though chlorite is the dominant phyllosicate, this schist occurs more often amongst sericitic schists than does 3a and is less likely to be associated with andesites. It also probably originated as a mudstone or tuffaceous mudstone.

Unit 4 - Graphitic Schist is divided into two sub-units, black graphite schist (4a) and light grey graphitic sericite schist (4b).

The black graphite schist is very fine grained and varies in composition from soft nearly pure graphite schist (rare and only seen underground) to the more resistant, less pure but still black graphite schist which occasionally crops out on the surface.

This rock occurs (with rare exceptions) only near the mine, where it was used as a marker horizon.

The graphitic sericite schist (4b) contains small amounts of graphite, either distributed throughout the schist, imparting a grey colour, or occurring as thin dark seams and pods within the schist. It occurs with the black graphite schist, where it is believed to be transitional bewteen the graphite schist and non-graphitic rocks. It is, however, more widespread than the black schists, occurring in the Northeast Copper zone and elsewhere.

Unit 5 - Tuff covers a multitude of pyroclastic rock types occurring on the property. In most cases tuffs have been assigned to either the felsic sub-Unit 5a or the more common andesitic sub-Unit 5b. However, southwest of the mine many rocks are recognizably pyroclastic but their compositions are not clear. These have been assigned to undifferentiated Unit 5.

Sub-Unit 5a contains rhyolitic to dacitic pyroclastics, mostly light greenish grey but varying from white to dark greenish grey. They usually have a hard, siliceous crypto-crystalline groundmass, probably containing quartz, feldspar, and some epidote. Plagioclase feldspar crystals, averaging 1 to 2 mm. but ranging to 8 mm. in diameter, with rounded anhedral to subhedral shapes make up from less than 5% to more than 60% of the rock. Macroscopic quartz grains are rare, apparently restricted to small amounts in the more schistose parts of the unit. Sub-millimetric rounded specks of chlorite form a few percent of some of the darker green rocks.

Rarely, recognizable dacitic rock fragments occur as clasts in the tuff. They are up to a centimeter in size, with sub-rounded to sub-angular shapes.

Variations in the concentrations of macroscopic grains sometimes produce centimetric layering in the tuffs.

All the felsic tuffs are schistose, though the schistosity may only be readily apparent on weathered surfaces.

Most rocks of sub-Unit 5a lack diagnostic textures. Some do, however, have distinct clastic textures, and they often grade into sediments. These bits of evidence indicate that they are probably pyroclastic.

<ins>Sub-Unit 5b</ins> forms broad east to southeast trending belts in the northwest and southwest parts of the property. Because there are distinct textural differences between the andesitic tuffs in the south and those in the north, they will be described separately.

<ins>Southwest</ins>

The southernmost part of sub-Unit 5b appears to be interlayered with andesitic flows, grading northward to an andesitic tuff-sediment sequence, bounded on the north by sub-Unit 5a. There is some interlaying of 5b and 5a near the contact, with inter-bedded sediments common on both sides of it.

The andesitic tuff is generally dark greenish with the groundmass a finely crystalline aggregate of feldspar, epidote, chlorite

(+ biotite and hornblende) and quartz. One to two millimeter feldspar phenocrysts form 20 to 50% of the rock. They are equidimensional, and well rounded to sub-hedral.

Macroscopic grains of chlorite 1-2mm. in diameter occur as both sub-rounded lithic fragments and as pseudomorphs after hornblende. Some rocks contain isolated larger chloritic chip shaped lithic fragments, up to 1 cm. in diameter.

Lapilli tuffs and agglomerates form discontinuous belts several tens of meters wide. Sub-rounded to sub-angular andesitic to rhyolitic rock fragments form up to 50% of the total rock. Felsic fragments become more common near the contact between sub-Unit 5b and the more felsic 5a.

Schistosity is generally weaker in sub-Unit 5b than in most of the other volcanics, often being completely absent.

Northwest

Andesitic tuffs of the northwest are generally finer grained than those of the southwest. Macroscopic feldspar grains form zero to 30% of the rock, being about 1 mm. in diameter, sub-rounded to sub-angular, and often partly epidotized. Indistinct millimetric rounded chlorite grains, forming up to 80% of the rock, are commonly smeared out along the schistosity.

The northwestern andesitic tuffs often have centimetric colour banding in shades of grey, and in a few places strings of small siliceous pebbles mark layering. Epidote "nodules", ellipsoidal bodies of silicified and epidotized rock, are common in the northwest. They are up to several centimeters long and may be strung out along certain horizons in the rock. Epidotized feldspar crystals sometimes form up to 30% of the "nodules", which may be blocks or bombs within the tuffs.

Andesitic tuffs in the northwest are generally schistose and grade laterally and vertically into chlorite schists. Interlayering of the andesitic tuffs with more felsic rocks, uncommon in the southwest, is frequent in the northwest.

Unit 6 - Meta-Quartzite includes scattered occurrences of rocks consisting almost entirely of fine to coarse grains of clear grey-white quartz. The grains interlock or are cemented by silica. A few sericitic partings may be present but they are not frequent or strong enough to make the rock a schist. Specks of chlorite may be present.

The occurrence of these rocks is scattered and they are not necessarily related to each other. They could be metamorphosed or silicified versions of any of the felsic or siliceous rocks on the property.

Unit 7 - Slate/Phyllite are rare, occurring in a few outcrops near the 56N base line and once near the Yankee fault. They are most often found interlayered with sericite schist.

The phyllite is dark bluish grey with a lustrous sheen on the schistosity planes.

Unit 8 - Dacite is a porphyritic rock containing 15 - 30% plagioclase phenocrysts up to 5 mm. in diameter in an aphanitic groundmass that is probably a cryptocrystalline mixture of quartz and feldspar. Irregularly shaped quartz phenocrysts, similar in size to the feldspars, form less than 15% of the rock.

Specks and streaks of chlorite, sometimes altered or metamorphosed to form biotite, occur in the groundmass. Feldspar phenocrysts sometimes contain intracrystalline epidote, chlorite and/or biotite.

The Dacite is variably schistose and some equivalent rocks have probably been mapped as Unit 1. Unit 5a is probably partly equivalent to Unit 8, and vice versa, since the differentiation of pyroclastic from flow textures is often inconclusive.

Unit 9 - Rhyolite is texturally very similar to the dacite of Unit 8, characterized by about 25% feldspar phenocrysts, in an aphanitic matrix that is probably mostly crypto-crystalline quartz and feldspar. Specks and streaks of chlorite are usually present but in lesser amounts than in Unit 8.

The distinction between Units 8 and 9 is based largely upon the colour index, 9 being the more leucocratic. This is an overly simplistic criterion, particularly in an area such as this which has seen considerable metamorphism and some alteration. Nevertheless, the distinction is made, and Unit 9 contains those siliceous meta-volcanics with low colour indices.

Parts of Units 1 and 5 are probably equivalent to Unit 9.

Unit 10 - Cryptocrystalline Quartz makes up at least 5 bands of rock, 2 or more meters wide, trending northwest in the northeast part of the property. The rock is light to medium grey in colour and very hard, composed almost entirely of fine to cryptocrystalline quartz. Very irregular seams of sericite and/or chlorite occur but are too randomly shaped and oriented to impart a schistosity. Finely disseminated pyrite forms 1% to 5% of the rock and locally decimetric pods and seams of coarse grained pyrite form up to 50%. Chalcopyrite, chalcocite, and less covellite sometimes occur as fine to coarse disseminations.

Though this rock in part resembles chert, that term, with its sedimentary implications, is avoided here. The origin of this rock is disputed but it may be hydrothermal.

Unit 11 - Hornfels. The gabbroic intrusions of Unit 14 produced very little thermal metamorphism in the intruded volcanics. Occasionally, however, a hard pale green, grey or beige rock, fine or very fine grained and speckled with green chlorite and/or actinolite occurs near the gabbro/volcanic contact. Significant quantities of epidote sometimes appear.

Unit 12 - Quartz Feldspar Porphyry forms a narrow band about 40 meters wide and 900 meters long in the north-central part of the property. It contains about 25% quartz phenocrysts and 25% white feldspar phenocrysts, both medium to coarse in size. Quartz crystals are oval to prismatic, showing 1 or more crystal faces. Feldspars are oval to subhedral.

The matrix is very fine grained, and appears to consist mostly of streaky, siliceous sericite, locally containing patches and streaks of chlorite. The rock is light coloured, creamy white, light grey, or greenish grey.

Unit 13 - Granitoid Intrusion - This resembles many of the other felsic rocks in composition but has the aspect of an intrusive rather than an extrusive rock. The texture is orthophyric with ovoid, angular or sub-idiomorphic crystals of quartz and feldspar in approximately equal amounts, making up 30% to 40% of the rock. The groundmass is very finely crystalline, yellowish white, hard and probably very siliceous. Mafics, less than 5% of the rock, occur as millimetric specks and streaks parallel to the foliation. They consist of fine chlorite, possibly with actinolite.

Streaking of the mafics, sub-parallelism of some prismatic feldspars and faint colour lamellae give the rock a gneissic foliation.

Unit 14 - Gabbroic Intrusions occupy nearly 50% of the mapped area. They are probably dikes, ranging in thickness from a few meters to a hundred or more. As a rule, gabbros are the most resistant and best exposed rocks on the property.

The common primary minerals of the gabbro are plagioclase (25% - 60%), dark green pyroxene (40% - 60%), magnetite or ilmenite (up to 15%) and minor pyrite. Secondary minerals include chlorite, actinolite, epidote, quartz, calcite, and hematite. Chlorite and actinolite replace the pyroxenes in some places. Epidote replaces plagioclase or occurs in patches and veinlets. Calcite occurs in veins with quartz or interstitially between crystals of other minerals. Occasionally specular hematite replaces magnetite.

Grain-sizes range from fine (sub-Unit 14b) through medium to coarse (sub-Unit 14a), with textures from hypidiomorphic granular to porphyritic with feldspar phenocrysts.

Locally but uncommonly mafics form less than 25% of a dike and the composition appears to be almost intermediate. These rocks are assigned to sub-Unit 14c, Diorite.

In Unit 14 schistosity varies from absent to very strong. If the schistosity is well developed the rocks are assigned to sub-Unit 14d.

Unit 15 - Andesite probably includes two types of rocks which were not properly differentiated in the field.

Dikes of andesitic composition cut the gabbro in several locations near the 26N base line. They are fresh-looking, with a hypidiomorphic granular texture, composed 80% or more of plagioclase, 15-20% amphiboles, small amounts of quartz, and minor pyrite. Chilled margins often appear, and these andesites are usually less fractured than the country rocks. They are clearly younger. Probably the vast majority of andesites predate the gabbro and are extrusive. They also are usually a hypidiomorphic granular mixture of plagioclase and amphiboles (or chloritic pseudomorphs of amphiboles). Some porphyries exist, with approximately 20% millimetric feldspar phenocrysts and 20% amphiboles in a chloritic, sometimes epidote-bearing matrix.

Epidote usually occurs as a diffuse alteration of plagioclase and the groundmass. However, particularly in the southeast epidote "nodules" similar in appearance to those in sub-Unit 5b may occur.

The amount of quartz in the andesite is extremely variable. It usually occurs as a cryptocrystalline part of the groundmass and is at least partly a result of silicification. Calcite may be present in the groundmass or coating fractures.

The andesite is associated and at least partly equivalent to andesite tuffs of sub-Unit 5b and chlorite schist of sub-Unit 3a.

Unit 16 - Late Rhyolite/Latite occurs as dikes or small plugs within gabbro or occasionally in schist. It consists of up to 10% fine or medium feldspar phenocrysts and up to 10% fine green hornblende phenocrysts in a light coloured sucrosic, felsic groundmass.

This rock is usually non-schistose though weak schistosities have been found near its contacts with older schist.

Unit 17 - Sicker Group Sediments

Sub-Unit 17a - Fine Grained Siliceous Tuffaceous Sediments form discontinuous bands within felsic tuffs of sub-Unit 5a. They are fine grained to cryptocrystalline, probably composed of a mixture of quartz, feldspar and epidote, with minor lamellae of sericite and chlorite. Their colour is light to dark grey, showing a thin colour banding.

This sediment could be a partly re-worked tuff.

Sub-Unit 17b - Andesitic Tuffaceous Sediments consist of narrow belts of siltstone and wacke within sub-Unit 5b. The siltsone is light to dark greenish grey, soft to medium hard. The more common sandstone and wacke contain up to 50% macroscopic chloritic lithic fragments and feldspar crystals in a fine grained, variably siliceous matrix of feldspar, epidote, quartz and chlorite.

Thin to medium bedding is characteristic, and graded beds exist. These sediments are at most weakly schistose, but where bedding and schistosity are comparable they are parallel.

The tuffaceous sediments are compositionally similar to the enveloping andesitic tuffs and are probably nothing more than re-worked tuff.

Sub-Units 17c and 17d - Siliceous Argillite and Banded Chert are closely associated in thin discontinuous bands or lenses occurring in a few places near the contact between felsic tuffs and andesitic tuffs in the south.

The siliceous argillite is black, fine to cryptocrystalline, and very siliceous, with weak schistosity and indistinct millimetric banding.

The cryptocrystalline chert shows millimetric to centimetric black to light grey banding, assumed to be bedding. It contains zones a few millimeters wide of syn-sedimentary brecciation.

Sub-Unit 17e - Pebble to Cobble Conglomerate occurs in a few locations in the northwest and southwest parts of the property, closely associated with andesitic tuffs. Rounded to sub-angular pebbles and cobbles of andesite tuffs, schist, volcanics and an occasional plutonic rock are enveloped in a matrix of sandy reworked tuffaceous material.

Unit 18 - Nanaimo Group Sediments, upper Cretaceous conglomerates sandstones and shales, unconformably overly the Sicker Group and bound it along faults.

Unit 19 - Intermediate to Felsic Porphyritic Intrusive rock intrudes andesitic tuffs as an east to southeast trending sill-like body up to 75 m. wide, in the southwest part of the map area. It is a greenish grey feldspar porphyry. Euhedral to subrounded laths and prisms of feldspar 1 to 4 mm. long make up 20% to 40% of the rock. They have a waxy appearance and many have carlsbad twinning.

Chloritic pseudomorphs of mafic phenocrysts sometimes form up to 5% of the rock.

The groundmass is a weakly to moderately siliceous fine-grained crystalline aggretate of biotite, chlorite, feldspar, epidote, and quartz. The colour index is 10 to 15.

4.2 STRUCTURAL GEOLOGY

A general sequence of geological events for Mt. Sicker is proposed as follows:

1. Volcano-sedimentary Sicker Group rocks deposited (Units 1,2,3,4,5,6,7,8,9,10, 13(?), 15,17).
2. Gabbroic sills (Unit 14) intrude volcano-sedimentary sequence at low angle.
3. All existing rocks folded with development of near vertical northwest-southeast trending schistosity.
4. Minor episode of folding with existing structures slightly bent.

Near vertical, northeast trending axial plane, near vertical axis. This leaves unresolved the ages of Units 13, 16, and 19, and of the faults.

Figures 1 and 2 are attempts at drawing structural cross-sections. They are unsatisfactory, leaving old problems unexplained, and raising new ones. However, they serve as a starting point. See Map 3 for locations of the cross-sections.

Section D-D' is drawn using the mapped geology from the line of section west as a basis. It shows the gabbro dikes, of which two major ones and several minor ones exist, folded into normal to tight, occasionally isoclinal folds whose axes trend northwest. The enveloping volcanics and sediments presumably follow the same structures, but with them a lack of marker horizons makes interpretation difficult.

Section E-E is drawn across the east end of the mapped area. Structures appear to carry through from Section D-D', but most of the folds are apparently much more open in the east.

5. MINERALIZATION

5.1 THE MINE

The orebodies at the mine contained massive sulphides, with two main types of ore. These are barite ore, with fine grained pyrite, chalcopyrite, sphalerite and minor galena in a barite-quartz-calcite gangue, and quartz ore, consisting of pyrite and chalcopyrite with minor sphalerite and barite and traces of galena in a quartz gangue with some calcite. Old mine plans suggest a zonation in the orebodies with barite cores enveloped by quartz ore.

There were two orebodies, one north and one south of the mine fault. Both were irregular cylindroids, up to 10 meters thick, 30 meters high, and extending discontinuously over 500 meters. They ran more or less horizontally from east to west.

Old drawings of stopes suggest that the orebodies were by no means continuous, pinching and swelling quite rapidly along their lengths.

The easternmost exploratory workings at the mine are those of the Richard III shaft, near line 16E. Mineralization has been reported at the 500 foot level and a few pieces of barite ore were found on the dump near the shaft, but no continuations of either the north or south orebodies have been found in the Richard III or east of it. One possibility is that the north-south fault just west of the Richard III shaft displaced the ore horizon up or down relative to its location further west.

5.2 NORTHEAST COPPER ZONE/FORTUNA

The Northeast Copper Zone lies east of line 64E near the 26N base line, north of a large body of gabbro. At least three irregular bands of very siliceous rock (Unit 10) trend northwest - southeast across the zone. This rock contains 1% to 5% pyrite, finely disseminated or concentrated in decimetric pods. Small amounts of chalcopyrite occur as disseminations, with or without pyrite. Selected specimens assay as high as 2% copper and 0.3 oz/ton silver, though on the average only trace amounts of copper are present.

Northwest of and diagonally downhill from the Northeast Copper Zone, near 9+00N on line 60E, is what was originally thought to be a trench but is now believed to be the caved portal of the Fortuna Adit. An engineer's report written in 1899 cites 3 "workable veins" of copper ore 5 feet, 8 feet and 20 feet wide assaying $7.20, $9.35 and $12.40 per ton. No great reliance should be placed on these figures but presumably some copper is present in the Fortuna Adit.

Hole S-72-3, drilled near the adit for Ducanex Resources in 1973, encountered scattered copper mineralization and some "chert" which may be the quartz-rich rock (Unit 10) of the Northeast Copper Zone. S-72-4 between the Fortuna and the Northeast Copper Zone also cut scattered copper and some "chert". Mineralization in the Fortuna is probably related somehow to that in the Zone.

5.3 NUGGET CREEK GROUP

Near the west end of the map area, between line 4W and 8W at about 9+30N, a small amount of bulldozer trenching was done by previous operations. This area is not at the moment part of the Mt. Sicker property but an option is pending. The 50 meter trench contains about 30% exposed bedrock consisting mostly of sericite schist and of sericite quartz augen schist. Boulders of grey cryptocrystalline quartz resembling Unit 10 are also present. The only visible mineralization is pyrite in sericite schist, usually 2% to 5% but as high as 10%. However, a grab sample of flaky limonitic sericite augen schist from a small sheared exposure at the southwest end of the trench returned an assay of nearly 7% zinc.

Drill hole S-72-1 in the same area cut pyritiferous schist from 16 to 84 meters below which are 17 meters of "graphite sericite schist" which may correspond to sub-unit 4b on the map. This contains an average of 10% to 15% pyrite but zones of unrecorded thickness contain up to 50%. Small amounts of chalcopyrite are present, the highest assay being 0.41% over 3.4 meters.

5.4 CENTRAL SCHIST PANEL

Roughly in the central part of the map area, entirely south on the 26N base line and almost entirely north of the ON base line, ranging from about 24W to 84E is a large area underlain by schists of Unit 1 called the Central Schist Panel. Throughout this area are numerous small pyrite occurrences, usually consisting of bands or lenses parallel to the schistosity, a few centimeters wide and a few decimeters or meters long, containing 10% to 50% pyrite in quartz gangue. The pyrite often contains traces and occasionally 1% or 2% chalcopyrite.

Mineralization, similar to that in the Central Schist Panel occurs in Nugget Creek to the west.

It is unlikely that the mineralization of the Central Schist Panel has of itself any potential for exploitation. It resembles stringer zone mineralization that often occurs below massive sulphide horizons.

5.5 CHEMAINUS RIVER

Along the Chemainus River at the west end of the map area a number of silicified shear zones contain chalcopyrite mineralization. Grab samples assaying as high as 4.4% copper have been collected from these but they are small occurrences with little potential. They occur in several different rock types and are probably not genetically related to the wall rocks.

Similar mineralized shears are scattered throughout the property, and their apparent abundance in the Chemainus River may only be a result of the good rock exposure there.

6. SOIL GEOCHEMISTRY

MIN EN LABS. NORTH VANC.

Soil samples were systematically collected over most of the property, except for a block of ground between ON and 26N west of 16E. In that area mining activity, several old townsites, and an extensive road network have resulted in considerable disruption of the soil and a survey would be relatively meaningless.

Samples were collected by two men trained and supervised by a geologist.

Most of the property is covered by glacial till and residual soil is rare. This reduces the value of soil geochemistry. Nevertheless, results at the Northeast Copper Zone demonstrate that mineralization in the bedrock is reflected in soils.

Samples were collected from the "B" soil horizon, which usually occurs between 10 and 25 cm below the surface. This horizon is almost always present and recognizable, but where it is absent "A" horizon soil was substituted. In areas where soil was obviously disturbed (roads, trenches, etc.) no samples were obtained, nor were any obtained from swamps.

Results were analysed statistically using the method described by Lepeltier (1969) (Appendix 2). The Table below shows the threshold levels determined. The graphs used to determine them appear in Appendix 2.

	Break in Slope	Upper 2 1/2 Percentile
Cu	86 ppm	270 ppm
Pb	42 ppm	42 ppm
Zn	125 ppm	410 ppm
Ag		1.8 ppm

The break in slope is significant in that it marks a dividing line between two statistically distinct populations of values. In the case of copper, for example, the change in slope on the graph indicates that more high values occur than one would expect from a single lognormally distributed population.

The upper 2 1/2 percentile is simply the value above which lie 2 1/2 percent of the results. It is an arbitrary point above which results are considered anomalous. That it lies at the break in slope on the lead graph is fortuitous. There is no break in slope on the silver graph.

On Maps 4a, b, c and d anamolous areas are outlined. Isolated high values are not outlined, but copper and zinc anomalies are still widespread.

Many, however, can be discounted based on other information; for example the area near the ON base line from 24E to 36E has been tested through drilling by S.E.R.E.M. and others and low grade stringer type copper mineralization, unexploitable but sufficient to explain the anomaly is known to exist.

The best geochemical targets lie in two areas, and there are lesser targets which should be examined further in two other areas.

6.1 HERBERT

South of the mine a copper anomaly centers on line 8W between 2+70S and 6+60S. It extends west to 12W and east to 4W. This is near the west end of a broad area of high zinc values, but the highest zinc values correspond quite well with the copper, lying between about 1+50S and 4+20S on lines 8W and 12W. This same area has the only large lead anomaly on the property, with high values on line 8W from 2+40S to 6+60S and scattered highs on 12W and 4W. High silver values appear from 2+70S to 3+90S and at 5+40S and 5+70S on 8W.

This area is called the Herbert for the crown-granted claim in which it lies. It is one of only two places on the property where all four elements are concentrated in the soils. Careful prospecting here has failed to find anyting to explain the anomaly. It is close to the mine but there is no evidence of mining, waste dumping or construction. A suggestion has been made that wind-blown dust from an old tailings pond 450 meters west of the anomaly could have contaminated the area. This is conceivable, though the writer would expect such contamination to produce an anomaly contiguous with the dump, which this is not.

6.2 NORTHEAST COPPER ZONE/FORTUNA

It was no surprise that a copper anomaly in soils surrounds the Northeast Copper Zone, appearing on lines 72E, 76E, 80E and 84E straddling the 26N base line. There are no contiguous silver or lead anomalies, but a weak, erratic zinc anomaly shows up slightly north of and downslope from the copper anomaly.

Less expected were the overlapping copper, zinc and silver anomalies near the Fortuna Adit (vicinity of line 60E, 9+00N). Small lead anomalies appear nearby on lines 60 and 64E.

No doubt the Fortuna anomalies are partly attributable to contamination from the mining work. They are mainly interesting as evidence that mineralization of all four elements tested probably exists near or in the adit.

Strong copper and zinc anomalies, with a small lead anomaly occur downhill from the Fortuna on line 64E centered at 12+60N. A silver anomaly appears nearby on lines 56E and 60E. This is an area where the hillside levels off after dropping steeply from the Fortuna and these anomalies could well have been transported from the Fortuna.

A small creek drains from the caved Fortuna Portal, and four stream sediment samples collected at about 100 meter intervals starting just below the dump contained between 205 and 860 ppm copper, 20 and 43 ppm lead, 415 and 960 ppm zinc and 1.0 and 2.5 ppm silver. No statistical background information is available for stream sediments but these values are probably high.

Careful prospecting near the Fortuna and on its dump failed to discover any mineralization. An IP survey done in 1973 on lines 56E to 76E showed up the Northeast Copper Zone quite well, as a chargeability/resistivity anomaly but showed little near the Fortuna. No other geophysics has been done there.

6.3 ROCKY #1

On lines 84E, 88E and 92E between about 3+00S and 8+10S is an erratically shaped copper anomaly. The results for other elements do not corroborate those for copper but the anomaly is of some interest because there is no ready explanation for it. The anomaly is immediately downslope of a gabbro-andesite contact but no visible copper was found in the sparse outcrops near the contact.

Magnetometer profiles on lines 84E, 88E and 92E are quite featureless. No other geophysics has been done there.

Two weaker anomalies west of this one are underlain by gabbro and are probably not important. Another weaker anomaly southwest of it crosses the gabbro-andesite contact at almost right angles in an area of very little outcrop and may bear further investigation.

6.4 NUGGET CREEK GROUP

Zinc found in rocks in the trench described in section 5.3 is reflected in soil samples from the same area. There is a moderately strong zinc anomaly just north of the trench between 4W and 8W, which trends northeast from there and broadens between lines 4W and 0E, extending from about 3+00N to about 5+10N.

As previously mentioned, drill hole S-72-1 intersected some very pyritiferous rock and a "graphitic-sericite schist". Otherwise little is known about this area. No geophysics has been done there.

7. FUTURE EXPLORATION

Based on geological and geochemical information 5 areas should be looked at more closely. These are:

7.1 EAST OF MINE

It is reasonable to assume that the ore horizon, and possibly the orebodies themselves, continue to the east of their known limits. However, work east of the Richard III shaft which has included diamond drilling and several types of geophysical surveys, has failed to trace the ore horizon.

The area immediately east of the mine is separated from the mine itself by a north-south fault of unknown displacement. Most of the movement on it was probably vertical but which side moved up and which down is unknown, so it is not possible to predict with conficence the relative positions of any orebodies that might be present east of the Richard III

This area has been drill tested to a depth of 110 meters but at least one deeper hole should be tried. One collared between 18E and 20E, about 60 meters north of the ON base line, drilled to the south with a 50° plunge and a length of about 450 meters should intersect the ore horizon if it exists within 350 meters of the surface.

7.2 HERBERT

This target is based on a geochemical anomaly (see 6-1). Additionally, the structural cross section D-D' in Fig. 1 suggests that if the ore horizon follows a similar structure to that of the adjacent gabbro, it could re-appear in the Herbert area on the south limb of an antiform.

The next step on the Herbert should be a geophysical survey. Testing at the mine has shown that VLF EM works well for tracing the ore horizon if it is near the surface while vector pulse EM responds well to deep conductors. About 4 km of VLF followed by 3 km of vector pulse EM should be tried on the Herbert area.

7.3 NORTHEAST COPPER ZONE/FORTUNA

This area is described in sections 5-2 and 6-2. Some drilling has been done there by earlier workers, and although most of the core is not available the records indicate that small amounts of copper are everywhere. No good sized bodies of high grade were ever found.

An IP survey by Nielsen Geophysics Ltd. in 1973 (assessment report 4904) outlined the Northeast Copper Zone but showed nothing in the Fortuna area. Some electromagnetic methods should be tried on both the Northeast Copper Zone and the Fortuna. About 7 1/2 km of VLF survey followed by 5 km of vector pulse EM in selected areas would be needed.

7.4 ROCKY #1

The copper anomaly in soil on the Rocky #1 claim (section 6.3) is not a high priority target but should be tested further. 3 km of VLF survey, and a vector pulse test over 1 1/2 km on three lines would cover it.

7.5 NUGGET CREEK GROUP

This area, discussed in sections 5-3 and 6-4 is of interest by virtue of the small zinc showing and the similarity of its structural position to that of the Northeast Copper Zone/Fortuna. There is a moderately strong zinc anomaly in soils just north of the showing.

No geophysics has ever been done in this area, and as in most other target areas a VLF survey followed by a vector pulse survey in selected areas should be the next step. About 7 1/2 km of VLF followed by 3 km of vector pulse would be needed.

SUMMARY AND CONCLUSION

The Mt. Sicker property is underlain by mid to upper Paleozoic volcanics and volcano sediments of the Sicker Group. The volcanics range in composition from the felsic to andesitic. Most of the felsic volcanics are now sericite quartz schists, sometimes containing feldspar phenocrysts and/or quartz augen.

Andesitic rocks range from chlorite schists to comparatively massive andesite.

Sicker group sediments are usually tuffaceous and fine to very fine grained, though a few conglomerates exist.

The volcanics and sediments were intruded by wide gabbro dikes, probably cross-cutting the original layering at a low angle. The entire assemblage was later folded and metamorphased to chlorite-actinolite grade.

An old mine on the property, most recently operated as the Twin J during and just after World War II produced about 300,000 tons of massive sulphide copper zinc ore. Two orebodies occurred with graphite schist near a volcanic sedimentary interface. They had the form of elongated, irregular deformed cylindroids, up to 10 m x 30 m in section and extending discontinuously over 500 meters east-west.

Current exploration targets include the possible eastward extension of the old orebodies and four geological/geochemical targets. Four hundred fifty meters of diamond drilling are proposed for the mine area, while the next stage of exploration on the other targets should be geophysical. Twenty-two kilometers of VLF survey and twelve and a half kilometers of vector pulse EM survey are proposed.

APPENDIX 1

LIST OF CLAIMS

RECORDED MINERAL CLAIMS	Record No.
CF Group #1	14150
2	14151
3	14152
4	14153
5	14154
6	14155
7	14156
8	14157
CF Group 13	14162
14	14163
15	14164
16	14165
17	14166
18	14167
Rocky #1	155
Rocky #2	156
Rocky #3	157
Rocky #4	158
Rocky #5	247
Rocky #6 Fr.	248
Acme Fr	254
Margret Fr.	272
Crown Granted Claims	Lot No.
Estelle	53-G
Westholme	54-G
Blue Bell	51-G
Moline Fraction	50-G
Acme	4-G
Tony	18-G
Hellena	47-G
Westholme Fraction	59-G
Dixie Fraction	21-G
Golden Rod	44-G
Donagan	18-G
XL	19-G
Donald	63-G
Muriel Fraction	108-G
Doubtful Fraction	87-G

Thelma Fraction	85-G
Imperial Fraction	86-G
Herbert Fraction	20-G
Phil Fraction	110-G
NT Fraction	43-G
Magic Fraction	41-G
Richard III	39-G
Key City	37-G
Lenora	35-G
Tyee	36-G
International Fraction	60-G

APPENDIX 2

STATISTICAL TREATMENT OF GEOCHEMICAL DATA

Geochemical soil sample data were treated statistically using a method described in Lepeltier, Claude; A Simplified Statistical Treatment of Geochemical Data by Graphical Representation; Economic Geology, Vol. 64, 1969, pp. 538-550.

In outline the method is as follows:

a) obtain analytical results for a particular element from as many samples as is practical

b) group these values into an adequate number of classes using a logarithmic class interval

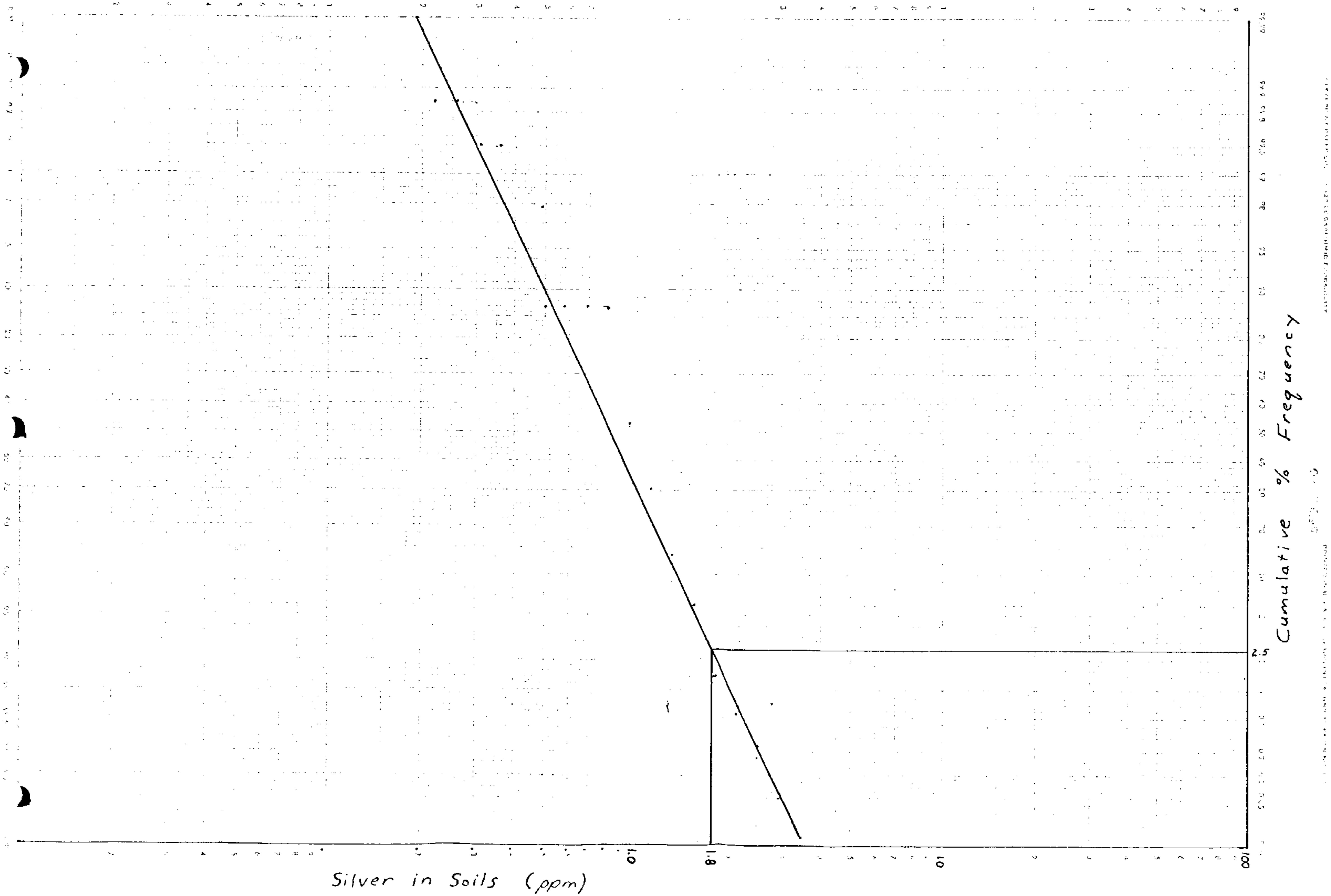
c) calculate the frequency of occurrence in each class

d) calculate the cumulative percent frequency for each class, working from highest values to lowest

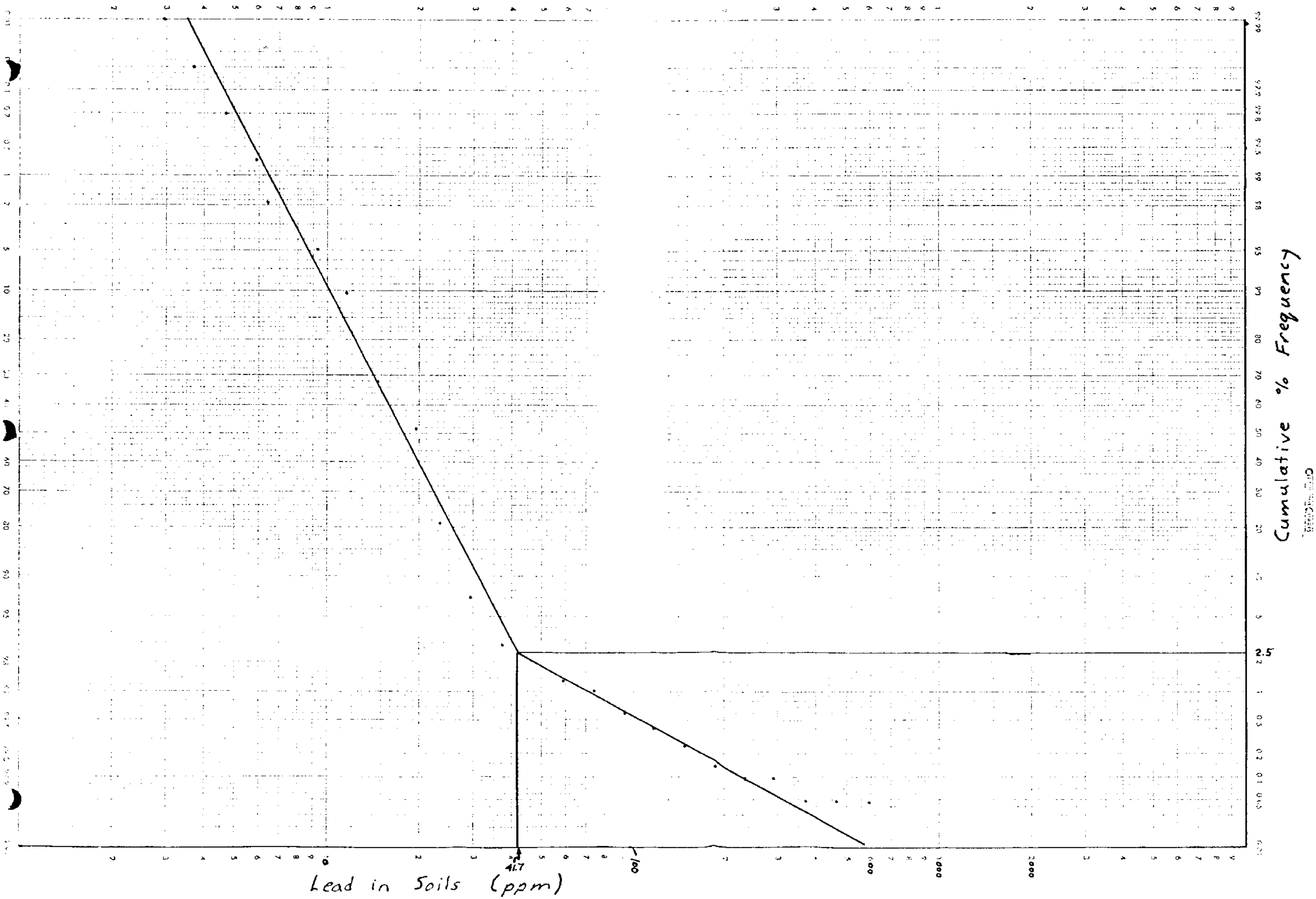
e) plot the cumulative percent frequencies as ordinates and the lower class limits as abscissa on logarithmic probability graph paper.

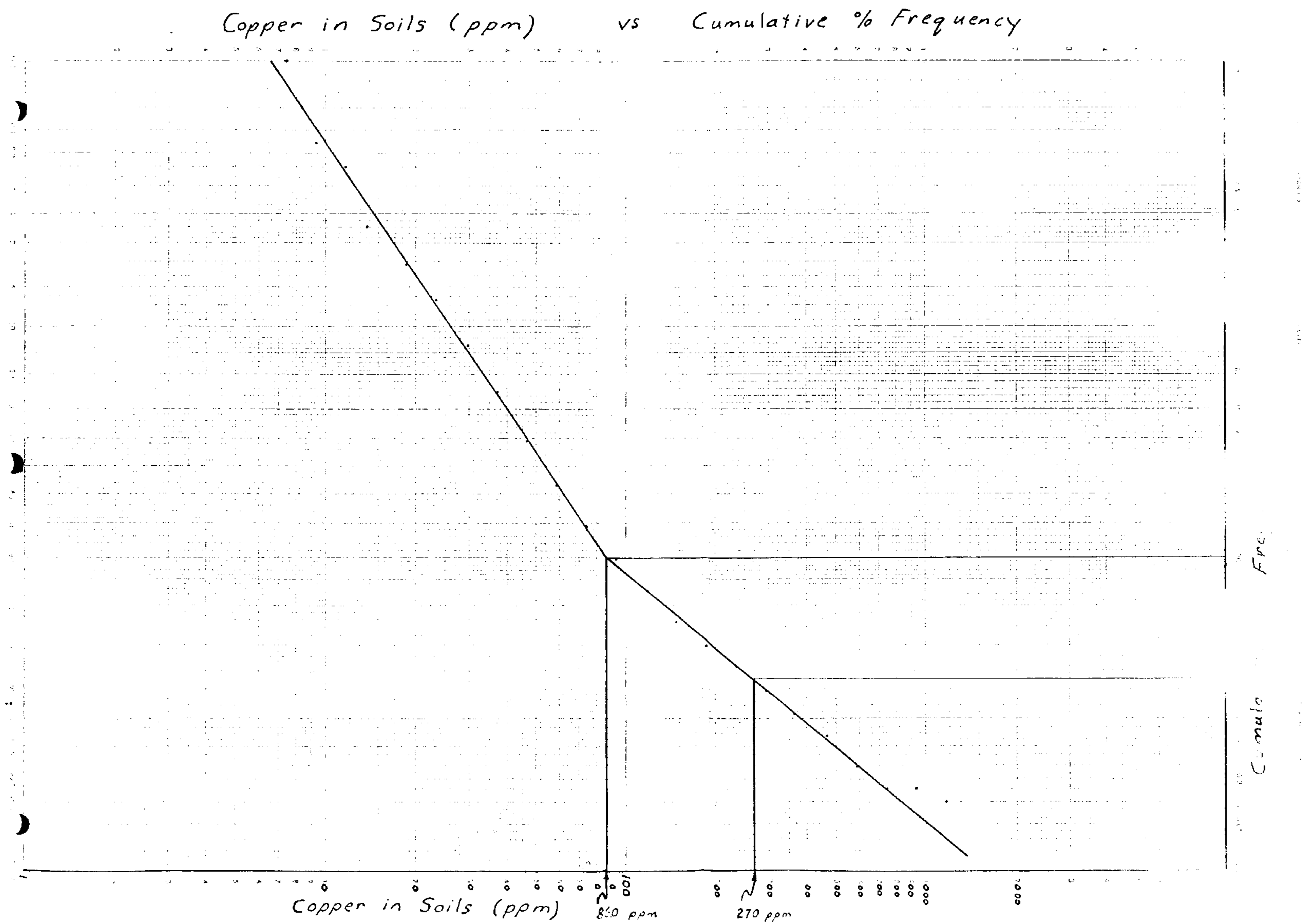
For Mt. Sicker, data for copper, lead, zinc and silver were treated this way, producing the accompanying graphs.

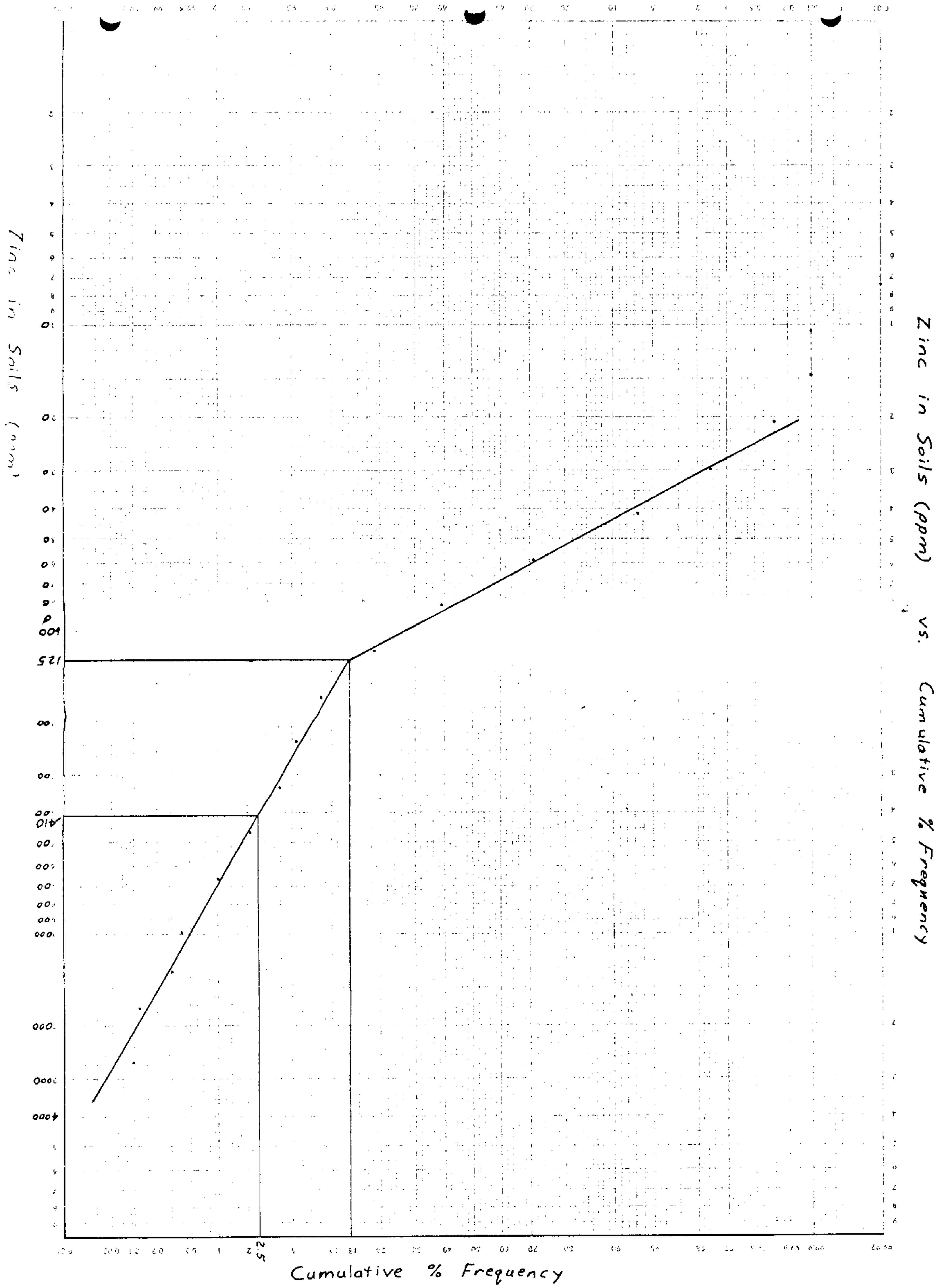
Silver in Soils (ppm) vs. Cumulative % Frequency



Lead Concentrations in Soils vs. Cumulative % Frequency




Copper in Soils (ppm) vs Cumulative % Frequency
Copper in Soils (ppm)
80 ppm
270 ppm
Fre
Cumula



Zinc in Soils (ppm) vs. Cumulative % Frequency
Zinc in Soils (ppm)
Cumulative % Frequency
125
410
2.5

COST STATEMENT

GEOLOGICAL MAPPING

May 9 - Sept. 6, 1979

Wages (3 geologists at different times)	
Field 35 days x $87. per day	$ 3,045.00
Office 12 days x $87. per day	1,044.00
Field 40 days x $87. per day	3,480.00
Office 9 days x $87. per day	783.00
Field 7 days x $104. per day	728.00
Office 1 day x $104. per day	104.00
Transportation	
1st vehicle (50% used for geology)	
4.9 months x $500. per month x 50%	1,225.00
gas	70.00
repairs	52.00
2nd vehicle (15% used for geology)	
3.7 months x $500. per month x 15%	277.50
gas	16.00
repairs	31.00
Rent (house in Duncan used as office and base. Estimate over 4.9 months, 35% of use for geological mapping)	
4.9 months x 35% x $350. per month	600.25
Stationery and Maps	21.58
Equipment	60.65
Groceries	71.63
Report	
Writing and drafting	
1.5 days x $87. per day	130.50
2 days x $104. per day	208.00
Map reproduction (est.)	25.00
Typing (est.)	25.00
TOTAL FOR GEOLOGICAL MAPPING	$11,998.11

SOIL GEOCHEMISTRY

(June 15 - Oct. 5, 1979)

Wages (5 people at different times)	
Field 2 days x $46.50 per day	$ 93.00
Field 7 days x $55.50 per day	388.50
Office 1 day x 55.50 per day	55.50
Field 27 days x $49.00 per day	1,323.00
Office 1 day x 49.00 per day	49.00
Field 24 days x $49.00 per day	1,176.00
Office 6 days x 49.00 per day	294.00
Field 2 days x $87.00 per day	174.00
Supervision 3 days x $104.00 per day	312.00
Transportation	
1st vehicle (50% used for geochemistry)	
3.7 months x $500. per month x 50%	925.00
gas	53.00
repairs	52.00
2nd vehicle (15% used for geochemistry)	
3.7 months x $500. per month x 15%	277.50
gas	16.00
repairs	31.00
Analyses - 2837 samples x $3.95 per sample	11,206.15
Freight (Duncan - Vancouver by truck)	114.90
Stationery and Maps	4.51
Equipment	61.41
Groceries	99.39
Rent (house in Duncan used as office and base. Estimate over 3.7 months, 30% of use for geochemistry)	
3.7 months x $350. per month x 30%	388.50
Report	
Writing and drafting	
1.5 days x $87. per day	130.50
2 days x $104. per day	208.00

Map Reproduction (est).	75.00
Typing (est.)	25.00
Line (cutting [17 km.] Sept. 7 - Sept. 25, 1979	
10 days x $49. per day	490.00
10 days x $49. per day	490.00
bonus, 17 km. x $50. per km.	850.00
TOTAL FOR SOIL GEOCHEMISTRY	$19,362.86

APPORTIONMENT OF COSTS

Geological Mapping (1979 total 453.5 hectares)

Rocky Group (includes Acme Fr.) (306.7 hectares)	
$11,998.11 x 306.7/435.5 =	$ 8.114.27
CF Group (includes crown grants) (82.4 hectares)	
$11,998.11 x 82.4/453.5 =	2,180.03
Margaret Fr. (1.4 hectares)	
$11,998.11 x 1.4/453.5 =	37.04 ✓
not on claims	
$11,998.11 - 8,114.27 - 2,180.03 - 37.04 =	1,666.77

Soil Geochemistry (1979 total 2635 samples)

Rocky Group (includes Acme Fr.) (977 samples)	
$19,362.86 x 977/2635 =	7,179.32
CF Group (includes crown grants) (1376 samples)	
$19,362.86 x 1376/2635 =	10,111.31
Margaret Fr. (15 samples)	
$19,362.86 x 15/2635 =	110.23 ✓
Not on claims	
$19,362.86 - 7,179.32 - 10,111.31 - 110.23	1,962.00

7. STATEMENT OF QUALIFICATIONS

I, Gordon J. Allen, of Cowichan Bay, British Columbia, hereby certify that:

1. I am a graduate of the University of British Columbia, holding a Bachelor of Science degree in Geology (1975).

2. I am a geologist employed by S.E.R.E.M. Ltd. of 505 - 850 West Hastings Street, Vancouver, B.C.

3. I have been practising my profession for the past four years and have been active in the field of mineral exploration during the past nine years.

4. I have no financial interest in the claims covered by this report, in Mount Sicker Mines Ltd. or in S.E.R.E.M. Ltd.

Dated at Duncan, B.C. this 14th day of December, 1979.

Gordon J. Allen
Geologist

STATEMENT OF QUALIFICATIONS

I, Christiaan G. Van Houten of North Cowichan, British Columbia, hereby certify that:

1. I am a graduate of the University of Amsterdam, the Netherlands, holding the degree of Doctorandus (approximately equivalent to MSc) in geology (1969).

2. I am a geologist employed by S.E.R.E.M. Ltd. of 505 - 850 West Hastings Street, Vancouver, B.C.

3. I have worked in the field of exploration for four years.

4. I have no financial interest in the claims covered by this report or in S.E.R.E.M. Ltd.

DATED at Duncan, B.C. this 13th day of December, 1979.

Christiaan G. Van Houten
Geologist

7. STATEMENT OF QUALIFICATIONS

I, Peter A. Ronning of Duncan, British Columbia, hereby certify that:

1. I am a graduate of the University of British Columbia, holding the degree of Bachelor of Applied Science in Geological Engineering (1973).

2. I am a geologist employed by S.E.R.E.M. Ltd. of 505-850 West Hastings Street, Vancouver, B.C.

3. I have worked in the field of mineral explortaion for six years.

4. The work described in this report was carried out under my supervision.

5. I have no financial interest in the claims covered by this report or in S.E.R.E.M. Ltd.

Dated at Duncan, B. C. this 18th day of December, 1979.

P. Ronning

Peter A. Ronning
Geologist

LEGEND:

1a	QUARTZ SCHIST	1a — Sericite
1b		1b — Sericite, Augen
1c		1c — Chlorite, Sericite
1d		1d — Chlorite, Sericite, Augen
2a	SCHIST	2a — Sericite
2b		2b — Sericite, Augen
3a	CHLORITE SCHIST	3a — Chlorite
3b		3b — Sericite, Chlorite
4a	GRAPHITIC SCHIST	4a — Black Graphite Schist
4b		4b — Graphitic Sericite Schist
5a	FELDSPAR CRYSTAL TUFFS (includes some flows)	5a — Rhyolitic to Dacitic
5b		5b — Andesitic
8	DACITE (includes some tuffs)	
12	QUARTZ FELDSPAR PORPHYRY	
14a	GABBROIC INTRUSION	14a — Gabbro
14b		14b — Diabose
14c		14c — Diorite
14d		14d — Schistose variation of 14a,b or c
15a	ANDESITE	15a — Andesite
15b		15b — Schistose Andesite
17	SICKER GROUP SEDIMENTS	
18	NANAIMO GROUP SEDIMENTS	
19	INTERMEDIATE TO FELSIC PORPHYRITIC INTRUSIVE	

GEOLOGICAL BOUNDARY known, hypothetical

FACIES CHANGE

FAULT

DIAMOND DRILL HOLE

SHAFT, DRIFTS etc. ORE

SEREM LTD.

PROJECT: MOUNT SICKER

TITLE: GEOLOGICAL CROSS-SECTION

D—D' FACING TRUE EAST

NTS: 92B 13	SCALE: 1 : 5000	DATA: P.R., C.vH., G.A.	FIGURE 1
		DRAWN: P.R., D.G.D.	
		DATE: NOV. 79	

LEGEND:

1a	QUARTZ SCHIST	1a — Sericite
1c		1c — Chlorite, Sericite
1d		1d — Chlorite, Sericite
2c	SCHIST	2c — Chlorite, Sericite
3a	CHLORITE SCHIST	
5a	FELDSPAR CRYSTAL TUFFS (includes some flows)	5a — Rhyolitic to Dacitic
5b		5b — Andesitic
8	DACITE (includes some tuffs)	
9	RHYOLITE	
10	CRYPTOCRYSTALLINE QUARTZ	
12	QUARTZ FELDSPAR PORPHYRY	
14a	GABBROIC INTRUSION	14a — Gabbro
14b		14b — Diabase
15a	ANDESITE	
18	NANAIMO GROUP SEDIMENTS	

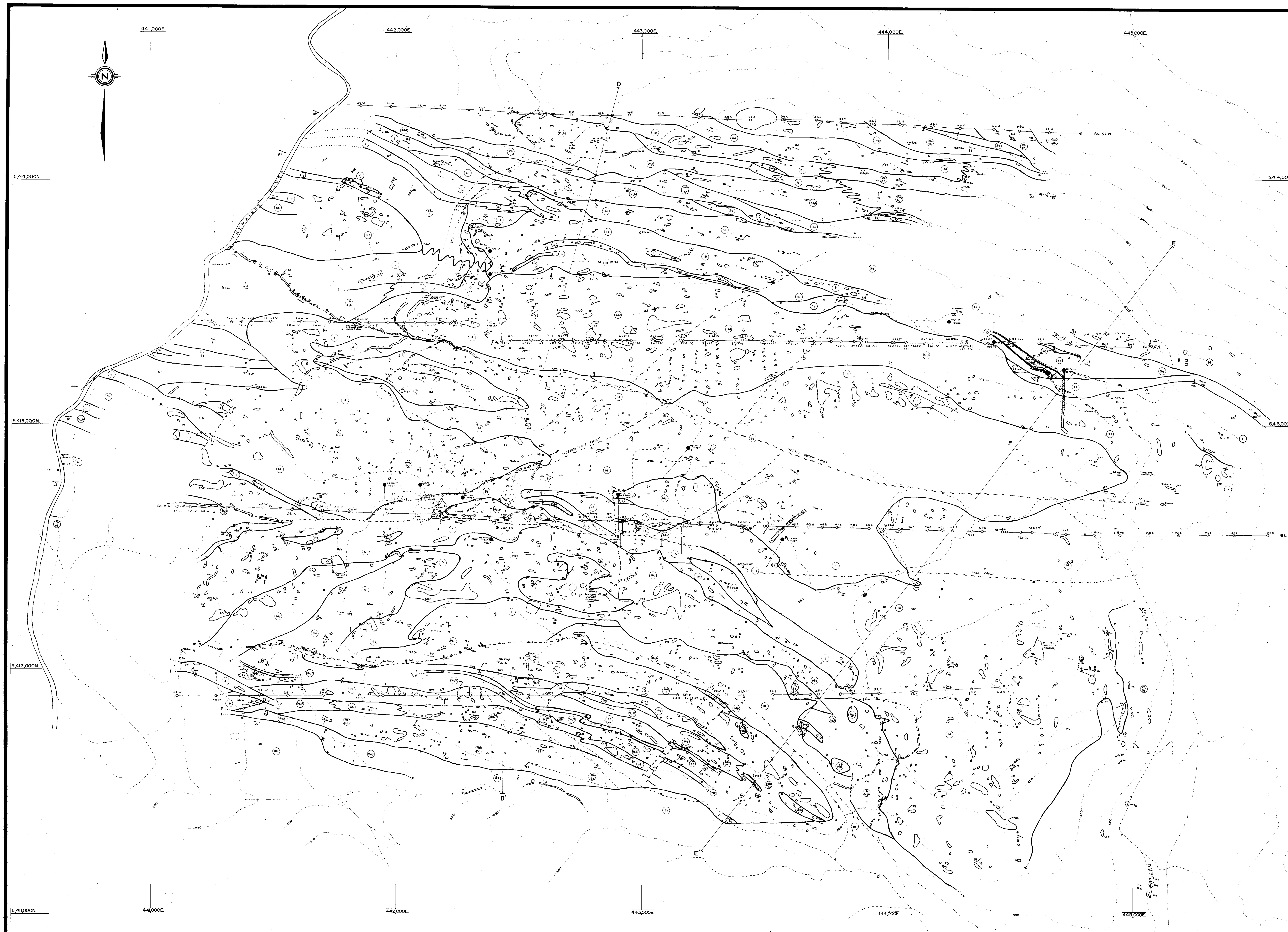
GEOLOGICAL BOUNDARY known, hypothetical, including historical projections
FAULT
DIAMOND DRILL HOLE projected to section
SCHISTOSITY
SHAFT projected to section

SEREM LTD.

PROJECT: MOUNT SICKER

TITLE: GEOLOGICAL CROSS-SECTION E—E' FACING 130° TRUE

NTS: 92B 13	SCALE: 1 : 5000	DATA: PR, CvH, GA.	FIGURE 2
		DRAWN: PR, DGD.	
		DATE: NOV. 79	



LEGEND: MAP SYMBOLS

- Geological boundary
- Facies change
- Fault
- Schistosity, Joint
- Bedding
- Diamond drill hole
- SEREM drill hole
- Shaft
- Adit
- Trench
- CP Chalcopyrite
- Zn Positive Zinc test
- Contour line (50 meter intervals)
- Creek
- Road
- Outcrop - Rock Type As Shown For Lithologic Zone Unless Otherwise Indicated

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
No 7875

SEREM LTD.

PROJECT: MOUNT SICKER

TITLE:

GEOLOGY

NTS:	SCALE: 1 : 5000	DATA: FIELD	FIGURE
92B 13	50m 0 100 200m	DRAWN: G.A., D.G.D.	
		DATE: DEC. 79	

LITHOLOGY

1a	QUARTZ SCHIST	a — Sericite
1b		b — Sericite Augen
1c		c — Chlorite Sericite
1d		d — Chlorite Sericite Augen
2a	SCHIST	a — Sericite
2b		b — Sericite Augen
2c		c — Chlorite Sericite
2d		d — Chlorite Sericite Augen
3a	CHLORITE SCHIST	a — Chlorite
3b		b — Sericite Chlorite
4a	GRAPHITIC SCHIST	a — Black Graphite schist
4b		b — Graphitic Sericite Schist
5a	FELDSPAR CRYSTAL TUFFS (includes some flows)	a — Rhyolitic to Dacitic
5b		b — Andesitic
6	META-QUARTZITE	
7	SLATE/PHYLLITE	
8	DACITE (includes some tuffs)	
9	RHYOLITE	
10	CRYPTOCRYSTALLINE QUARTZ	
11	HORNFELLS	
12	QUARTZ FELDSPAR PORPHYRY	
13	GRANITOID INTRUSION	
14a	GABBROIC INTRUSION	a — Gabbro
14b		b — Diabase
14c		c — Diorite
14d		d — Schistose derivations of a,b or c
15	ANDESITE a - Massive b - Schistose	
16	LATE RHYOLITE/LATITE	
17a	SICKER GROUP SEDIMENTS	a — Finegrained siliceous, tuffaceous sediments
17b		b — Andesitic tuffaceous sediments
17c		c — Siliceous argillite
17d		d — Banded chert
17e		e — Pebble to cobble conglomerate
18a	NANAIMO GROUP SEDIMENTS	a — Breccia, conglomerate
18b		b — Lithic wacke
18c		c — Mudstone, shale
19	INTERMEDIATE TO FELSIC PORPHYRITIC INTRUSIVE	

N
CHEMAINUS RIVER
NUGGET CREEK GROUP
C.F. GROUP (MT. SICKER OPTION)
CROWN GRANTED CLAIMS (MT. SICKER OPTION)
ROCKY #5
ROCKY #2
ROCKY #6 FR.
ROCKY #1
ROCKY #4
ROCKY #3
ACME FR.
MARGARET FR.
MS
MS
LEGEND:
20 SOIL SAMPLE SITE WITH CORRESPONDING LEAD CONTENT (PPM)
CLAIM BOUNDARY
ROAD
SHAFT
ADIT
TRENCH
MS CLAIMS NOT HELD BY SEREM
7875
SEREM LTD.
PROJECT: MT. SICKER
TITLE: MT. SICKER SOIL GEOCHEMISTRY
PPM LEAD
NTS: 92 B 13
SCALE: 1 : 5,000
DATE: JAN. 1980
FIGURE


N
CHEMAINUS RIVER
NUGGET CREEK GROUP
CF GROUP (MT. SICKER OPTION)
ROCKY #5
ROCKY #2
CROWN GRANTED CLAIMS (MT. SICKER OPTION)
ROCKY #6 FR.
ACME FR.
MARGARET FR.
MS
MS
ROCKY #1
ROCKY #4
ROCKY #3
LEGEND:
SOIL SAMPLE SITE WITH CORRESPONDING SILVER CONTENT (PPM x 10)
CLAIM BOUNDARY
ROAD
SHAFT
ADIT
TRENCH
MS CLAIMS NOT HELD BY SEREM
MINERAL RESOURCES BRANCH ASSESSMENT REPORT
7875
SEREM LTD.
PROJECT: MT. SICKER
TITLE: MT. SICKER SOIL GEOCHEMISTRY PPM x 10 SILVER
NTS: 92 B 13
SCALE: 1:5,000
DATA:
DRAWN:
DATE: JAN., 1980
FIGURE


CHEMAINUS RIVER
N
NUGGET CREEK GROUP
CF GROUP (MT. SICKER OPTION)
CROWN GRANTED CLAIMS (MT. SICKER OPTION)
ROCKY #5
ROCKY #2
ROCKY #6 FR.
ACME FR.
MARGARET FR.
MS
ROCKY #1
ROCKY #4
ROCKY #3
LEGEND:
·100 SOIL SAMPLE SITE WITH CORRESPONDING COPPER CONTENT (PPM)
CLAIM BOUNDARY
ROAD
SHAFT
ADIT
TRENCH
CLAIMS NOT HELD BY SEREM
MINERAL RESOURCES BRANCH ASSESSMENT REPORT
7875
SEREM LTD.
PROJECT: MT. SICKER
TITLE: MT. SICKER SOIL GEOCHEMISTRY
PPM COPPER
NTS: 92B13
SCALE: 1 : 5,000
DATA:
DRAWN: D.R., C.V.R., G.A.
DATE: JAN., 1980
FIGURE


N
CHEMAINUS RIVER
NUGGET CREEK GROUP
CF GROUP (MT. "SICKER" OPTION)
CROWN GRANTED CLAIMS (MT. SICKER OPTION)
ROCKY #5
ROCKY #2
ROCKY #6 FR.
ACME FR.
MARGARET FR.
MS
ROCKY #1
ROCKY #4
ROCKY #3
LEGEND:
·60 SOIL SAMPLE SITE WITH CORRESPONDING ZINC CONTENT (PPM)
CLAIM BOUNDARY
ROAD
SHAFT
ADIT
TRENCH
MS CLAIMS NOT HELD BY SEREM
MINERAL RESOURCES BRANCH ASSESSMENT REPORT
7875
SEREM LTD.
PROJECT: MT. SICKER
TITLE: MT. SICKER SOIL GEOCHEMISTRY
PPM ZINC
NTS: 92 B 13
SCALE: 1 : 5,000
DATA:
DRAWN: P.R., C.K.K., G.A.
DATE: JAN., 1980
FIGURE