104-B-1

Property Evaluation: Silbak Premier Mine

Stewart, B.C.

(PN 003)

#11-003-81 Nov., 1981 T. Chandler

SILBAK PREMIER MINE Property Evaluation 104-B-1
Stewart, B.C. PN 003 T. Chandler Nov. 1981 B.C.

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SMH / ~~WBGW~~ ~~WDH~~ / ~~SEC~~

~~HPS~~

later

Number: 998

Location: Stewart, British Columbia NTS 104-B-1

Keywords - Commodities: Au - Ag - Base metals

Property Name: Silbak Premier Mine

998

Category:

Project No:

Should this document be computer filed? Yes ✓ No ____

Should this document have restricted circulation? Yes ____ No ✓

If so, for how long? Until ____________ or Indefinitely ____

6415 - 64th Street, Delta, B.C.

INTER-OFFICE MEMORANDUM

DATE: December 3, 1981

TO: C.M.H. Jennings, B.D. Simmons

COPIES TO: H.R.S. Stockford, M.J. Knuckey

FROM: J.B. Gammon

SUBJECT: SILBAK PROPERTY

998

RECEIVED

DEC 7 1981

GEOLOGY DEPT.

Please find attached, for your files, a summary of data gathered during our recent examination of the British Silbak Premier property at Stewart, B.C.

Pam Seale/per

998

Property Evaluation: Silbak Premier Mine

Stewart, B.C.

(PN 003)

Report # 11-003-81

November, 1981

T. Chandler

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INTRODUCTION

In early August of this year British Silbak Premier Mines Ltd. invited option submissions from several major mining companies in an attempt to reactivate their Silbak Premier mine - a gold-silver-base metal property north of Stewart, B.C.. British Silbak had recently conducted a surface exploration and underground development programme costing nearly $3.3 million including $1.5 million in equipment at cost. The programme did little to improve the property's immediate status and left British Silbak $1.5 million in debt. A tentative deadline for option submissions of Sept. 30, 1981 was proposed.

Discussions with Silbak's management, initiated by J.B. Gammon, resulted in a visit to the property by C.M.H. Jennings, J.C. Cowan, J.B. Gammon, B.W. Downing and I.L. Elliott, in early August. It was decided that the property merited a comprehensive evaluation with special regard to a possible volcanogenic origin for the deposit and the probability of extending known mineralization. The writer became involved with the appraisal in mid-August and visited the property briefly at that time. A second field trip in early September with S. Zastavnikovitch allowed collection of soil geochemical samples and acquisition of the most recent Silbak data. The contents of this report are based on that data, research of the available literature, records stored in Silbak's Vancouver office and miscellaneous data from various sources.

The results of the property evaluation have indicated good exploration potential for discovery of additional mineralization. A volcanogenic origin for the deposit seems most probable with the known ore zones occurring in a parallel arcuate pattern suggestive of a plunging synclinal fold structure. Due to poor knowledge of the property geology any new exploration must be directed on a "grass roots" basis with the potential target being additional ore zones parallel to the suggested structure.

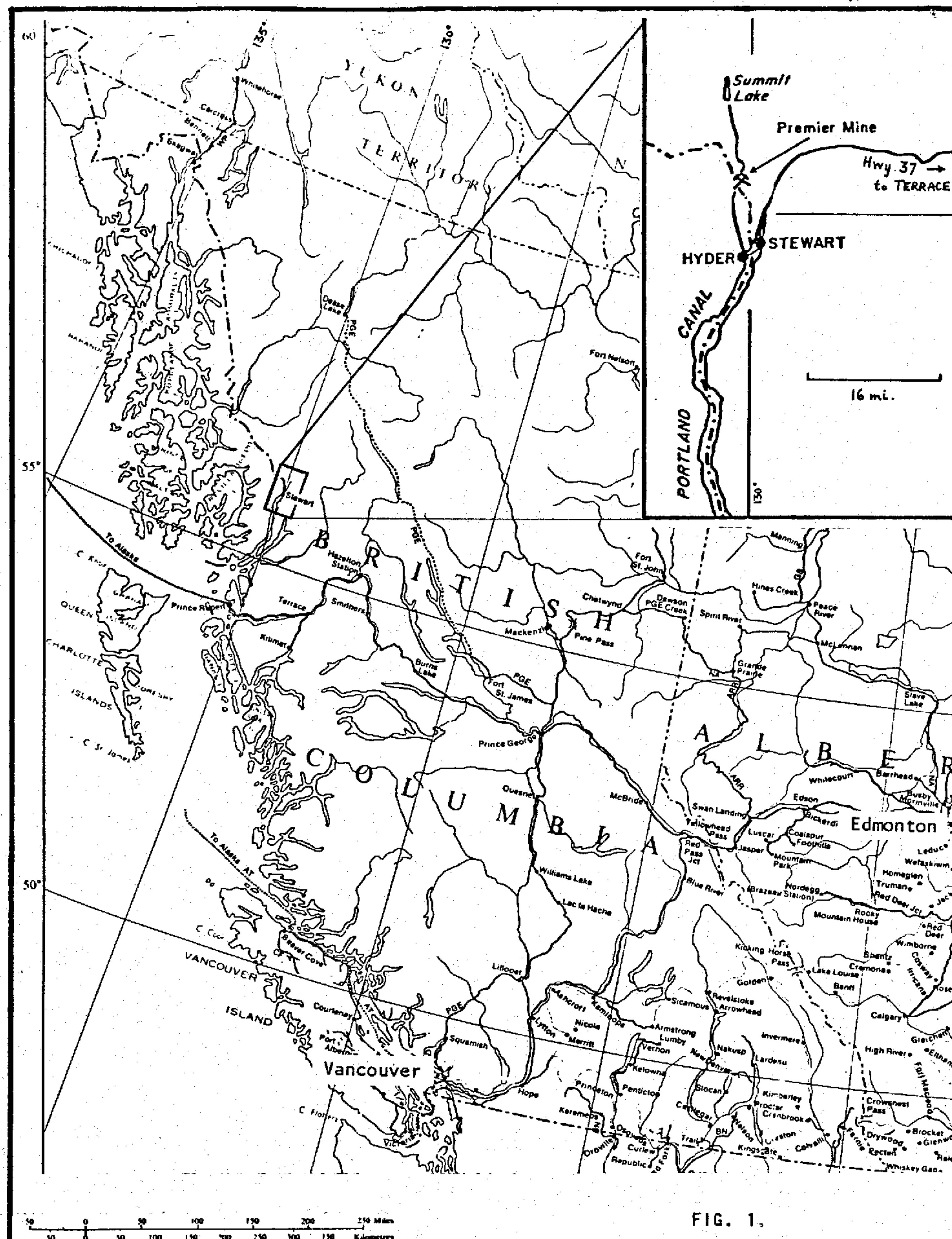
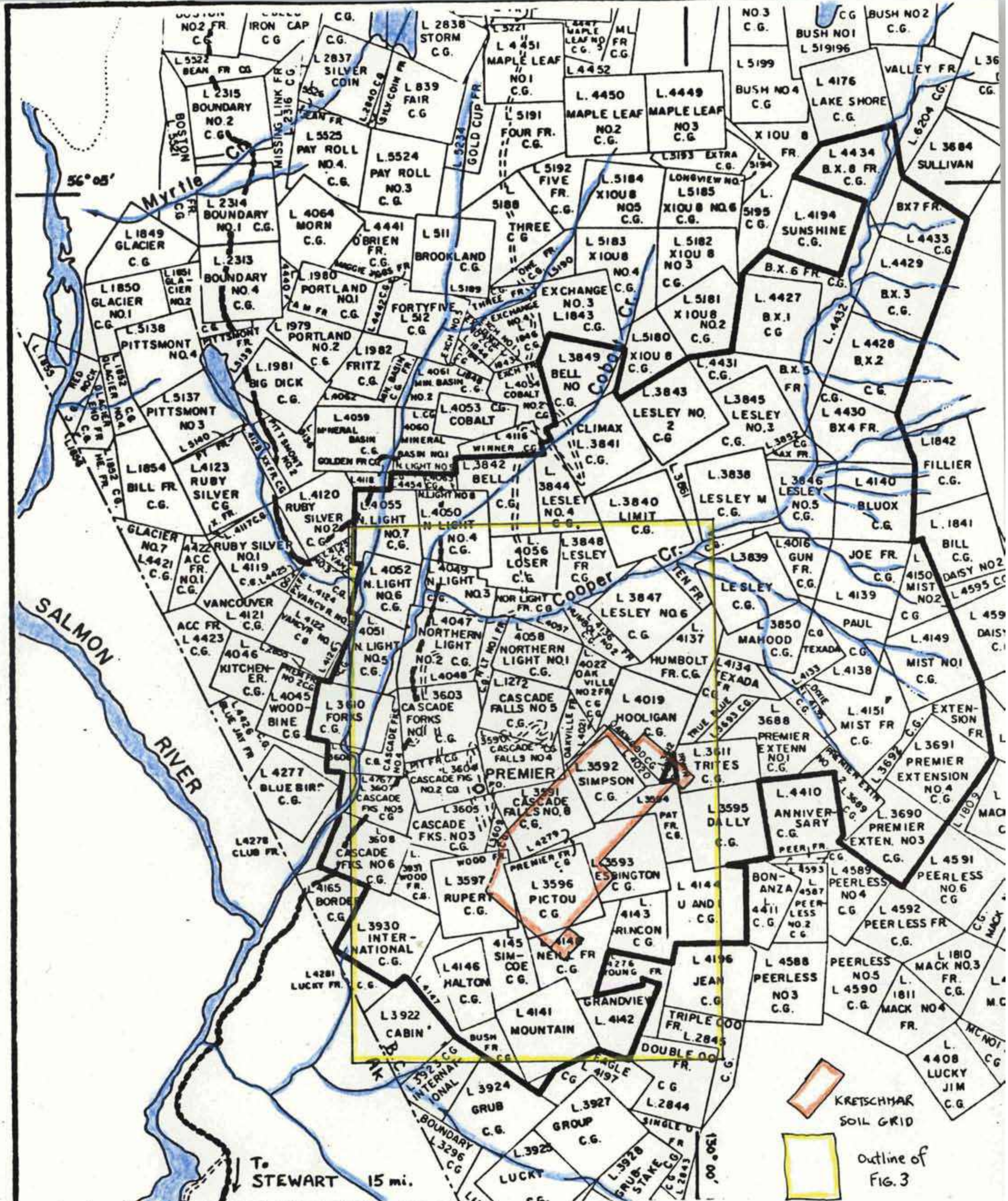


FIG. 1.

LOCATION MAP

Stewart, B.C.



SCALE 0 1500 3000 4500 FEET

After Grove (1971) Fig. 15B

FIG. 2.

British Silbak Premier Mines Ltd

CLAIM MAP

NTS 104 A/4W, 104 B/1E

Stewart, B.C.

LOCATION, ACCESS, TOPOGRAPHY:

(Fig 1, 2 and 3) The Silbak Premier mine property is located near the Alaskan border, 26 km (16 miles) north of the town of Stewart, B.C.. The mine is easily accessible via the Granduc all-weather road. The property consists of 87 Crown-granted claims totalling 1202.7 hectares (2971.94 acres). Outside interests hold one very small claim fraction. The present camp and 6th level tunnel are located at the 780 ft. (237 m) elevation beside the Granduc road. The main surface workings (Glory Hole area) occurs at approx. 2200 ft. (671 m) on the western slope of the Bear River Ridge. Slopes are generally steep and thickly overgrown with dense timber and low bush cover. Deeply cut ravines are common. The snow-free season generally covers a 4 month period from late May to late September. Surface exploration is not feasible in the winter months due to extremely heavy snowfall recorded up to 25 feet, (8 m).

EXPLORATION AND PRODUCTION HISTORY

The original prospect was probably located about 1910 by the discovery of gossanous outcrop at the present Glory Hole site. Several of the principal claims were staked at this time. To 1916 minor tunnel work was carried out on the No. 1 and No. 2 levels and several mining syndicates were formed and later reorganized.

1916 - 1919 - An exploration group headed by Trites, Wood and Wilson bonded the property, discovered bonanza high-grade ore, and began shipments to Tacoma.

1919 - ASARCO acquired a 52% interest in the property for $1 million cash. High grade ore shipments continued. The B.C. Silver group was incorporated on adjoining claims.

1921 - ASARCO began milling operations at the Premier mine.

1922 - 1924 - Exploration continued on the B.C. Silver claims, ore shipments started in 1924.

1935 - Silbak Premier Mines Ltd. was incorporated from the merger of Premier Gold Mining Co., B.C. Silver Mines Ltd. and Sebakwe and District Mines Ltd. The latter two companies were controlled by Sebakwe Mining Co. of London who acquired controlling interest in the property after the merger.

1953 - 1956 - Low metal prices forced closure of the mine in 1953. H.L. Hill and Assoc. continued development and rehabilitated the property and mill in 1956. The mill was destroyed by a fire shortly after and operations were suspended.

1958 - The Premier Border group of 11 Crown-granted claims were purchased.

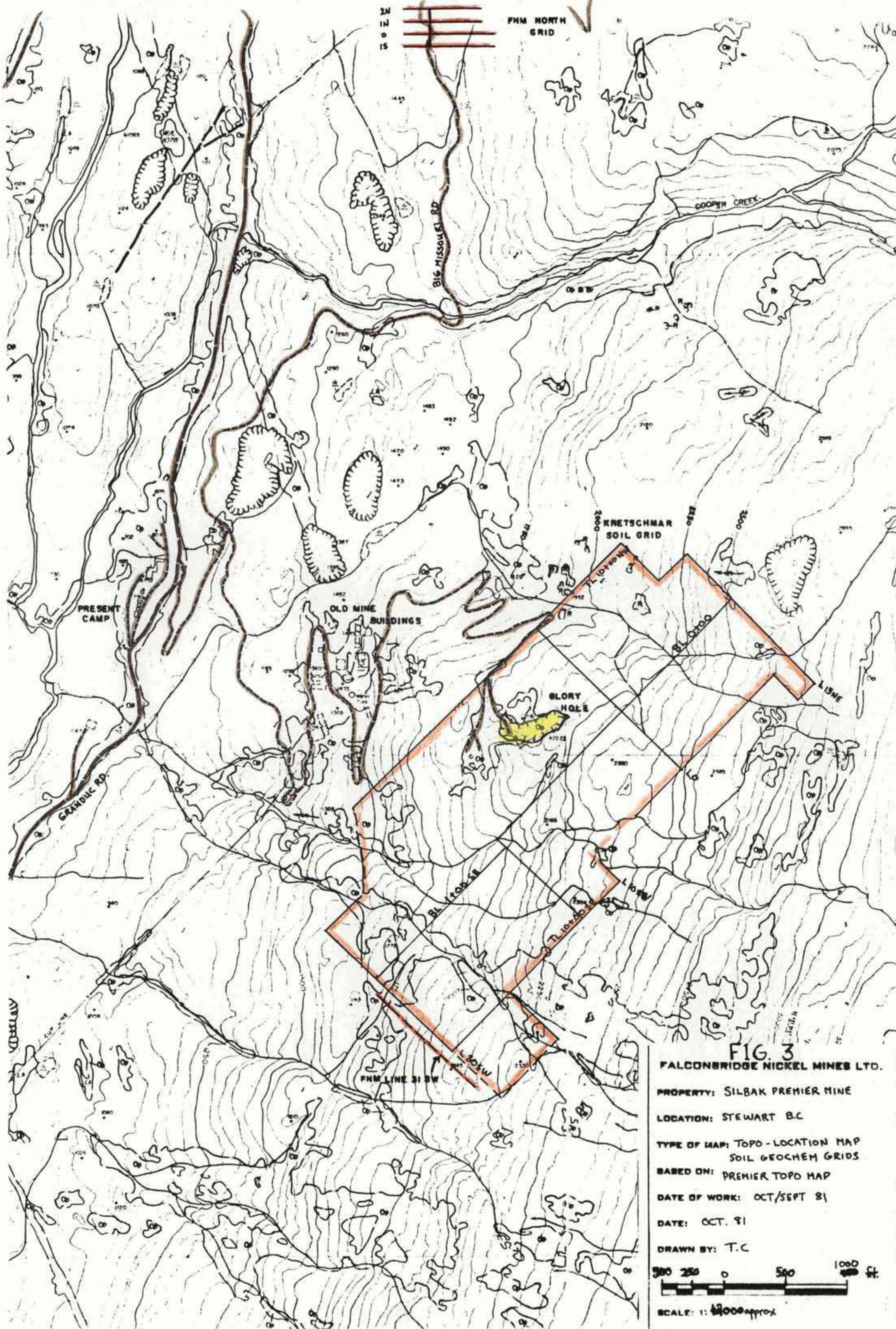


FIG. 3

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: SILBAK PREMIER MINE

LOCATION: STEWART B.C

TYPE OF MAP: TOPO - LOCATION MAP SOIL GEOCHEM GRIDS

BASED ON: PREMIER TOPO MAP

DATE OF WORK: OCT/SEPT 81

DATE: OCT. 81

DRAWN BY: T.C

500 250 0 500 1000 ft.

SCALE: 1: 12000 approx

1959 - A one year lease was granted to Bermah Mines Ltd. on the upper levels of the main Premier zone. The Lessees discovered a high grade ore shoot on the south wall of the Glory Hole and shipped 2736 tons of ore averaging 6.08 oz/ton Au, 144 oz/ton Ag and 10% combined Pb +Zn.

1960 - 1965 - Upon termination of the lease, Silbak Premier continued mining the high grade discovery and developed deeper levels of the mine. Reserves justified construction of a new 100 ton/day mill which was completed in 1964.

1965 - 1968 - Bralorne Pioneer Mines Ltd. were offered operating management and continued production until closure of the mine in 1968 due to low metal prices and low-grade reserves.

1969 - 1971 - A 5 year option was undertaken by the Granby Mining Company Ltd. who carried out a large scale I.P. survey on the western half of the property, did geological mapping and some drilling (whereabouts unknown to FNM).

1979 - R. Seraphim was commissioned as consultant to British Silbak and recommended an exploration programme to re-examine the property as a volcanogenic type deposit.

1980 - D & U Kretschmar were contracted to carry out a large soil sampling, mapping and surface drilling programme in the area south and east of the Glory Hole (Fig 3)

1980 - 1981 - Derry, Michener and Booth were hired to rehabilitate the 6th level workings and define new ore reserves with a drill programme in two areas on this level. Upon termination of the Kretschmar contract, DMB also carried out surface drilling for ore at depth in the Premier Border/Northern Light zone and attempted to delineate a north-west extension of the main ore zone from surface drilling. The DMB resident geologist, H. Dowhaluk, completed his work on the property in early September.

REGIONAL GEOLOGY:

The geology of the Stewart Area has been described by several authors, principally G. Hanson of Canada Department of Mines, 1935, and more recently by E.W. Grove in Bulletin 58 of the B.C. Department of Mines, 1971. As a guide, Grove's regional geology map has been reduced and compiled as shown on Fig 4. The map also outlines the Silbak Premier property and the location of numerous other mines and prospects in the region.

SEDIMENTARY AND VOLCANIC ROCKS:

The oldest rocks belong to the Hazelton assemblage of Lower to Mid-Jurassic age. These rocks consist predominantly of sediments and volcanic epiclastics of overall andesitic composition. Sedimentary types range from dirty sandstones/wackes to coarse conglomerates; volcanics range from f.g. andesitic tuffs to volcanic breccias. Porphyritic

LEGEND

SEDIMENTARY & VOLCANIC ROCKS

BOWSER ASSEMBLAGE

Mid to Upper Jurassic

- B1 Dark greywacke, pebble cglm. + siltstone
- B2 Dark siltstone with greywacke chert pebble cglm; lmst
- B3 Red & green cglm and sandstone; lithic tuffs, rhyolite, lmst
- B4 Mostly red breccia, cglm, sandstone

HAZELTON ASSEMBLAGE

Lower to Mid Jurassic

- H1 Green volcanic sandstones, cglm., siltstone.
- H2 Red and green volcanic breccias with cglm. and sandstone.
- H3 Deformed zones of mylonites and cataclasites after Hazelton volcanics

IGNEOUS - COAST CRYSTALLINE BELT

Cenozoic

- bcm Bitter Creek qtz monzonite and granodiorite
- gcd Glacier Creek augite diorite and equivalent.
- hsb Hyder qtz monzonite; Summit Lake diorite; Boundary granodiorite

Mesozoic

- tcg Texas Creek granodiorite and equivalent

DYKE ROCKS

Cenozoic

- Hornblende diorite + quartz diorite lamprophyres
- Diorite, hornblende diorite Bear Pass area.
- Qtz monzonite, granodiorite, + qtz diorite (porphyritic)
- Premier granodiorite porphyry

▲8 STEWART MINES/PROSPECTS

●4 HYDER MINES/PROSPECTS

Major sites are named.

Streams, rivers, lakes.

Snow cover

glacier

Modified after Grove 1971

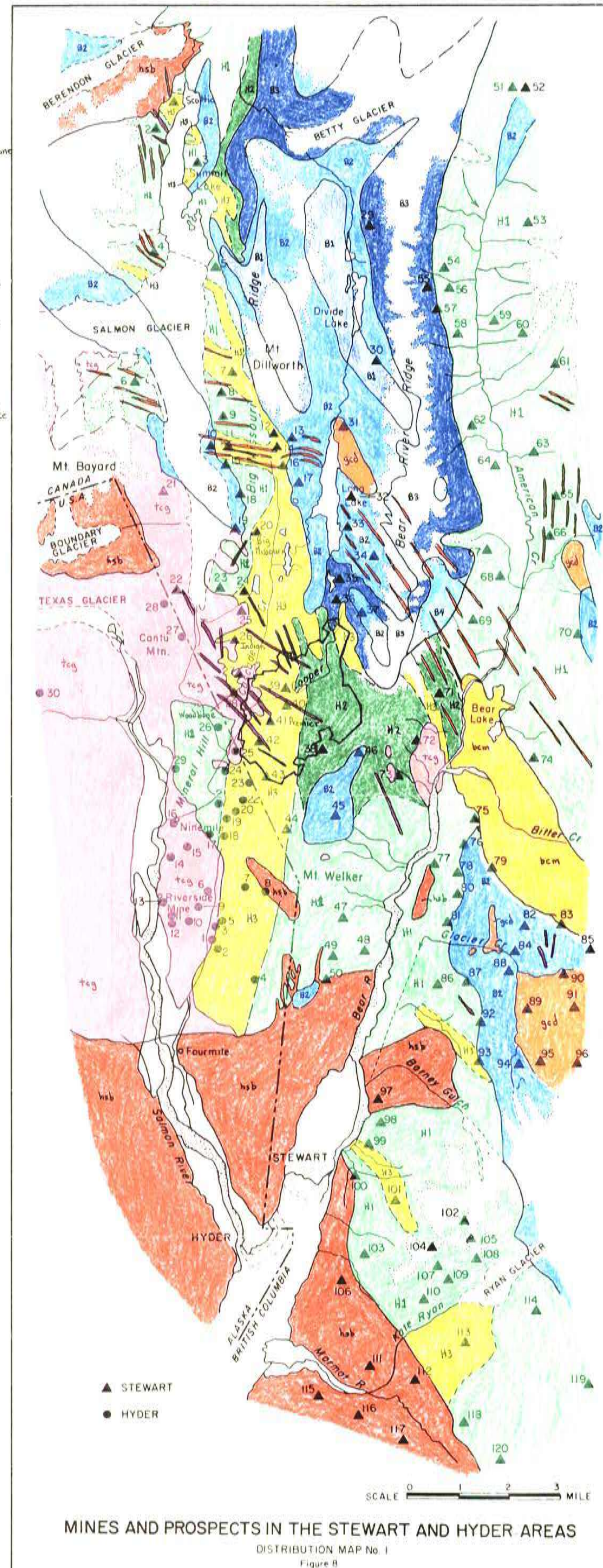


Figure 8

FIG. 4

REGIONAL GEOLOGY OF STEWART AREA AND MINERAL PROSPECT MAP

MODIFIED AFTER GROVE (1971) INTERPRETATION

T.C. Sept 1981

varieties are common. Grove, however, interprets the phenocrysts as recrystallized feldspar/hornblende "clasts". In strong contrast to previous workers in the area, Grove has defined a belt of undifferentiated cataclasites, mylonites and schists derived from Hazelton volcanics on the eastern side of the Salmon River valley. The belt is believed to be the result of complex dynamic metamorphism and minor metasomatism on the volcanics during the intrusion of the adjacent igneous rocks of the Coast Crystalline Belt. It is significant perhaps, that the belt as delineated in Fig 4 bears a high proportion of mineral prospects and the majority of the important past and present producers. The Premier mine property sits astride the central portion of this deformation zone.

Unconformably overlying the Hazelton rocks is the Bowser Assemblage - a sequence of marine sedimentary and volcanic rocks of Mid to Upper Jurassic age. This assemblage is primarily composed of sandstones, silt-stones, pebble conglomerates and graywackes with minor rhyolitic flows, limestones and red lithic tuffs directly overlying the (uppermost) Hazelton units. The stratigraphy of both assemblages indicates subaqueous shallow marine volcanism followed by basin subsidence and marine sedimentation.

PLUTONIC ROCKS:

The above Mesozoic rocks have been intruded by a variety of plutonic rocks of the Coast Crystalline Belt. At least two episodes of intrusion have been demonstrated, ranging from the Mesozoic Texas Creek grano-diorite and related rocks to the Cenozoic Hyder quartz monzonite and equivalents, Bitter Creek qtz monzonite and Glacier Creek augite diorite and equivalents. The size of the intrusions ranges from discrete dikes and stocks to large batholiths. Dike swarms comprise the latest phase of igneous activity. Four separate dike swarms have been recognized ranging from lamprophyre hornblende diorite to qtz monzonite and grano-diorite with minor porphyritic varieties.

STRUCTURE:

Structurally the mapped area falls within the "Stewart Complex" - a deformed belt of volcano - sedimentary rocks dipping under the Bowser Basin on the east and bordered on the west by intrusives of the Coast Crystalline Belt. The Mesozoic strata are folded along arcuate northerly trending horizontal fold axes, mostly anticlinal in Hazelton rocks and synclinal in the Bowser series. The extreme effects of the deformation episodes are represented by the cataclasites and mylonites on the western most margins.

MINERAL DEPOSITS

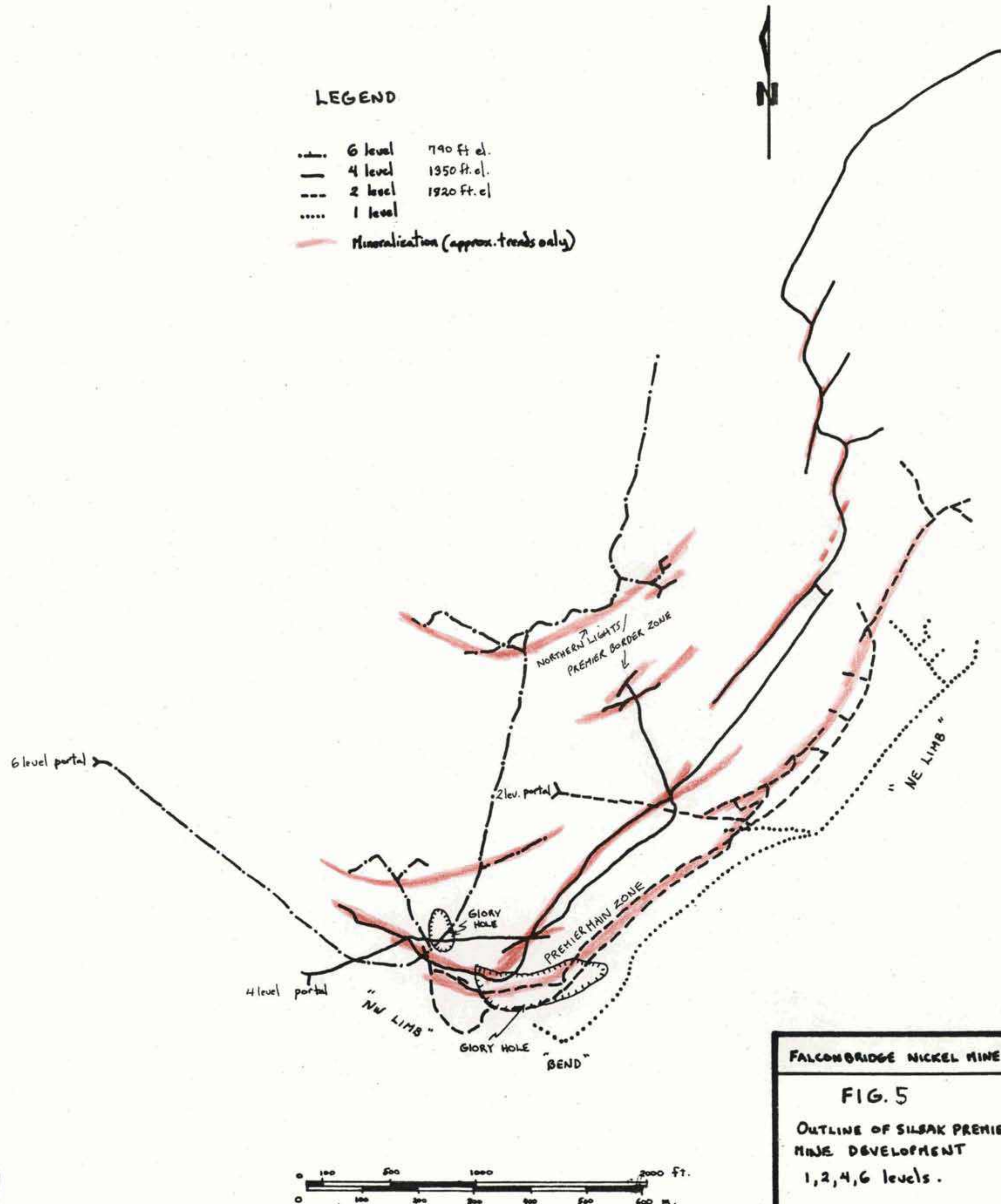
The majority of mineral prospects and deposits lie on or in close proximity to deformed zones near intrusive contacts, including some dike swarms. The Bowser/Hazelton unconformity also appears to have been a favourable deposition site. According to Grove the mineral deposits of the area can be considered mainly simple Qtz breccia and replacement veins containing irregular lenses of sulphides. The veins are related to well-defined fracture systems in both Hazelton and Bowser rocks. Wall rock alteration is said to include silicification, carbonatization, pyritization, and lesser propylitization, hornblendization and potassium feldspar alteration. As examples Grove concludes that metasomatic alteration of andesitic pyroclastics formed the Premier porphyry. This metasomatism was followed by mineralized fluids carrying much silica and minor adularia into the porphyry and wall rocks. This latter alteration is believed to have been succeeded by at least four phases of intermittent quartz/sulphide and dike emplacement. In the Big Missouri vicinity metasomatism is postulated to have produced chlorite schists which have been variably sericitized, silicified and pyritized. According to Grove this deposit, which produced 800,000 tons of 0.117 oz/T Au and 0.9 oz/T Ag for Cominco between 1938 and 1942, consists of WNW trending mineralized zones in a highly faultedschist-kakirite - cataclasite country rock. Grove recognizes that the mineralized zones parallel original stratification and that faulting appears to be post-mineralization. He nevertheless does not regard the ores as being of syngenetic origin. In sharp contrast, recent work by Westmin Resources regards the mineralization as being of volcanogenic origin with 1-2 m. thick mineralized interflow chert layers precipitated from fumarolic centres at periodic intervals. Wall-rock alteration of andesites (not mylonite) occurs as envelopes of sericite, silica and pyrite. Pyroclastics above the chert allowed more extensive hanging wall alteration. (Western Mines, June'81)

GEOLOGY OF SILBAK PREMIER PROPERTY :

The available geological data obtained during the active mining phase of the Premier property is very limited. Mining operations appear to have consisted of following ore until it was faulted off or pinched into lower-grade material. Structural or geological studies received scant consideration in the past so that the little geological work carried out resulted in a simplistic lithological classification which has been perpetuated until very recently. Traditionally the lithology was classified into six major "units" - Premier porphyry, greenstone, purple tuff, Premier dike, lamprophyre dike and red porphyry. Part of the nomenclature problem has resulted from the relative absence of petrographic study, the apparent uniformity of the"greenstone", and the lack of marker beds or horizons.

Most of the published reports on the mine geology have either relied on previous data (negligible) or treated the mine geology briefly as part of a larger regional study. In such cases field data has been collected on a more or less reconnaissance scale and the resulting interpretations have varied widely over the years. This report is no exception and has had to depend on compilation of the available scraps, biased heavily toward the most recent and perhaps more reliable work. Because of the, as yet, sketchy understanding of the geology in the mine area it may be pertinent to briefly review the contributions and differing hypotheses of the principal workers:

G. HANSON (1935): Hanson's 1935 Memoir provides one of the first instances of geological study on the property. He described the country rock as consisting of an extensive feldspar (orthoclase) porphyry holding large inclusions of sheared volcanic rocks altered to greenstones or green schists with abundant chlorite. He interpreted the porphyry as an intrusive stock of irregular shape approximately 1.5x3.0 miles in size. Local shearing in the porphyry produced zones enriched in sericite, chlorite, and pyrite. He described the mineralization as occupying intersecting fracture systems cutting the porphyry and greenstone inclusions. The fractures or shears are described as being preferentially more extensively developed in porphyry. The geometry of the mine workings (Fig 5) follows the attitude of the



FALCONBRIDGE NICKEL MINES

FIG. 5

OUTLINE OF SILBAK PREMIER MINE DEVELOPMENT
1, 2, 4, 6 levels.

DATE Oct. '81

DRAWN BY T.C

Scale 1:9250 approx.

mineralization which occurs in a steeply dipping arcuate system with a long NE "limb" and a much shorter and less extensive NW "limb". The NE limb dips about 70° NW in the upper levels and approximately 45° at depth. Ore shoots within the mineralized zones plunge steeply SW. Ore grades decreased markedly from high-grade near-surface semi-massive sulfides with sulfosalts, to stringer-type ore in silicified rock at depth. It is notable that the ore shoots do not extend to surface formost of the strike length of the NE zone. Widths of the ore bodies averaged 30 feet or less except at the southerly bend (or "nose" - if a folded structure is accepted) where widths increased to more than 50 feet. At this bend the zone dips steeply to the north at approx. 80°, flattening rapidly below 4th level (1350 ft. elevation).

Hanson noted that alteration in the form of silicification, sericite and pyrite extended into the wall rocks for 10 ft. or more from the ore. Adularia was also observed in minor amounts. The ore itself in the upper levels consisted of near massive sulphide lenses of pyrite, galena and sphalerite with minor chalcopyrite. The upper level ore also bore significant amounts of polybasite, pyrargyrite, native silver, electrum, native gold and tetahedrite. Accordingly the richest ore was mined in the early years of operation. One early shipment contained 7 oz/ton Au and 220 oz/ton Ag. (A year by year production record is listed in R. Seraphim's 1979 report, Appendix A)

E.W. GROVE (1971)

Grove's study of the Premier mine was, like Hanson's, merely part of a large regional report. In accordance with his regional interpretation, Grove offers a completely different view of the mine geology. He produced a surface geology map of the mine area which displayed an essentially undifferentiated sequence of NNW trending green cataclasites, mylonites and schists with minor purple to black mylonite (Fig 6). Within these deformational units occur altered zones bearing the ore shoots. Some of the alteration zones correspond to previously described areas of Premier porphyry. Otherwise the "greenstones" (andesitic tuffs) and porphyries are lumped together in his classification. The purple/black mylonite probably corresponds with the purple tuff horizons described by earlier workers. Grove's map also shows more extensive eastward projections of intrusive Texas Creek granodiorite than previously recorded.

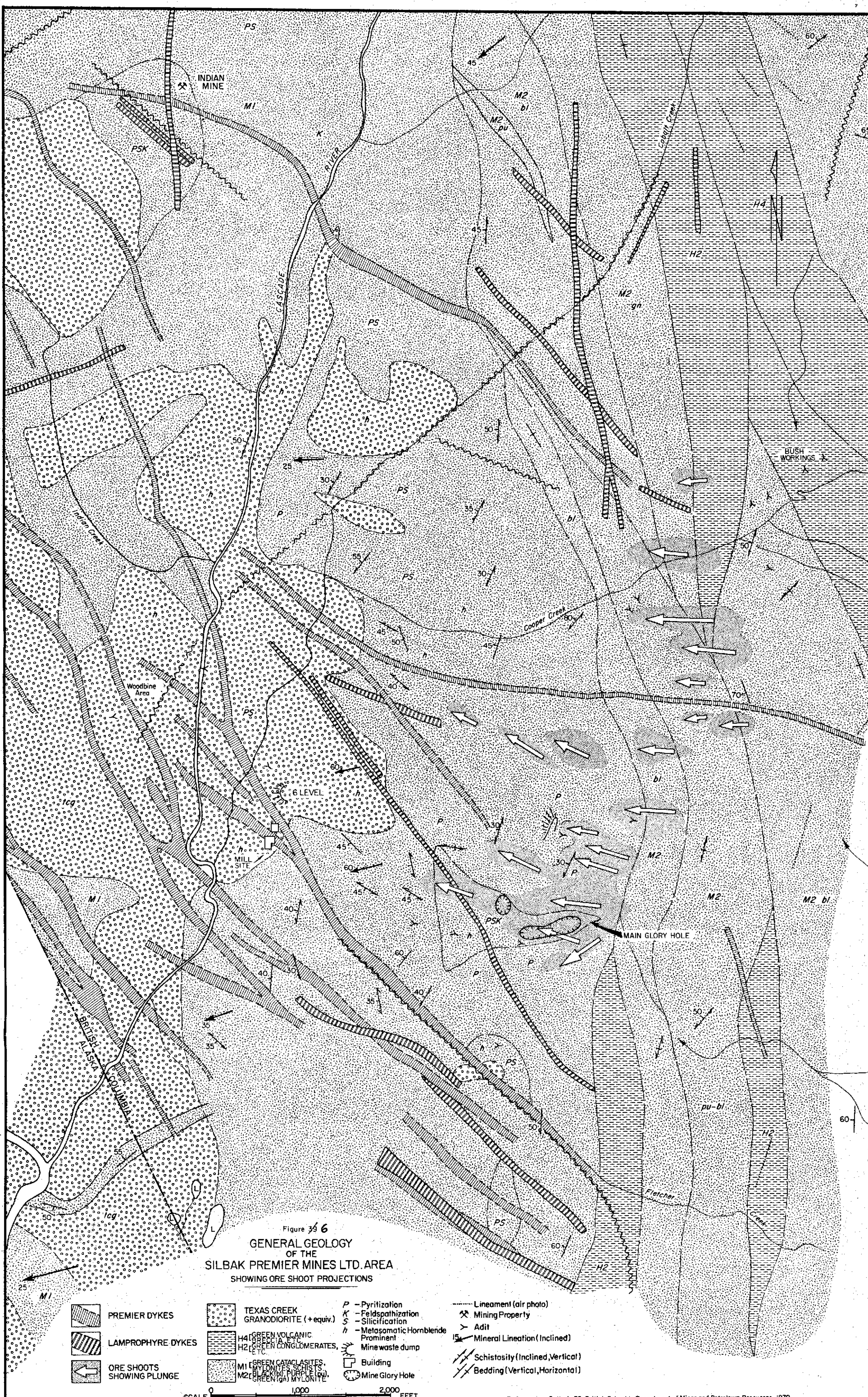


Figure ~~39~~ 6
GENERAL GEOLOGY OF THE SILBAK PREMIER MINES LTD. AREA
SHOWING ORE SHOOT PROJECTIONS

FIG. 6

Figure 39

The Silbak Premier deposit is described as occurring in a cataclasite zone of volcanic conglomerates and tuffs intruded by apophyses of Texas Creek granodiorite. Plutonic "wedging" caused selective cataclasis within discrete units and metasomatism of andesitic epiclastics produced the Premier porphyry. The orthoclase phenocrysts of the porphyry are interpreted to be original feldspar "clasts" affected by metasomatism and porphyroblastic (?) growth. The porphyry later became the principal focus for intense fracturing and emplacement of mineralizing solutions. Numerous dikes and faults cut the cataclasites. The dike swarms are principally porphyritic quartz diorite or granodiorite with smaller, less abundant hornblende diorite or lamprophyre dikes.

Grove's petrogrphic studies show that the major rock units were originally volcanic conglomerates, epiclastics and banded tuffs whose nature (excepting the Premier porphyry) has been largely preserved. He then states, somewhat inconsistently, that most of the country rocks are now green to gray, weakly foliated, cataclasites and mylonites and that extensive alteration has masked some of the original textures to produce the nondescript assemblage termed "greenstone" in the mine literature. He also reclassified the purple tuff units of earlier workers calling them purple mylonites or kakirites.

Grove accepted the fracture-related concept for the permeation of ore bearing solutions, to produce a Qtz/calcite-sulphide replacement breccia. He reported the presence of rare barite in the vein gangue and rare stephanite and mercury in the uppermost levels and stated that secondary enrichment did not appear to have been a major factor in the formation of "bonanza" ores. Several pulses or events of ore deposition were postulated with a broad zonation indicated by a general decrease in the silver/gold ratio with depth. Structurally, individual ore shoots were described as flattened pipe-like lenses plunging steeply to the west. The strong flexure or bend in the major ore zones was interpreted by Grove to be the result of a rolling, sinuous contact between the Premier porphyry and the surrounding wall rocks.

R. SERAPHIM(1979):

In 1979, R. Seraphim was commissioned by British Silbak management to evaluate the mine and specifically to recommend directions for an exploration programme designed to expand known ore reserves and probe for new discoveries. Seraphim had worked on the property in the mid 50's with D.H. Kidd and at that time subscribed to the prevailing fracture-controlled, replacement vein hypothesis. His 1979 report, however, was presumably much influenced by his later experience with the Buttle Lake deposit of Western Mines Ltd.. His latest research of the past mine literature and a re-examination of 500 borehole logs in the central position of the mine, surface to 4th level, led him to propose a possible volcanogenic origin for the Premier Deposit. (Appendix A)

Seraphim's concepts envisaged an arcuate vent system and related the ores to a Kuroko -type model. In essence, he suggested that the present workings represent only one "limb" of vented breccia - type and stratiform ores. Fig 7 locates a series of 4 sections (Fig 8 through 11) wherein he notes the presence of ore lenses dipping in an opposite sense to the major developed zone. - possibly representing a seperate mineralized limb which would correspond to the opposite flank of the vent system. Seraphim stresses the lack of drill information in the footwall rocks as most of the development drilling concentrated on defining extensions of ore along the NE zone and probing the hanging wall, the end result being the discovery and development of the parallel Premier Border/Northern Lights zone.

To support his theory, Seraphim cited inferences from both Hanson (1935) and Langille (former mine geologist) to the effect that the Premier porphyry exhibits both sill and dike-like relationships with the "greenstones". He went on to describe two "zones" of porphyry, the northern zone being conformable to purple tuff marker horizons, and the southern zone being similar in strike to the tuffs but dipping much more steeply to the west. This led to the suggestion of a southern zone of dikes or "sheets" feeding a northern flow or sill. The junction of the two zones constituted a bulge of porphyry containing the Glory Hole bonanza ore in the bend of the arcuate vent system.

Seraphim also recognized two types of porphyry distinguished by the size range of phenocrysts. The presence of "cloudy" alteration, however, may obscure phenocrysts to the extent that the porphyry (especially in drill core) could grade into andesitic tuff in appearance. Instances of brecciated porphyry led him to conclude that the porphyry might be flow rock in places.

From ore descriptions by early workers (A.H. Means, W.H. White) he recognized two "types" of common ore. One consisted of irregular stringers and pods of sulphides in porphyry with partially digested wall rock fragments and gradational walls, the other occurred in "greenstone" with abrupt walls and bore unaltered wall fragments around which sulphides were often banded. Seraphim equated these ore types respectively with vent ("oko") ore and stratiform ("kuroko") ore of the classic Kuroko volcanogenic model.

In concluding his report Seraphim recommended a detailed study of the Glory Hole area with concurrent drilling on the south and southeast for the presumed southeasterly dipping ore bodies of the vent's opposing flank. He also recommended followup of possible undeveloped drill intersections within the mine area above 4 level.

D & U KRETSCHMAR (1980)

As a direct result of R. Seraphim's recommendations the Kretschmars were contracted to carry out a surface exploration progrmme in the vicinity of the Glory Hole. Due primarily to disagreements over contract payments, the study was limited to a detailed mapping and soil sampling grid south and east of the Glory Hole (Fig 3). A total of 21 drill holes were spotted on various targets within the grid confines. In addition, a minor amount of general reconnaissance mapping was carried out which covered the surface area of the old mine workings and a few outlying roads and streams.

The Kretschamr's geology maps expanded on the traditional lithologic classification rather than Grove's cataclasite/mylonite terminology. They recognized two separate and distinct porphyries: the Premier porphyry and a red or maroon porphyry (hematitic staining) both bearing feldspar ± hornblende phenocrysts. The "greenstone" units of older works were grouped as green andesitic fragmentals and flows, mainly tuffaceous. The purple tuffs were considered a distinct part of the andesite fragmental sequence as were minor felsic fragmentals and tuffs. The Kretschamrs work, while of excellent use as a base for a more extensive geological map, was unfortunately short on interpretation. Recent Personal conversation with the Kretschmars indicated that this was partly due to the unfinished nature of their investigation, as a result of a fundamental disagreement with British Silbak over the necessary funding required.

FNM GEOLOGY COMPILATION

A copy of the Kretschmar reconnaissance mapping was located with some difficulty in late August. The detailed geologic mapping on the soil grid (scale 1in. = 100 ft) was then reduced and plotted by FNM onto the 1" =200 ft. scale reconnaissance map to give a better overview of the surface geology. At this stage a visit with R. Seraphim in early Sept. resulted in the acquisition of several useful but previously unavailable maps, including a coloured copy of Granby's 1971 geology map for the property as well as their I.P. survey interpretations (no report was available). The Granby 1" = 500 ft geology map (reduced on Fig 12) provided the best overall coverage to date for the property yet was felt to be a highly interpretive version due to the lack of outcrop exposure/ map reliability information. To partially overcome its possible drawbacks the Kretschmar geology was further reduced and transferred to the Granby base map. The two sets of data were compiled by the writer with a bias toward the Kretschmar work where ambiguities or conflicts in interpretation occurred. The resulting map (Fig 13) was complemented by a separate overlay (Fig 14) showing such features as the main levels of the mine workings, the Granby IP lines and anomalies, the various soil grids and numerous anomalous zones derived primarily from areas noted on the Granby map as being highly altered silicified, and pyritized. The Kretschmar geochemical anomalies are also included.

From the FNM compilation plan (Fig 13), the outcrop pattern in the area of Kretschamr detailed mapping suggests a North plunging fold structure, synformal in nature and roughly comparable to the pattern of mine development. The obvious inference was the possibility that the fold structure was the major control on the geometry of the deposit indicating a probable strata-bound volcanogenic (?) origin for the mineralization. Numerous faults complicate the broadly suggestive fold pattern, primarily in a NNE direction through the inferred nose and paralleling the presumed axial plane. These faults are best shown on Fig 15 - the detailed geology plan of the Kretschmar soil grid. The suggestion of synformal folding is reinforced by the duplicate ore horizon in the Premier Border/Northern Lights area and also by deep drilling carried out by Derry Michener and Booth on the same zone., (see Fig 41) Other observations such as Hanson's description of increased width of mineralization at the "bend" is compatible with such a fold hypothesis. The major problem is the lack of sufficient detailed knowledge of the structural geology eg: small scale fold studies etc.

to draw concrete conclusions. In addition, the lack of detailed mine geology in the workings precludes confirmation of the above hypothesis.

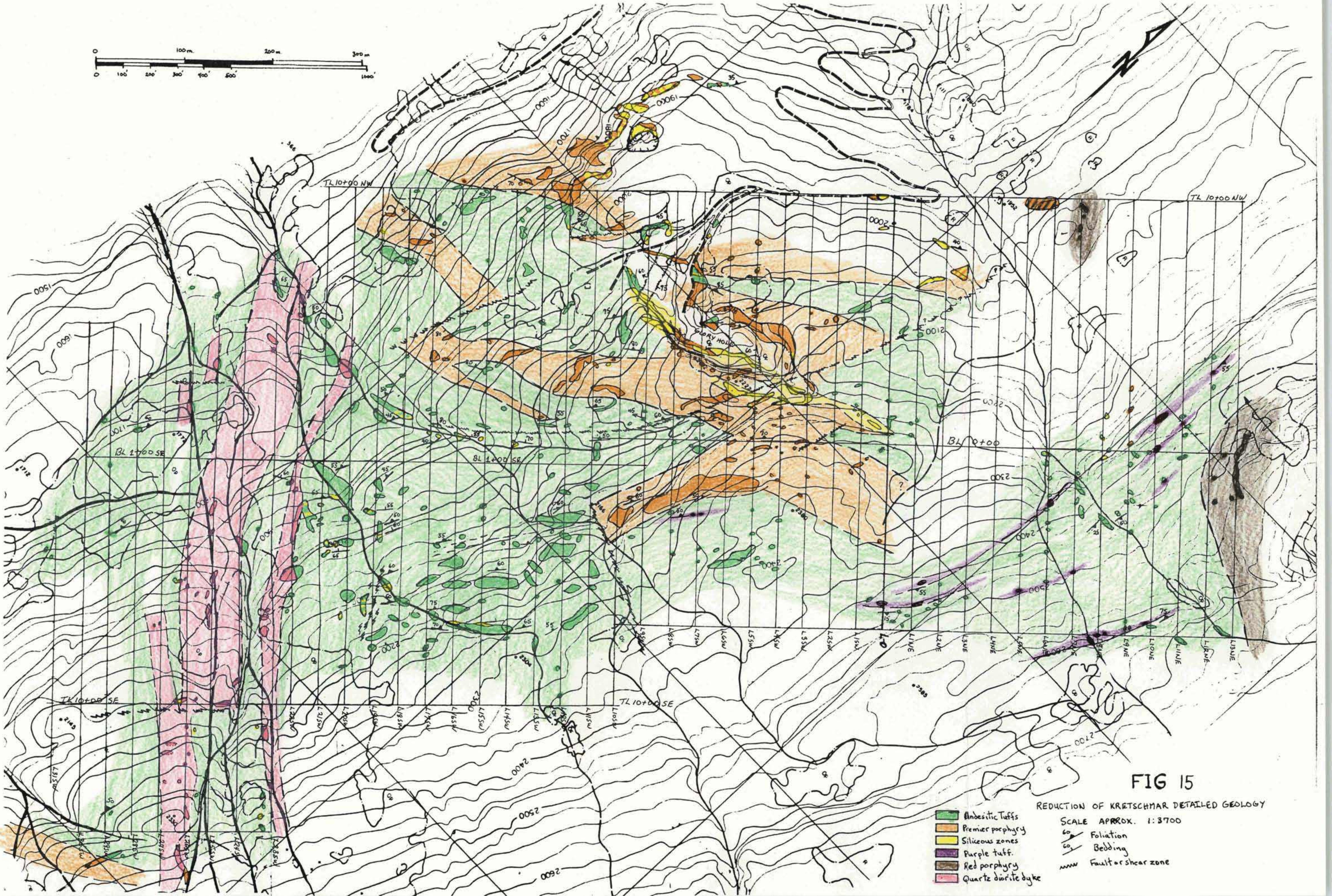


FIG 15

REDUCTION OF KRETSCHMAR DETAILED GEOLOGY

GEOCHEMISTRY

The large soil grid established by the Kretschmars south and east of the Glory Hole appears to have been the first large scale use of soil geochemistry on the property. The samples were collected at 25 ft. intervals with a line spacing of 100 ft and analyzed for Cu, Pb, Zn, and Ag. Anomalous areas were later run for Au. Contoured maps for Pb, Zn, and Ag are included in this report (Fig 16,17,18). The text of the Kretschmar report is also appended for reference. (Appendix B) Eight major anomalous areas were identified (Zones 33 through 40 on Fig 14 and tabulated in Table 1). Four of these anomalies are coincident with previous workings or subsequent drill targets, two of the remainder were well tested by continued drilling and the final two anomalies are both open-ended and remain essentially untested (Zones 36 and 33, th ough 33 is believed to have had some very old prospecting activity with few records surviving to the present).

In general the soil profile is poorly developed or absent over much of the property with thick organic debris of-ten lying directly over a thin "C" horizon on outcrop. In fact, enough outcrop is readily available in the grid area at least, that all the Kretschmar drill holes were spotted primarily on geological considerations (trench assays etc).

The open-ended anomaly to the south (33) was tested by FNM with a further line - 31 SW to establish the continuity of the anomaly and to check the applicability of other elements for exploration purposes; ie: As, Hg, and Sb. The line is located as shown on Fig 3 and the results are plotted on Fig 19 . The Kretschmar anomaly was substantially verified but in addition a strong Hg response was obtained as well as a spectacular range of arsenic values. Antimony was more subdued but still relatively enhanced over the strongest portion of the profile.

This approach was used again by FNM on a small pace and compass grid in the northern area of the property where one of Granby's IP responses coincides with an area of silicification and pyritization. The results (Fig 21 through 28) show consistently anomalous though spotty, amounts of all the elements analysed. A more extensive grid would aid in defining the anomalous trends.

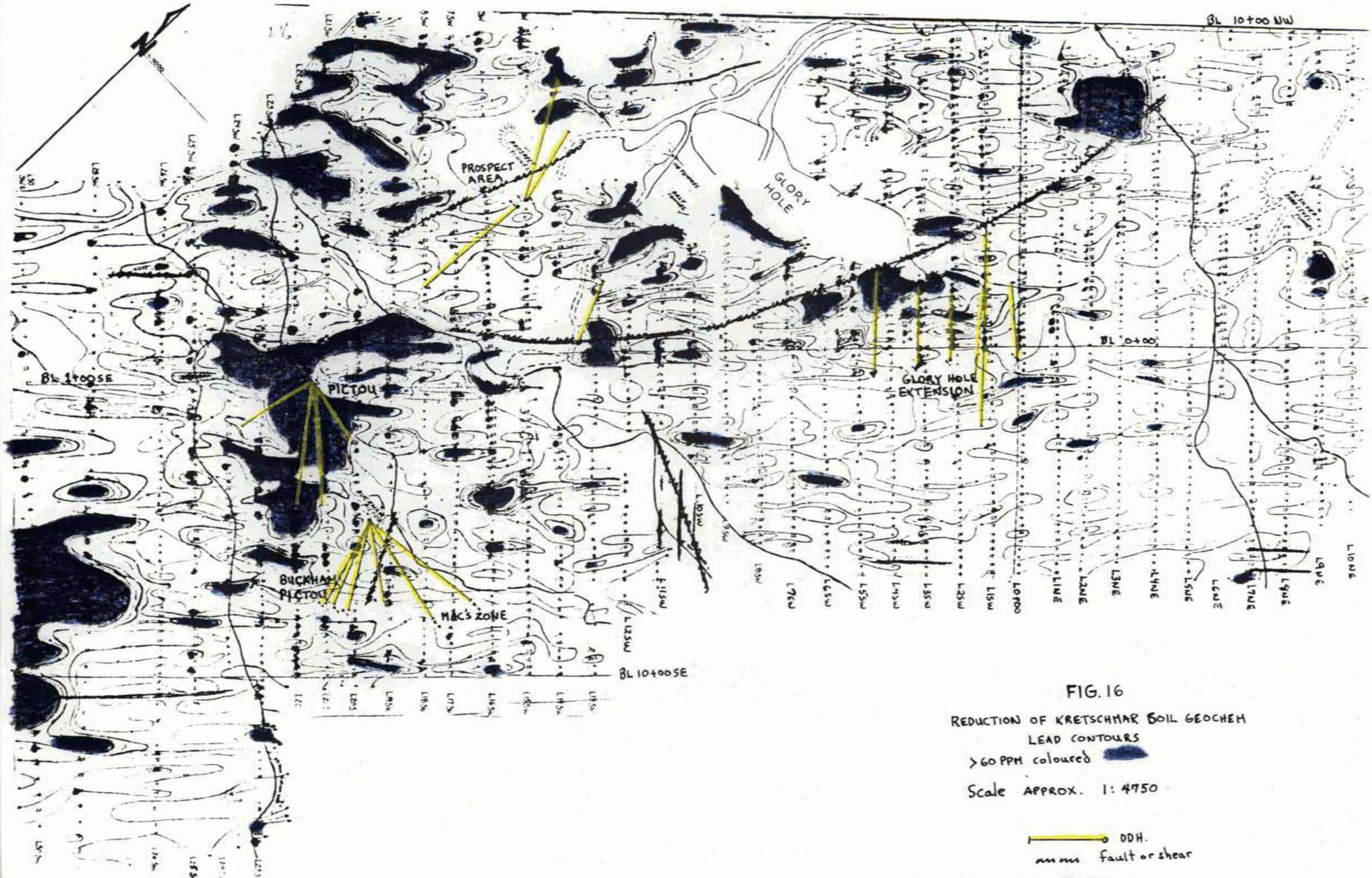


FIG. 16

REDUCTION OF KRETSCHMAR SOIL GEOCHEM
LEAD CONTOURS
>60 PPM coloured

Scale APPROX. 1: 4750

DDH.
Fault or shear

0 100 200 300 m
0 100 200 300 400 500 1000 ft.

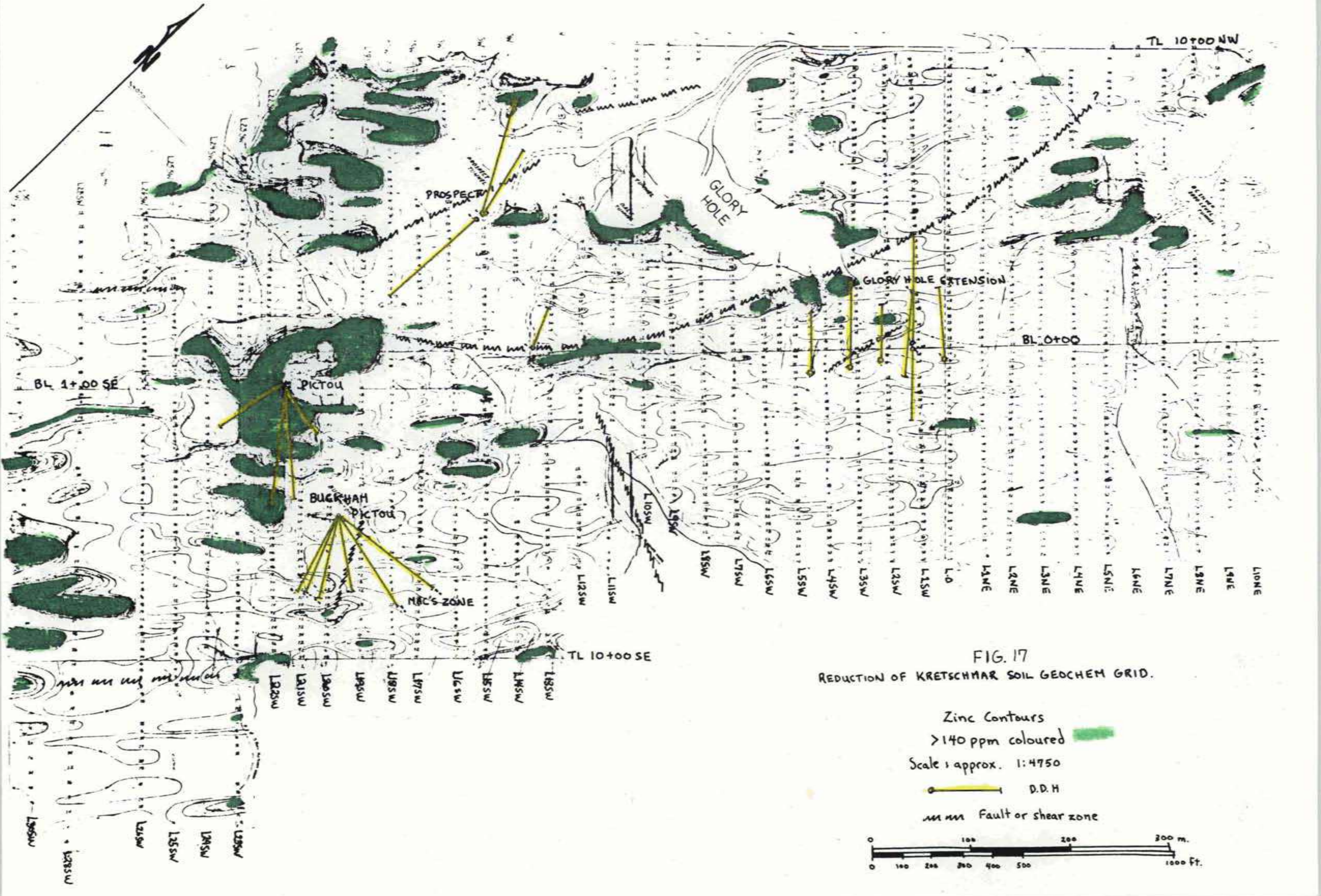


FIG. 17
REDUCTION OF KRETSCHMAR SOIL GEOCHEM GRID.

Zinc Contours
>140 ppm coloured
Scale : approx. 1:4750
D.D.H
Fault or shear zone

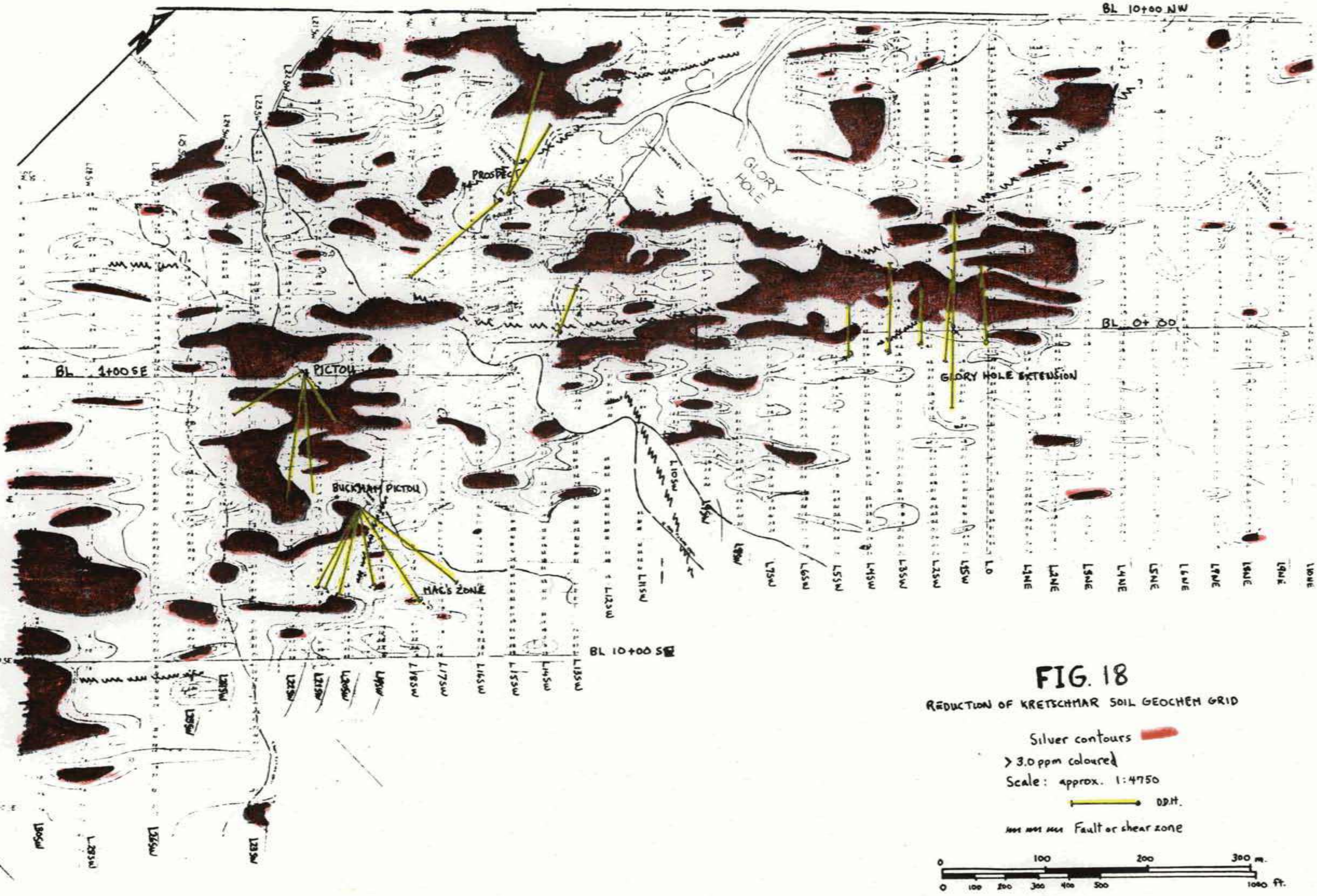


FIG. 18

REDUCTION OF KRETSCHMAR SOIL GEOCHEM GRID

Silver contours

> 3.0 ppm coloured

Scale: approx. 1:4750

D.D.H.

Fault or shear zone

0 100 200 300 m.

0 100 200 300 400 500 1000 ft.

SURFACE AND DRILL TESTING OF ANOMALOUS ZONES(Primarily Kretschmar Work, 1980)

The numbers listed below refer to anomalous areas shown on Fig 14 and listed in Table 1. Summary results are given, detailed descriptions are available in the Kretschmar report, Appendix B.

(33) - Simcoe: Several old open cuts and adits occur in this area but no recent drilling or trenching has been carried out.

(34) - Pictou: Surface trenches and an old exploratory tunnel expose mineralization in sericitic, pyritic felsic tuffs and qurtz-carbonate breccia zones. A fan of 4 holes intersected very low grade mineralization over narrow widths. Many of the surface showings were not intersected due to inferred faulting. More detailed mapping and drilling is required.

(35) - 13 Mile Dam: Tested by a series of short holes in the '30's. No assay record is available. The Kretschmars sampled one surface showing in siliceous, felsic rock which gave 6 ft true of 0.072 oz/T Au and 13.82 oz/T Ag.

(36) - Hospital: Untested. Some outcrops of silicified, pyritic, Premier porphyry were noted.

(37) - Cascade Falls # 8: Moderate values were obtained from surface trenches on quartz veins in Prenier porphyry : 0.013 oz/T Au + 5.00 oz/T Ag/ 2 ft. and 0.005 oz/T Au + 3.92 oz/T Ag/ 2 ft.. One drill hole intersected 2 ft of .034 oz/T Au + 2.54 oz/T Ag roughly coincident with an I.P. anomaly picked up on a reconnaissance traverse. Further trenching along the soil geochem anomaly located high grade talus and moderate bedrock assays. A second hole intersected the zone and gave .026 oz/T Au + 5.65 oz/T Ag/ 5 ft. Another trench along strke encountered two higher grade zones of .144 oz/T Au + 1.06 oz/T Ag/ 2 ft. and .005 oz/T Au + 11.36 oz/T Ag/ 2 ft.

(38) - Prospect: Coincides with Granby alteration zone (20). Kretschmars drilled 2 holes and both holes intercepted siliceous veins in andesitic tuffs as exposed in the Prospect tunnel. Both intercepts were low grade: .014 oz/T Au + 2.66 oz/T Ag/ 4 ft. and .025 oz/T Au + 2.27 oz/T Ag/ 5.5 ft.

(39) - Glory Hole: The middle third of the anomaly was tested by a fence of 7 holes. The Kretschmars calculated 300,000 tons of surface minable ore grading $20.00/ton or better (at $500.00/oz Au and $12.00/oz Ag) over widths of 50 to 75 ft. (No logs or sections available). A lower tonnage, higher grade zone is present as 10-20 ft. of stope footwall material. Intercepts in two holes and the continuation of anomalous precious metals in soils 400 ft farther to the NE could represent a further block of (?) similar tonnage and grade. Recent 110 level sampling (Fig 30) indicated good grades to the SW on the same zone.

(40) - B.C. Silver : Located directly above the old B.C. Silver 1820 level workings. Old open cuts and trenches were sampled: The best gave .026 oz/T Au + 6.87 oz/T Ag over 5 feet.

(25) - Buckham Pictou - Mac's Zone: The Kretschmars drilled 6 holes in the general area of anomaly (25) in attempts to pick up the up dip extension of mineralization encountered on the 4th level, 407 Drive and to test a surface showing of pyritic, siliceous tuff discovered during mapping - Mac's Zone. The up dip extension was intersected by three holes, two of which returned good values (0.116 oz/T Au + 1.34 oz/T Ag/ 5 ft. and 0.065 oz/T Au + 9.98 oz/T Ag/ 9 ft.), the third hole was much lower in grade and width (.011 oz/T Au + 4.24 oz/T Ag over 1.5 ft.). Mac's Zone was intersected by two holes, one gave 15 ft. of .056oz/T Au + 2.57 oz/T Ag, the other gave 7.5 feet of .008oz/T Au + 4.74 oz/T Ag and 10.1 ft. of 0.011oz/T Au + 6.24 oz/T Ag.

In summary, the Kretschmar follow-up programme was successful in locating multiple mineralized targets. The majority of these proved to be either erratically mineralized and elusive or require further testing to evaluate their economic potential. The major zone of interest on the south side of the Glory Hole is very low grade even for a surface mineable deposit. Unfortunately the lack of drill logs or sections precludes an independent evaluation of the drill results for narrower higher-grade zones. The Glory Hole area merits further drill testing toward the SW where previous drilling by Bralorne (1961) indicated several zones of good grade mineralization (Fig 29 ,B zones) and where recent sampling by British Silbak staff on the 110 level has shown good grade mineralization remaining in stope walls and drifts (Fig 30). The NE extension of anomalous soil values should also be tested.

MINE AREA DEVELOPMENT PROGRAMME (Derry,Michener and Booth)

In early 1980, the consulting firm of Derry, Michener and Booth (Henceforth DMB) was retained by British Silbak to improve and develop the existing ore reserve situation in the old mine workings. At the time of their hiring the most recent ore reserve calculation had been carried out by W.N. Plumb in 1957. His figures for proven and estimated reserves were: (including ore in pillars)

AREA	TONS	GOLD oz/T	SILVER oz/T	LEAD %	ZINC %
Silbak Premier	75,250	0.28	2.8	1.8	2.7
Premier Border	74,146	0.07	1.98	4.25	6.36
TOTAL	149,396	0.18	2.39	3.0	4.5

A study by V. Bjorkman of old mine plans in early 1980 indicated 31,000 tons of ore remaining in pillars grading 0.35 oz/T Au and 0.346 oz/T Ag. This tonnage was considered too small for the necessary expenses involved to extract it. An additional 6000 tons of broken ore was estimated to exist in old slopes and ore passes and a further 50,000 minimum tons of ore at unknown grade was available in surface dumps.

DMB's Dec. 1980 report studied the known ore areas and listed only 66,000 tons of proven ore grading .08 oz/T Au, 2.01 oz/T Ag, 4.2% Pb and 6.1 % Zn in the Northern Light (Premier Border) zone below 6 level. Drill intersections from the Silbak Premier zone near the 602 Winze area were not considered sufficient to warrent inclusion as proven ore reserves. This area became the primary target for the planned underground drill programme with subsequent drilling planned for the Northern Light extensions.

DMB embarked on the rehabilitation of the 6th level in October 1980 and continued through to May 1981. In the process 5000 feet of drift were repaired involving scaling, timbering, ditching and track laying. A 3 inch air line was installed and drill stations were cut in the 602 Winze area. All the underground drilling to date has been concentrated in this zone. DMB in conjunction with British Silbak Staff also conducted a surface drill programme to trace the projected NW extension or limb of the main Premier zone towards the Granduc Road showing (near the 6 level portal). A fan of 5 holes were also drilled to test the Premier Border/ Northern Lights zone at depth. To Aug. 31 of this year DMB and British Silbak had drilled a total of 15,697 ft. comprised of 12,286 ft. in 19 surface holes and 3411 ft. in 16 underground holes. A summary of the drilling results follows:

NW EXTENSION OF PREMIER MAIN ZONE

The location of the surface holes drilled in this ares are shown on Fig 31. The drill pattern used is somewhat confusing. Five holes were drilled on three sections along a bearing of 040° (81-56-S; 81-50-S & 81-52-S; 81-54-S & 81-55-S) and another hole was drilled parallel to these sections but in the opposite direction: 220° (81-45-S). Another 4 holes were drilled on essentially the same section in the plane of 075° but 2 of these were drilled on the 075° bearing (81-39-S & 81-48-S) and two were drilled the other way along 255° (81-41-S and 81-44-S). To further confuse the situation another two holes were drilled as a fan from the same setup along 115° (81-36-S) and 135° (81-33-S). Fig 32,33 and 34 show the three sections along 040°, the sections one would presume to cut the structure at right angles. Assay results were low grade to marginal for the most part. Fig 35 projects the information from the remaining holes onto a single section in the 075° plane (coincident with 81-39-S, 81-41-S, 81-44-S). This section, drawn by H. Dowhaluk - the DMB geologist on site, has visualized the mineralized intercepts in a series of imbricated, mineralized slices of progressively shallower dip with depth. Some of the intersections are very impressive: eg: 0.50 oz/T Au + 0.414 oz/T Ag over 17 ft. in 81-36-S, but the structural interpretation and the projection used give no conception of what the true widths of mineralization might be. Due to nonexistent copy equipment in Stewart, no copies of the drill logs of this zone were obtained during field visits to the property. The zone appears to merit further testing on a rationalized drill pattern.

UNDERGROUND DRILLING, 602 WINZE AREA

The underground drilling was concentrated in the area of the 602 Winze area on the 610 Drive of the 6th level, Premier Main zone, (Fig 31). Three parallel vertical sections were drilled (5.0, 5.5, 6.0) along 140° at a 50 foot spacing. Another section was drilled parallel to the 609 drift on 042° to cut the zone as it curved to the NW. Sections 5.0 and 5.5 are complete and preliminary ore tonnage calculations have been made as shown on Fig 36 and 37. The higher grade zones give 21,000 tons of 0.183 oz/T Au + 1.132 oz/T Ag over 30 ft thickness on section 5.0 and 14,300 tons of 0.226 oz/T Au + 0.152 oz/T Ag over 12 ft thickness on section 5.5. Section 6.0 is incomplete as drilling was still in progress at the time this information was obtained (Fig 38). The section paralleling the 609 Drift gave very erratic results and it appears the zone dies out at depth. Approximately 15,000 T of .08 oz/T Au + 0.940 oz/T Ag were indicated (Fig 39).

In addition to the above, the DMB site geologist constructed a section (4.0) parallel to sections 5.0, 5.5 and 6.0 from old drill intercepts. The section illustrates on a broader scale the trend, attitude and probable grade of the mineralized zone in this area (Fig 40). Using the given assays the writer has calculated a "possible" ore block of 100,000 tons grading 0.10 oz/T Au + 0.63 oz/T Ag over an average thickness of c. 25 ft., using 30 ft of strike on either side of the section. This tonnage estimate includes two large, relatively barren, blocks averaging 0.02 oz/T Au and 0.45 oz/T Ag. Smaller tonnages of better grade material are indicated in the vicinity of both levels.

The DMB programme has indicated a fairly well-defined siliceous breccia ore zone averaging 30-45 ft. in thickness and grading from 0.05 to 0.15 oz/T Au with more variable silver. By extrapolating the calculations of Sect 4.0 over the undeveloped strike length (c. 800 ft) below 5 level, one may estimate slightly over 1,000,000 tons of "possible" ore of similar grade ranges, probably averaging close to .10 oz/T Au and 1.0 oz/T silver. Proving such a tonnage would involve a much more extensive drill programme than that carried out by DMB and British Silbak.

NORTHERN LIGHTS DEEP DRILLING

Fig 41 shows the location of 5 holes drilled to intersect the Northern Light ore zone at depth. The holes were fanned from one setup on the Big Missouri Rd.. Three distinct lithological units are shown on the plan, most notably conforming in attitude to the fold structure inferred from the surface geology compilation. The main ore zone was intersected at an average elevation of 480 ft, some 300 ft below the 6th level (790 ft elevation). Assays were of poor to low grade overall. The best sample gave 0.378 oz./T Au + 0.479 oz./T Ag over 5 feet, however typical assays — for the zone were in the .005 to .02oz/T range for gold and .01 to .10 oz./T for silver. No lead-zinc assays were available. The "upper silver zone" shown on the plan corresponds to a felsic unit of quartz-sericite schist and/or silicified tuff with sporadic high silver values. One sample returned an assay of 166.5oz/T Ag over 5 ft but unfortunately was surrounded by extremely poor values (traces only). No mineralized horizon could be effectively delineated within the zone. The main ore zone itself was shown to flatten considerably at depth, dipping approximately 30°N below 6th level.

6th LEVEL SAMPLING

602 Crosscut: Fig 42 shows the results obtained from a series of panel samples taken from the walls of the 602 x-cut. The mineralized zone appears to have been dislocated by the cross cutting fault shown on the plan. The sense of movement along the fault seems to correlate well with the apparent relative dislocation of lithological units along similarly trending faults as shown on the surface geology map - especially in the area of detailed mapping near the Glory Hole (Fig 15). This example illustrates the structural complexity and frequency of faulting within the mine. The Kretschmar report (Appen.B) remarked on this problem and suggested that a detailed study of the mine workings might locate ....(cont)...

high-grade lenses dislocated by similar faults and not followed up by the old miners. The Lessee's discovery in 1959 of a bonanza ore shoot in the south wall of the Glory Hole is cited by the Kretschmars as a prime example. The one level plan shows two ore zones running into a fault and only one zone mined on the other side. The second shoot, offset only 40 feet, became the Lessee's discovery.

6th LEVEL ADIT:

A series of old flat parallel holes drilled perpendicular to the 6th level tunnel gave long low-grade intersections on the order of 0.5 oz/ton Ag over 1000 ft.. These results gave rise to speculation of a large low-grade open pittable deposit. Check samples were recently collected along a portion of the adit and are shown in Table 2 for comparison with the older assays. The lack of correlation seems to negate the possibility of such a deposit.

LITHOGEOCHEMISTRY SAMPLING:

During the first field trip to the property in August, a series of samples were collected from three drill holes, surface and underground, which formed an incomplete but representative cross-section of the mine area. The holes sampled are shown in plan view on Fig 41 . They consisted of 81-25-S (surface-Northern Lights Area) and 81-28-U and 81-40-U (609 drift section-underground). 81-25-S provided a full hanging wall to foot-wall sequence through the Northern Lights (Premier Border) ore zone while 81-28-U and 81-40-U provided a shorter cross-section through the Premier Main zone. A total of 74 samples were collected at 20 ft intervals down the holes. The samples were subsequently submitted to Ted Muir at Thornhill with the intent of carrying out complete whole rock geochemical analysis to detect any systematic alteration patterns associated with the mineralization. However due to time limitations it was decided to select 14 representative samples for polished thin section study and Qualitative Spectrographic analysis. Results were surprising since the petrographic examination showed the rocks to be nearly all f.g. altered tuffs with differing degrees of carbonatization sericitization and silicification despite the much more variable field appearance and classification assigned during the drill logging by the DMB geologist.

The qualitative spectrographic analyses indicated relative potassium enrichment toward the ore zones but sodium levels were almost all uniformly very low (0.3%). The results were intriguing enough to warrant a full lithogeochemical analysis of all 74 samples when and if an option agreement could be reached with British Silbak. A copy of the lab results is appended to the report (Appendix C)

CONCLUSIONS AND RECOMMENDATIONS

Recently conducted underground drilling has not added substantially to the minés ore reserves. However, the programme conducted by DMB has indicated a definable mineralized horizon which could give in the order of 1,000,000 tons of approx. .10 oz/T Au ± 1.0 oz/T Ag on the NW limb of the Main Premier zone below 5 level. A feasibility study would be necessary to better define the extent and grade of such "possible"ore.

Several interesting targets have been located by drill intercepts within and south of the Glory Hole area but, with the possible exception of the SW wall of the Glory Hole itself, none are particularly outstanding. A major exploration programme would necessarily have to be directed towards discovering new mineralization outside the developed zones. To aid such a programme, a much better understanding of the known ore zone is required - in particular the ore genesis and possible structural and lithologic controls on mineralization. The compilation of the best available surface geology has suggested that the known ore bodies may be located within a plunging synformal fold structure, evidence for which has been derived principally from the outcrop pattern obtained during detailed mapping of a relatively small portion of the property. Further detailed mapping outside this area is necessary to either establish the suggested fold structure or revise it completely to accomodate an evolving picture of the geology of the property. Geological mapping within the mine workings would allow construction of a three dimensional model and also aid in the discovery of any high grade ore pockets overlooked during earlier mine operation.

The available scraps of information and speculation point very strongly towards a volcanogenic origin for the Premier ores although once again confirmation must necessarily depned on an intensive work programme to define the volcanic centres, stratigraphy etc.. Westmin's exploration work on the Big Missouri property to the north has evolved the concept of periodic fumarolic activity whereby the precious metals were precipitated within cherty inter-flow layers. It was conjectured, at one stage that these cherty horizons might correspond to the lower-grade siliceous breccia ore zones found within andesitic tuffs on the lower Premier levels. However, the significance of the obvious relationship between the Premier porphyry and the high-grade bonanza ores of the Premier upper levels is not yet understood nor is it correlatable with the known geology and style of mineralization on the Big Missouri Property. In fact, during a recent conversation with D. and U. Kretschmar they stated their belief that the Premier ores lie within a completely different section of the volcanic pile.

A further speculation on the ore genesis is that the Main Premier zone and the parallel Premier Border/Northern Lights zone may represent separate stages of vented mineralization during growth of the pile, later folded into their present configuration. Some evidence for this may be derived from the apparent metal zonation in the mine: The Premier Border/Northern Light ores are relatively base metal (Pb/Zn) rich and generally poorer in precious metal values than the Main Premier zone ores. By extension of this hypothesis it is not unreasonable to suggest that other, as yet undiscovered, mineralized horizons may be present on the property, probably in parallel to the known ore zones. To this end the overlay plan (Fig 14) shows the highly anomalous nature of the property as a whole, not merely the developed areas. Due to the extent of these anomalous areas relative to the size of the known ore zones, the lack of any known previous thorough and cohesive exploration activity over most of the property, the location in an historically rich and active precious metal belt with developed infrastructure and transport routes, it was decided that the Premier Property had very good exploration potential and merited a concerted attempt on the part of FNM to submit a mutually acceptable option proposal to British Silbak.

RECOMMENDED EXPLORATION PROGRAMME:

1) Two large grids to be cut in the areas indicated on Fig 14 , with a line spacing of 50 m and totalling approximately 80 line km.
2) Detailed geology, magnetometer and VLF surveys on the grids. Soil sampling at 20 m intervals, rock geochemical sampling at 30 m intervals.
3) Underground mapping on 110, 2 (if accessible), 4 and 6 levels. Construction of a model.
4) Compilation and reassessment of the mine assay plans, drill logs and stope plans. Photographic conversion of the compilations to a metric scale.
5) Surface drilling of indicated mineralization on the Southwest side of the Glory Hole.
6) Contingent drill followup of anomalous zones and/or mineralization located during the grid programme.
7) Reconnaissance geology and prospecting over remainder of the property.
8) Ongoing petrographic and ore microscopy studies to aid mapping and resolve ore genesis.
9) Feasibility studies to determine the extent and grade of possible ore which could be generated laterally and at depth within the mine workings.

REFERENCES

1) Grove, E.W.: "Geology and Mineral Deposits of the Stewart Area" Bulletin 58, Dept. of Mines and Pet. Resources, 1970

2) Hanson, G.: "Premier Gold Mining Co. Ltd." in Geol Surv. Canada Memoir 175, 1935

3) Schroeter, T: "Selected Precious Metals Deposits of Northern B.C." Western Miner, June, 1981.

-Additional References are included in the Appendices-

TABLE 1

Anomalous Surface Areas (see Fig. 14) Key: Pp = Premier porphyry, And. = Andesite.

No. LITHOLOGY	STRUCTURAL FEATURES	ALTERATION	GRANBY IP RESPONSE	GEOCHEM RESPONSE	KNOWN DRILL TESTING
1) Pp./And. tuff/dike	NE fault	SiO_2, Py	—	—	—
2) And. tuff, dike	—	" "	—	—	—
3) Pp/And. tuff contact	—	" "	—	—	—
4) Pp.	N to NNE fault	" "	good	Multi-element partial coverage (FNM)	—
5) Pp/And. tuff contact	—	" "	—	—	—
6) " "	N fault	" "	good (on edge)	—	—
7) " "	NE fault	" "	good	—	—
8) Pp.	ENE fault	" "	good (on edge)	—	—
9) Pp.	NNE fault	" "	—	—	—
10) Pp/And. tuff cont./felsic tuffs	NE fault	" "	good	—	—
11) Pp, minor And. tuff	—	Large" "	—	—	—
12) Pp.	—	" "	—	—	—
13) Pp/And. tuff contact	—	" "	—	—	—
14) And. tuff/purple tuff	E limb of fold?	" "	—	—	Above 4 level workings
15) And. tuff/sandstone contact	Adj. to NE fault	" "	—	—	—
16) Sandstone minor	—	" "	—	—	—
17) Complex Pp/And. tuff contact zone, minor siliceous rocks	W limb of fold?	Large" "	Weak: at north end	—	2 holes, near 6 level portal. See text.
18) And. tuff	W limb?/NW fault	" "	Weak: at S end	—	Several holes testing NW extension. See text.
19) Mostly Pp., minor And. tuff + dike, connects with 20 below	W limb?	Large" "	—	—	—
20) Mixed Pp and And./tuffs, minor dikes, much felsic to siliceous rock.	W limb & nose of fold? NNE faulting	V. large arcuate SiO_2, Py • zone	Good, multiple responses on N & E	Multiple Pb/Zn/Ag Anomalies 38 & 39	Mine development area + 12 holes to test NW extension. Numerous old drill holes in Glory Hole area; 7 holes by Kretschmars (see text)
21) "Pyroxene andesite"	—	SiO_2 & Py	—	—	
22) Andesitic tuff breccia	—	" "	—	—	—
23) And. tuff + Pp.	—	" "	—	—	—
24) And. tuff, Pp. + dikes	Nose of fold/NNE fault	" "	—	Coincident with Pb/Zn/Ag anomaly 35	—
25) And. + siliceous tuffs, dikes	Nose of fold?/NNE fault	" "	Weak	Coincident with Pb/Zn/Ag anomaly 34	10 holes, old prospect tunnel, (see text)
26) And. tuff/dike	—	" "	—	—	—
27) Pp/And. + siliceous tuffs	—	" "	Weak	Partial coincidence with open Pb/Zn/Ag Anomaly 33	Old surface holes (1930's) no records.
28) Andesite tuff/dike	—	" "	Weak IP to North	—	—
29) And. tuffs near dikes	—	" "	Good IP to North	—	—
30) Pp/And. tuff contact,	—	" "	Good to NW	—	—
31) And. tuff/Pp contact	—	" "	—	—	—

TABLE 1 (cont'd)

NO. LITHOLOGY	STRUCTURAL FEATURES	ALTERATION	GRANBY IP RESPONSE	GEOCHEM RESPONSE	KNOWN DRILL TESTING
32) And. + siliceous tuffs, near dike.	—	S_1O_2, Py	Two weak responses.	—	—
33) And. tuff/dike	Proximity to NE & NNE faulting	" ", sericite.	Weak to southwest.	Kretschmar Grid Strong Pb/Zn/Ag Open to SW	Old drilling (1930's) no records
34) And./siliceous tuff	NNE fault zone	Coincides with 25. siliceous, py rich zone	Adj. weak IP to SE	Kretschmar Grid Pb/Zn/Ag anomalies area	4 drill holes (see text)
35) And./siliceous tuff	Adj. NNE fault	Coincident with 24, S_1O_2 + Py.	—	" " "	Series of 1930 short holes. Kretschmar surface sampling (see text).
36) Dike?And. tuff/Pp.	Nose?to W limb of fold?/Adj. to NNE fault	—	Weak to south.	" " " Open to west	—
37) And. tuff/Pp. contact	Nose of fold?	Py/Siliceous/ser.	Anomaly is south of good IP response	Pb/Zn/Ag	Two holes& surface trenching (Kretschmar). See text.
38) And. tuff/Ppcontact	NNE faulting	Sil/py zone: coincides with anomaly 20	—	Pb/Zn/Ag open to the west	Prospect tunnel. 2 holes drilled by Kretschmars (see text).
39) Pp. & siliceous tuffs, minor And. tuff	N to NNE & NW faulting	Siliceous/Py/ser Coincident with 20	Good	Pb/Zn/Ag	Directly over workings, old drill holes, seven holes drilled by Kretschmars to outline low grade ore zone(see text).
40) Pp.	Nose/E limb of fold?	Siliceous, py rich zone.	Coincident with S. end of Good IP response.	Pb/Zn/Ag	Directly over 4 level workings.

TABLE 2

Check assays - 6th Level Adit Au, Ag oz/ton

OLD	RECENT
0.88	Tr, 0.025
0.48	Nil, Tr
0.52	" "
1.80	" "
0.80	" "
0.48	" "
0.60	" "
0.56	.006, 0.012
0.32	Nil, Tr
0.36	" "
0.30	" "
0.28	" "
0.64	" "
0.36	" "

Appendix A

REPORT ON

SILBAK PREMIER PROPERTY

NEAR

STEWART, B.C.

SKEENA M.D.

by

R.H. Seraphim, Ph.D., P.Eng.

March 8, 1979

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SUMMARY AND CONCLUSIONS

The reports and data from the Silbak Premier mine present abundant evidence that the mine should be re-evaluated in the search for known mineralization made economic by new metal prices, and for undiscovered mineralization because of new geological concepts.

Abundant evidence that the mineralization is emplaced by volcanogenic processes rather than shear-zone replacement leads to a strong recommendation to explore the uppermost portions of the porphyry, including its roof and both flanks, rather than to explore 'shear-zones' along their strike and dip.

The evidence includes:

1) The fact that the ore in general occurs in a broad belt of shearing, with 'quartz-sericite' and 'silicification' (rhyolite?) hosting individual ore bodies.

2) The presence of breccias, including clasts of porphyry, with ore in the matrix.

3) The presence of poly-sulphide ore with gold, silver, lead, zinc, and copper, arsenic, and antimony, with

the best grade of gold and silver accompanying 'black sulphides' in the upper parts of ore bodies.

4) The occurrence of two types of ore: one described as typical of the current classification of 'vent' ore and one typical of 'stratiform' ore.

5) A study of the structure of the porphyry hosting the ore, and the deduction that it occurred as "dykes or sheets feeding the .... northern zone which is probably flow or sill".

6) Sections showing that one or more ore bodies on the southwest flank of the porphyry dip southwest (i.e. not all the ore was in the two fracture sets as defined by the previous operating staff).

7) Capping by unconformable tuffaceous or sedimentary rocks (the purple tuffs) that contain jasper or hematite. These were locally removed by erosion to expose the mineralized outcrop leading to discovery.

The volcanogenic deposits as a class contain evidence to show that the sulphide-bearing vent zones and the stratiform (ejected) ore formed in a shallow submarine

Mineral reserves are reported in two categories: (1) 82,755 tons grading 0.25 ounces gold, 2.52 ounces silver, 1.6% lead and 2.4% zinc in a number of sills and pillars and (2) 81,561 tons grading 0.06 ounces gold, 1.78 ounces silver, 3.83% lead and 5.72% zinc in Premier Border lower levels. Part or all of category 1 might best be left in place for some time if necessary to maintain access. Part or all of category 2 will need re-evaluation in the likely event that additional mineral reserves are determined.

A low grade mineral reserve, probably mineable by open pitting, south and east of the larger Glory Hole undoubtedly exists. This reserve will require a detailed program of re-evaluation of old assay plans, check survey of old stope outlines, and locally at least, some diamond drilling prior to dependable estimation of tons and grade.

The old drill records show a number of mineralized intercepts considered worthy of further exploration. Our investigation was limited by time to the data on the upper levels (4 level and above) and to the western workings (original Premier mine). This part of the mine contained most, but not all, of the highest grade gold-silver ore. Incidents like the 'Leasers Discovery' in 1959 are a strong indication that further high grade shoots probably exist to 'sweeten' possible open-pit ore. The detailed assay maps examined in Stewart show several stringers exposed in the upper levels that may not have been explored in detail above and below the level of exposure.

RECOMMENDATIONS

1) The mineralization near the crest and upper flanks of the 'Premier porphyry' in the vicinity of the mine merits detailed re-investigation. Each mineralized drill intercept and underground exposure in the crestal zone should be re-evaluated with reference to its structural position and geological nature (vent or stratiform), and should be tested for extensions.

2) The vicinity of the glory hole requires re-evaluation by compilation of a set of plans and sections assembling all available assay and geological data.

3) A number of 'outside' showings, such as the Northern Light, Pictou, 'Granduc Road near No. 6 portal' and Granby's geophysical discovery, need re-evaluation to determine whether or not they are volcanogenic in origin and, if so, whether or not further exploration is warranted.

COSTS

Stage	PIT PROJECT	
1)	Re-evaluation of Glory-hole area. Compilation of maps and sections from existing data and check surveys at site	\$ 50,000
2)	Contingent drill program, say 5,000 feet at \$30.00 per foot 'all in'. . .	\$ 150,000
	UNDERGROUND EXPLORATION PROJECT	
1)	Re-evaluation of 3 and 4 level data to determine drill intercepts with merit for further exploration	\$ 25,000
2)	Re-establishing entry to upper levels of mine where possible for drill sites .	\$ 25,000
3)	Contingent drill program, say 5,000 feet at \$30.00 per foot 'all in'	\$ 150,000
	SURFACE EXPLORATION PROJECT	
1)	Re-appraisal of various 'outside' showings and re-mapping those considered to have potential.	\$ 25,000
2)	Contingent drill program, say 2400 feet, at \$30.00 per foot 'all in'.	\$ 75,000
	Total Stage 1	\$ 100,000
	2	400,000
	GRAND TOTAL:	\$ 500,000

INTRODUCTION

This report was commissioned by Mr. B. Ouellette of 410 Hadden Drive, West Vancouver, as spokesman for a group interested in acquiring control of the dormant Silbak Premier mine. The mine has not been revisited since the author prepared the report in 1955 that is shown in the list of reports and data appended to this section. An examination of the mine workings themselves is not believed to be practicable at present, not only because of the difficulty of access in winter, but also because of the large extent and questionable condition of the mine workings.

The data reviewed is listed in an appendix to this section. Assistance of T. Lisle, P.Eng., is acknowledged. Lisle also had previous experience at Silbak Premier through his work with H. Hill and Associates in 1961.

The study summarized herein is appropriate for two principal reasons. Firstly, Silbak Premier produced from the upper levels during its initial 15 years (1918 to 1932 inc.) 2.3 million tons of ore with an average ton along with minor lead, zinc and copper (Hanson G. p. 162). This ore at Feb. 1979 has a value of over $250.00 per ton, and would provide an operating profit, prior to amortization and taxes, of approximately $200.00 per ton.

Secondly, our geological concepts concerning deposits in volcanic host rocks have, in the past several years, completely changed by work in Japan and in the Precambrian Shield. Abundant and compelling evidence, originating with Japanese geologists who had the advantage of working with a number of Kuroko deposits (free of metamorphism) indicates that many of these ore deposits are 'volcanogenic', i.e. emplaced contemporaneously with their host rocks, and are part of the same sequence in space and time. Consequently, they should be explored under the premise that they are either volcanic strata or volcanic vents.

Their shape, attitude, and location would depend in large part upon the topography that existed at the time of their formation rather than upon fracturing and replacement occurring in a much later and separate geological period. This revelation is important economically as it directs exploration into areas that merit a much more thorough test than formerly. The sections on 'Local Geology' and 'Summary and Conclusions' in this report present discussion regarding some of these areas that are attractive and we believe to exist near Silbak Premier mine workings.

PREMIER FILES FROM VANCOUVER

(1)	Incomplete Yearly Advances -- Maps, blueprints 1924, 1930, 1932, 1933, 1937, 1939, 1940, 1941, 1942, 1943, 1947, 1952, 1953	1 box
(2)	Assay Certificates -- mixed	1 box
(3)	Drill logs -- See Page 2	2 boxes
(4)	Claims -- Old record book, old survey maps, lists	1 folder
(5)	Ore Movement from stopes 1950-3 & costs	1 folder
(6)	Miscellaneous old geological reports	1 folder
(7)	Means report & map (1923)	1 folder
(8)	White, W.H. thesis (1939)	1 folder
(9)	Spellmeyer, Pentland (1951)	1 folder
(10)	D.F. Kidd & Seraphim 1953 (with plans & sections)	1 folder
(11)	Bell, Pearcey (1955)	1 folder
(12)	Pitt (1959)	1 folder
(13)	Hill-Plumb-Starck (1955) -- Reports Northern Light, Mist Anomaly, etc.	1 folder
(14)	Hill & Plumb 1955 - 20 scale maps Ore Reserves in 3 & 4 level sills, pillars, & 6 Level	1 folder
(15)	Hill & Plumb - 1956 - Data re new milling operation	1 folder
(16)	Hill, Plumb, Starck 1957 -- Data re resuming operation, geological study - Plumb's 200 scale plans & sections, 6 Level mapping on 20 scale	1 folder
(17)	Bermah Lease -- 1960 Glory Hole	1 folder
(18)	Hill-Starck - 1961 Glory Hole - plans & sections	1 folder
(19)	Hill-Starck - 1962 Glory Hole	1 folder
(20)	Hill-Starck-Stanley - 1963 Glory Hole Geology - Ore Reserves - Exploration	1 folder
(21)	Hill-Starck -- re new Mill 1964	1 folder
(22)	Bralorne-James-Weeks -- Ore reserves 1965 & chances	1 folder

PREMIER FILES FROM VANCOUVER - Page 2.

(23)	Bralorne-James-Weeks, Cons. shipped 1965-66	1 folder
(24)	Bralorne-James-Weeks, Cons. shipped 1966-69	1 folder
(25)	Granby -- Geophysics & Drilling - 1970-71	1 folder

DRILL LOGS

PREMIER	1 - 200 original
	1 - 200 typed
	201 - 400 typed
	401 - 600 typed
	601 - 743 typed
C.T.H.	801 - 1200 original
	1201 - 1590 original
PREMIER	1401 - 1690 typed
	1601 - 1800 typed - also original
	1801 - 1999 original
	1801 - 1870 typed
	2001 - 2106 original
NORTHERN LIGHT	201 - 400 original

SURFACE

P. Border - 1,2,3.
Premier - S1 - 14
Silbak - S101 - 125, 130 - 135

B.C. Silver - 0 - 200 typed
201 - 259 typed
0 - 259 original

PREMIER DATA IN STEWART

Assay Plans - 20 scale		Premier	several rolls
		B.C. Silver	1 roll
		Premier Border	1 roll
		Vertical Projections	1 roll
		Ore blocks (1940)	1 roll
		1925 Blue Prints	1 roll
		1013 - 1015 Ore body	1 roll
		1940± stope maps	1 roll
		1936± assay maps	1 roll
		790 Level assay maps	1 roll
		Misc. of Stope areas	1 roll
		1923	1 roll
		1944 & others - ore blocks	1 roll
		Sebakwe - Bush	1 roll
	40 scale	Premier Border Tunnel	1 roll
Geology & Survey	many maps with little lithology		
	40 scale	Premier - various years & levels	1 roll
		Linens - various years & levels	1 roll
		B.C. Silver linens	1 roll
		B.C. Silver vert. proj.	1 roll
		Composite levels	1 roll
		Development maps - 1925	1 roll
		Development maps to 1952	1 roll
		Pictou tunnel	1 roll
	20 scale	B.C. Silver & others	1 roll
		Premier & others	1 roll
		1 & 2 levels Premier	1 roll
		3 levels Premier	1 roll
Survey 'Hard Plans'			
	100 scale	Composite	
	40 scale	Composite	
	20 scale	2E	
		2NE	
		3	
		4	
		4W	
		6	
		6W	
		7	
		8	

Level Plans			
	100 scale	1953	1 roll
Vertical Projections			
	20 scale	Assay	1 roll
Surface		1320 topo 500 topo 200 & other geol.	
	200 scales	Hill-Starck Misc. Premier Level Plans Levels and DDH's Composite Levels Long projection & plans - 1948	
Miscellaneous Maps			
		Old ore block plans Stopes 9C, 10F, 10E, 10J, 10K, 7B, 9 Old Level plans & vert. projections 1923-31 Tram-line topography Old sepias in poor condition Hills' miscellaneous glory-hole 1961 Bralorne sections - 1965 Showing on Granduc road	

FILES

Payroll data	2 cabinets
Claim & property	1 cabinet
Equipment	1 cabinet
Outside properties	5 cabinet
Annual meetings & head office	1 cabinet
Metallurgy & mill	1 cabinet
Roads, Trails, publicity etc.	1 cabinet
Taxes, invoices, etc.	1 cabinet

FURTHER REFERENCES

Hanson, G. 'Premier Gold Mining Co. Limited' in Geol. Surv. Can. Memoir 175, 1935

Burton, W.D. 'Ore Deposition at the Premier Mine' Ec. Geol. Vol. XXI, No. 6, p.578, 1926

Langille, E.G. 'Some Controls of Ore Deposits at the Premier Mine' Western Miner p.44, June 1945

Grove, E.W. 'Geology and Mineral Deposits of the Stewart Area' Bulletin 58, B.C. Dept. of Mines and Pet. Resources, 1970.

Hill, H.L. 'The Silbak Premier Mine' Western Miner, Sept. 1961.

CLAIMS

The 87 Crown-granted claims owned by British Silbak Premier Mines Ltd. are listed following this page and a map showing their location is also included. Their validity was checked at the Land Registry Office in Victoria.

The claims held total 1202.70 hectares (2971.94 acres).

One small fraction, named Irwin, precludes the claim block from being complete. The Irwin is recorded in the name of John Lunek of Box 428, Stewart, B.C.

SILBAK PREMIER MINES LTD.

CLAIM MAP.

SILBAK PREMIER MINES LTD. (.P.L.)

CROWN GRANTED MINERAL CLAIMS

Lot No.	
272	Cascade Falls No. 5
3590	Cascade Falls No. 4
3591	Cascade Falls No. 8
3592	Simpson
3593	Essington
3594	Pat Fraction
3595	Dally
3596	Pictou
3597	Rupert
3603	Cascade Forks No. 1
3604	Cascade Forks No. 2
3605	Cascade Forks No. 3
3606	Cascade Forks No. 4
3607	Cascade Forks No. 5
3608	Cascade Forks No. 6
3609	Wood Fraction
3610	Forks
3611	Trites
3688	Premier Extension No. 1
3689	Premier Extension No. 2
3690	Premier Extension No. 3
3691	Premier Extension No. 4
3692	Extension Fraction
3693	True Blue
3838	Lesley M.
3839	Lesley
3840	Limit
3841	Climax
3842	Bell
3843	Lesley No. 2
3844	Lesley No. 4
3845	Lesley No. 3
3846	Lesley No. 5
3847	Lesley No. 6
3848	Lesley Fraction
3849	Bell No. 2
3850	Mahood
3851	Ten Fraction
3852	Ax Fraction
3930	International
3931	Wood Fraction
4016	Gun Fraction
4019	Hooligan
4020	Oakwood
4021	Oakville Fraction
4022	Oakville No. 2 Fraction
4056	Loser
4133	Texada
4134	Texada Fraction
4135	Dixie
4136	Humbolt No. 2 Fraction
4137	Humbolt Fraction
4138	Paul

Lot No.	
4139	Joe Fraction
4140	Bluox
4141	Mountain
4142	Grandview
4143	Rincon
4144	U & I
4145	Simcoe
4146	Halton
4147	Bush Fraction
4148	Neill Fraction
4149	Mist No. 1
4150	Mist No. 2
4151	Mist Fraction
4279	Premier Fraction
4427	B.X. No. 1
4428	B.X. No. 2
4429	B.X. No. 3
4430	B.X. No. 4 Fraction
4431	B.X. No. 5 Fraction
4432	B.X. No. 6 Fraction
4433	B.X. No. 7 Fraction
4434	B.X. No. 8 Fraction
4767	Pitt Fraction
4047	Northern Light No. 2
4048	Northern Light No. 1 Fraction
4049	Northern Light No. 3
4050	Northern Light No. 4
4051	Northern Light No. 5
4052	Northern Light No. 6
4055	Northern Light No. 7
4057	Northern Light Fraction
4058	Northern Light No. 1
4063	Northern Light No. 8
4454	Northern Light No. 9 Fraction

LOCATION, ACCESS, TOPOGRAPHY, CLIMATE

The old mine workings are 16 miles (26 km) from Stewart, B.C. and are easily accessible by road. The old camp, now completely derelict, is 1,346 feet (400 meters) above sea level on the lower western slope of Bear River Ridge. The lowest tunnel, No. 6, and the newer 100 ton mill are at 780 ft. (237 meters) elevation.

The local area is precipitous but covered with forest or dense slide alder except on local areas of cliff.

Snowfall in some years reaches 25 ft. (8 meters); snow-free season is from late May until late September. Hence surface exploration is limited to approximately a four-month season.

HISTORY

" The history .... of the Silbak Premier mine is summarized as follows:

1910-1916: Gold and Silver ore was discovered in 1910 in the area and some of the principal claims were staked. Cascade Falls syndicate was formed and later reorganized as Salmon River Mining Company. Tunnel work was done on the No. 1 and No. 2 levels.

1916-1919: Pat Daly leased the property, shipped a few tons of high grade and, after an inspection by R.K. Neill the exploration group of Trites, Wood and Wilson bonded the property. Bonanza high grade was discovered and shipments made to Tacoma.

1919: In the fall of 1919 the American Smelting and Refining Company acquired a 52% interest in the property, for $1,000,000 cash, from Trites, Wood, and Wilson. During 1919 and 1920, shipments of 1,287 tons of crude ore were made from the Premier mine, which averaged 4.24 oz. gold and 141 oz. silver per ton. Milling operations started during 1921.

1924: Shipment of ore from the B.C. Silver started, and up to 1927 totalled 1,103 tons averaging 1.92 oz. gold per ton and 76 oz. silver per ton.

1935: Silbak Premier Mines was formed to acquire the Premier Gold Mine, B.C. Silver, and Sebakwe Mines. Selukwe Mining Company of London, England, controlled the latter two properties and, upon the merger, received a substantial interest in Silbak Premier Mines.

1953: Silbak Premier closed down due to low base metal prices.

1956: The Silbak Premier mine and mill were rehabilitated, but fire destroyed the mill after only a few weeks operation.

1958: The Premier Border group of eleven Crown Granted mineral claims were purchased outright.

The upper levels of the mine were "thrown open" to lease, as the company records showed no reserves above 2 level. On September 23rd, 1959 a one year lease was granted on a part of the upper levels of the mine. The lessees shipped ore during the fall of 1959 and summer of 1960.

1961: Shipments of high grade were continued by the company upon the termination of the lease, and diamond drilling .... located the extension of high grade below 1 level and, in addition indicated sufficient mill feed ore which, together with the older reserves in the mine, (justified) building a mill of about 100 tons per day capacity."

(H.L. Hill 1961)

1964

A second-hand mill of approximately 100 tons capacity was installed on the property and operated until low metal prices coupled with low grade ore reserves contributed to closure in 1968.

1971

Geophysical exploration by Granby led to discovery of some mineralization that was not extended in the continued drilling. Most of the drilling was in an area distant from the old mine workings.

Productive. (Premier and Silbak Premier)

		------------Recovery per ton						
Year:	Tons:	Au. Oz.	Ag. Oz.	Pb. %	Zn. %	Cu. %	Cd. %	Dividends
1918	26	7.0	88.0	-	-	-	-	-
19	488	6.6	221.0	-	-	-	-	-
20	799	2.86	97.0	-	-	-	-	-
21	18,750	1.88	60.5	-	-	-	-	$ 400,000.
22	102,334	1.21	41.8	-	-	-	-	2,750,000.
23	145,665	0.80	18.9	2.1	-	-	-	1,738,000.
24	159,014	0.875	19.0	1.42	-	-	-	1,715,000.
25	168,557	0.70	14.4	2.34	-	-	-	1,600,375.
26	230,987	0.527	12.6	0.97	-	-	-	1,600,437
27	244,172	0.48	12.8	4.70	-	2.57	-	1,601,250
28	275,811	0.47	8.6	5.30	-	3.73	-	1,300,000.
29	266,972	0.364	8.7	3.94	-	2.43	-	1,208,250.
1930	256,836	0.338	9.9	2.40	-	0.98	-	1,203,281.
31	242,317	0.328	6.25	2.42	-	0.76	-	601,828.
32	221,718	0.343	7.03	2.45	-	0.78	-	691,535.
33	185,421	0.268	5.43	-	-	-	-	650,985.
34	153,950	0.17	4.30	(heads)	-	-	-	600,000.
35	149,672	-	-	-	-	-	-	650,000.
36	192,442	0.225	5.2	-	-	-	-	800,000.
37	201,206	0.237	4.54	-	-	-	-	Nil
38	184,606	-	-	-	-	-	-	200,000.
39	169,164	0.24	5.25	-	-	-	-	400,000.
1940	171,504	0.216	3.58	-	-	-	-	400,000.
41	170,504	-	-	-	-	-	-	400,000.
42	140,567	0.259	-	-	-	-	-	400,000.
43	93,003	0.238	3.58	-	-	-	-	325,000.
44	68,496	-	-	-	-	-	-	125,000.
45	65,801	-	-	-	-	- -	-	100,000.
46	34,804	0.234	1.10	1.68	-	-	-	25,000.
47	59,343	0.22	1.49	2.25	-	-	-	Nil
48	41,360	0.207	1.46	1.97	1.36	-	.014	Nil
49	10,348	-	-	-	-	-	-	Nil
1950	79,167	0.205	1.69	2.0	-	-	-	Nil
51	67,844	0.101	1.95	2.63	3.87	-	.027	Nil
52	90,762	0.098	1.73	2.23	3.37	-	.025	50,000.
53	40,322	0.123	1.94	2.70	3.48	-	.068	Nil
1954 to 1958 - closed down				DIVIDENDS		TOTAL		$21,535,941.
1959	1,282	5.89	158.7	6.41	7.85	0.64	-	-
60	62	10.48	271.4	5.15	8.64	-	-	-
61	831	7.78	135.8	3.36	3.48	-	-	-
62	465	7.0	112.4	3.15	4.6	-	-	-
63	96	6.6	98.0	3.12	4.6	-	-	-
64	2,712	0.71	14.4	-	-	-	-	-
65	2,336	0.28	6.4	0.15	0.28	-	-	-
66	14,189	0.57	11.6	0.30	0.42	-	-	-
67	6,694	0.54	12.4	0.35	0.46	-	-	-
68	4	12.75	182.0	1.28	2.15	-	-	-
Avge.	4,722,413	0.384	8.03	2.5	3.0	1.9		

This history leads to the important conclusion that by far the best grade ore was produced in the earliest years of operation, except for the new 'glory-hole' discovery in 1959. The high grade was all from the upper levels of the mine.

E.W. Grove (1971) provides a summary of production as follows. Note that he shows a higher grade of silver than that in the above calculations.

RECORDED PRODUCTION OF THE PREMIER VEIN SYSTEM

Section	Year	Ore Shipped or Treated	Gold	Silver	Copper	Lead	Cadmium	Zinc
			Oz.	Oz.	Lb.	Lb.	Lb.	Lb.
Silver	1924-27	1,103	2,218	88,058	290	10,787	(?)	(?)
ier	1918-37	2,817,327	1,380,906	33,652,118	2,329,630	22,673,075	(?)	3,194,284
ak Premier	1936-68	1,852,845	436,038	7,292,860	1,967,247+	36,236,085	177,784	13,050,522
ier Border	1950-53	42,995	3,104	86,695	(?)	3,586,976	19,098	4,344,069
Totals:	1918-68	4,714,270	1,822,266	41,119,731	4,297,167+	62,506,923	196,882+	20,588,875+

" Ore reserve estimates have not been published by the company since 1961 when the available ore was estimated at about 170,000 tons, including broken ore, measured ore, and indicated ore found below 6 level by diamond drilling (Minister of Mines, B.C., Ann. Rept., 1964, p.22). Grades are difficult to estimate for the old working places as company records of copper, lead, and zinc values are generally incomplete. Of the 400,000 or more feet of diamond-drill core obtained by the company, virtually none has survived the climate and the old drill logs are of rather limited use. The potential of the property lies in a complete geological reappraisal and a new look at the oreshoots and their apparent controls." (Grove EW 1971.)

MINE WORKINGS

Plans of all of the mine workings and several sets of sections have been studied.

> " There are approximately 46 miles of underground workings, consisting of 13 levels and sub-levels, 5 short internal shafts and several vertical ore-passes, extending over a horizontal distance of 9000 feet and a vertical range of 1650 feet. There are 7 adits, only 4 of which were in recent use. The "Glory Hole", where the ore was stoped to the surface, is about 600 feet long by 200 feet wide. The major ore-shoots extend northeasterly at irregular intervals from the Glory Hole and do not again reach the surface. They have been largely stoped and are generally inaccessible above the main haulage level. Northwesterly from the "Glory Hole", a smaller "string" of ore-shoots have been stoped to the erosion surface. This "open-V" pattern is related to rock structure and is repeated on a smaller scale in the "West Ore Zone" (Premier Border) 600 feet west of the Main Zone. Whereas the ore shoots in the Main Zone bottom a short distance below the main haulage (#4) level, the ore in the West Zone extends 750 feet below this elevation."
>
> (W.N. Plumb 1955)

E.W. Grove (1971) provides a number of very useful maps showing the mine workings.

REGIONAL GEOLOGY

E.W. Grove (1971) and G. Hanson (1935) have mapped the district, Grove in more detail than Hanson. Grove reports both in his text and in personal conversation that a 'belt of shearing' hosts most of the ore bodies in the district, including Premier. The shear zone is in andesitic rocks, is locally silicified, and is capped by later sedimentary rocks.

The writer notes that this environment typifies mines such as Western at Buttle Lake, Twin J. at Duncan, and Homestake near Kamloops, all of which contain a combination of gold, silver and of copper, lead and zinc sulphides and all of which are believed to be volcanogenic.

LOCAL GEOLOGY

ALTERNATIVE CONCEPTS

Premier was explored, mined, and closed down under the premise originally advanced in 1923 (A.H. Means) that the ore was deposited by 'replacement' in and near two intersections of two sets of mineralized 'shear zones'. One intersection was believed to produce the main series of stopes, and the other produced the Premier Border series.

However, several geologists and engineers, including the writer, were aware some years ago that the geology was not well understood. Even W.H. Means recognized in 1923 that the hypothesis of 'replacement' had its problems.

> "The silicification which is intimately associated with the ore penetrates the wall rock and gradually fades out as the distance from an ore body increases. The examination of thin sections indicates this silicification to be later than calcite-sericite wall rock alteration. <u>There is no indication whatever that there has been any preference whatever for a particular type of wall rock, i.e. tuff or porphyry</u>."

Hanson (1935) includes a plan and set of sections that show the spatial relation of the mineralized shear zones to the porphyry and greenstone. These sections show mineralized shear zones dipping south-easterly as well as northwesterly, and thus present the earliest reported evidence that mineralization could have vented onto a then-

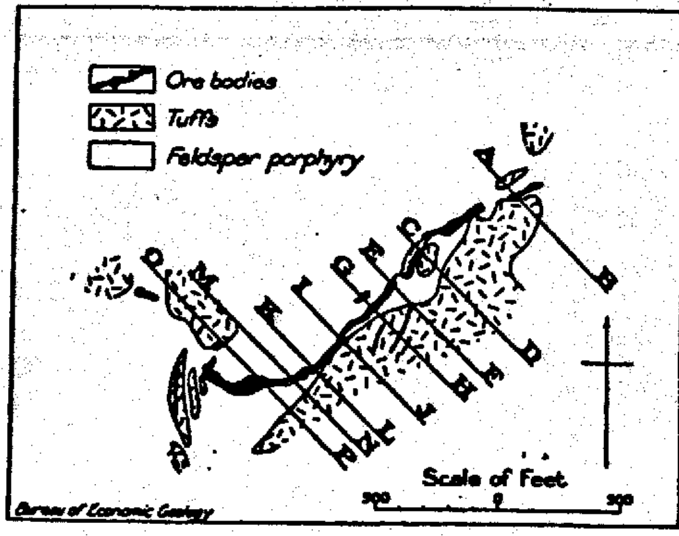


Figure 16. Plan of No. 2 level (elevation 1,550 feet), Premier mine (A-B, C-D, etc.: lines of section, *See* Figure 17).

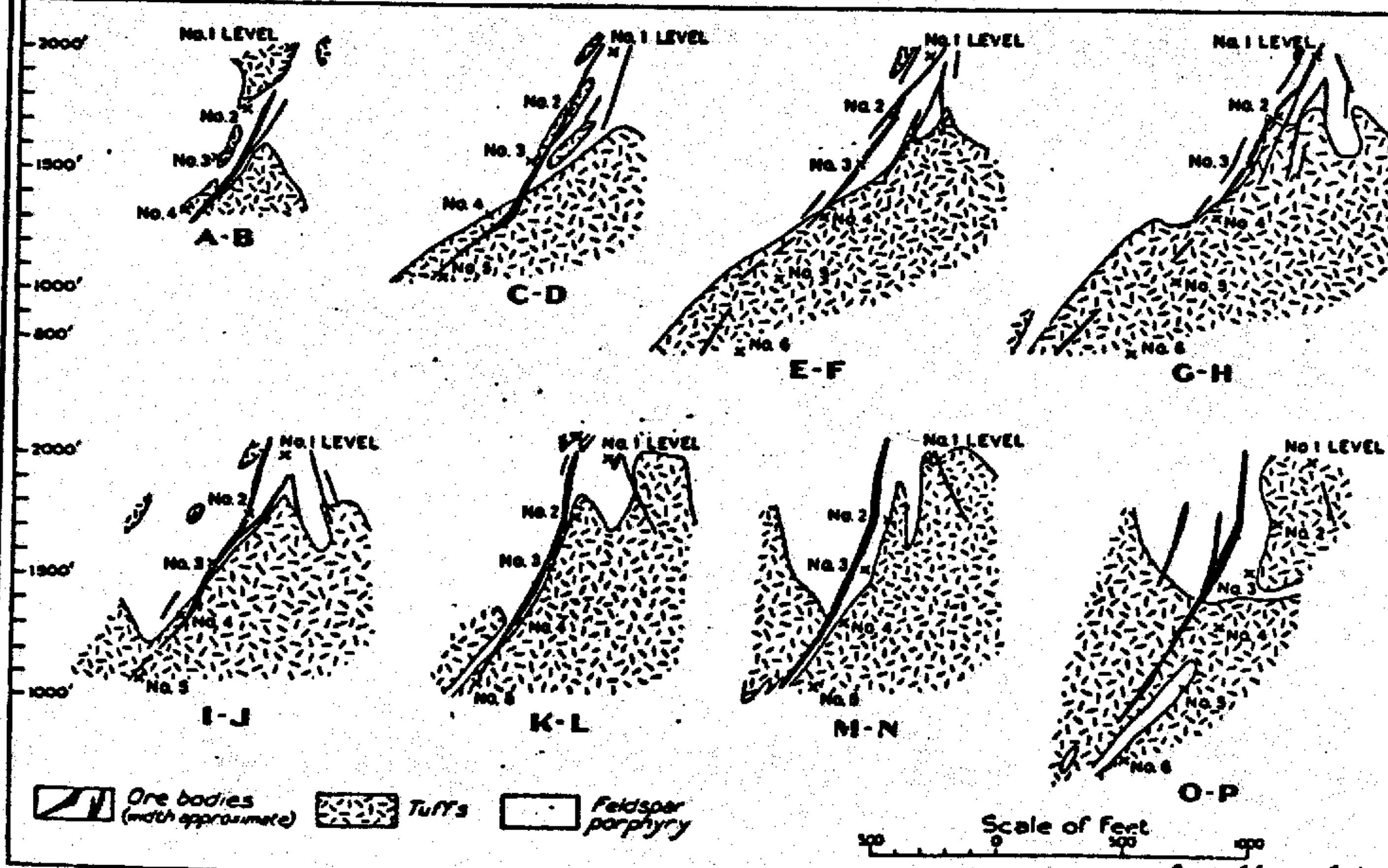


Figure 17. Vertical sections (*See* Figure 16), Premier mine; widths of ore-bodies approximate only.

Configuration of Premier ore-bodies showing relation of ore-bodies to feldspar porphyry and to tuffs (greenstone). Note the southeasterly dip of ore on sections G-H, I-J, K-L, M-N, and O-P. (From Geol. Survey of Canada, Mem. 175) existing surface, and, upon ejection, could have been deposited on both flanks of the surface of the volcanic pile. (See sketches on preceding page)

The 'shear zones' were recognized to be capped. Means states:

> "In general the values carried by outcrop material are low, very low in comparison with the ore which in some cases underlies them."

E.G. Langille, mine geologist during the latter years of full production, had the advantage of access to almost all of the mine workings for many years. He followed Means' hypothesis concerning shearing.

> "It became apparent at an early stage in the development of the Premier Mine, that ore zones were controlled by northeast and northwest fracture systems. (1) The larger stopes were located in that section, where an exceptionally strong northwest shear zone, swinging in a wide arc to partly merge with a major northeast shear zone, fractured the porphyry host rock over a wide area.
>
> While the more productive area at the junction of the two fracture systems was energetically developed during the preliminary stages of the mine development, the individual fracture systems leading from this area were not neglected. The earlier workings of the mine gradually assumed a crescent-shaped pattern, as narrower stopes were brought into production along the two fracture systems. The wide stopes, together with narrower ones in branching veins at the junction of the two shear systems, formed the body of the crescent-shaped mine workings.

"Subsequent Mine Development

Testing for depth conditions by diamond drilling and driving the lowest adit, known as number 6 level, showed that most of the ore shoots bottomed above number 5 level; and that only the roots of some persisted down to the lowest level. Furthermore, at that time, the northwest shear had been sufficiently developed to make it quite apparent that the potentially productive horizon of this structure would outcrop on the mountain side, not far from its junction with the northeast zone. Although rapid vertical zoning bottomed the ore shoots at comparatively shallow depths, and topographical relief abruptly terminated the upper favorable horizons of the northwest shear zone, there were apparently no physical limitations to the northeast zone. Consequently, major developments were eventually directed almost entirely in that direction, or in the hanging wall of that zone.

The initial development work along the northeast zone disclosed scattered ore shoots along the strike of the zone, while later efforts discovered various sized ore shoots arranged en echelon. Some of the ore shoots were less than 100 feet in length, so that in drilling for paralleling or en echelon arranged ore shoots, it became necessary to space the holes close enough to pick up any of these short ore bodies.

Some important ore deposits out in the hanging wall of the northeast zone were discovered by the diamond drilling program. This proved to be a somewhat smaller replica of the crescent-shaped fractured area, which had been so productive in the initial mining operations. Here again, northeast and northwest shearing paralleling that in the original part of the mine, merged to form a major ore body."

(Langille - 1945)

(This major ore body is known as the 'Premier Border')

ROCK TYPES

Purple Tuffs

> "The 'purple tuff' should be named more accurately 'purple breccia'. The fragments range in diameter from a few tenths of an inch to greater than one foot. They are composed of mauve, purple, and purplish-orange fragments (many of them purple porphyry) in a matrix of purple tuff, greenish tuff, and purple porphyry. The bulk of the rock is closely packed ovoid fragments. In a few places however aphanitic purple rock shows no fragments. The borders of the purple tuff lenses, where observed, grade into greenstone; the purplish rock grades into patchy purple and green, and thence to green."
>
> (Seraphim 1955)

Langille described the nature of the 'purple tuff' capping in detail and recognized that it was unconformable to the porphyry and greenstone that host the ore bodies.

> "The purple tuff represents what might be considered an extreme degree of non-competence. In no case has it been found to bear even the disseminated pyrite, with which most of the other formations are impregnated. It is distinctly clastic in appearance, consisting of broken crystals and rock fragments in a fine grained rock mass. The lack of major fracturing is more than compensated for by the numerous incipient shears, which are usually slickensided and present in sufficient numbers to render the formation weak and somewhat fragmental...."
>
> (Langille op cit)

Porphyry

" The large outcrop of the Premier porphyry formation, part of which is found on the westerly side of the Premier Mine property, is probably that of a stock. Its surface outline has never been completely mapped, partly due to the heavy overburden and partly to the fact, that, outside of the Premier property, no detailed geology has been done.

The stock appears to be at least 3000 feet in width occupying a position on the western side and roughly paralleling the mine property. There are several roof pendants of the intruded Bear River formation within the stock boundaries, and, conversely, the stock has many outliers in the form of dyke-like bodies intruding the Bear River formation. Most of the Premier ore bodies are associated with these outliers. Their structure, and the relationship of the ore bodies to them, are therefore important considerations when endeavouring to predict the recurrence of Premier ore bodies.

The Premier porphyry outliers are roughly tabular in shape. Schofield and Hanson considered them to be sills (3) and they have generally been so termed. White (5) called them irregular sill-like bodies. Burton (6) termed them an irregular stock work, while Hanson (2) simply referred to them as sill-like tongues.

The accompanying drawings and cross-sections clearly demonstrate their dyke-like structure. Furthermore, it appears quite evident from these that the porphyry outliers are definitely not sill formations. In the first place, the strikes of the tabular porphyry bodies seldom approach within 20^{o} of the N.17^{o}E. strike of the purple tuff. It has been pointed out that the purple tuffs serve as pilot strata defining the dip and strike of the other water-lain tuffs in the Bear River formation, within which the Premier porphyry is intruded. If the porphyry tabular bodies are sill structures, then their strikes and dips would conform with those of the purple tuff.

The strikes of the porphyry bodies may be readily seen from a plan of the mine workings. Most of the drifts along the northeast zone follow or parallel the porphyry-greenstone contacts. The directions of the drifts are for the most part somewhat more easterly than the N.17^{o}E. strike of the intruded tuff.

The various cross-sections disclose a marked dissimilarity between the dip of the pilot strata of the Bear River formation and that of the tabular porphyry structures. Sections all show a noticeable consistency in the dip of both the porphyry intrusives and the purple tuff marker strata for the Bear River volcanics. An average dip of approximately 65° northwest for the former and 17° in the same direction for the latter, clearly demonstrated that these are not conformable formations, and therefore the porphyry tabular bodies are not sills."

(Langille,op.cit.)

R.H. Seraphim spent several months in 1955 mapping a key area of surface and relogging about 500 drill holes, the purpose being to determine the structure of the porphyry that hosts or is proximate to the bulk of the high grade ore.

" The surface mapping shows two zones of porphyry. The northern zone appears conformable to lenticular bodies of 'purple tuff', which are used as horizon markers. The southern porphyry zone is composed of a number of bodies similar in strike but dipping more steeply west than the 'purple tuffs'.

The southern bodies may be dikes or sheets feeding the northern zone which is proably a flow or sill. The junction of the northern and southern zones forms a bulge of porphyry. It is in this porphyry bulge that most of the bonanza type Premier ore occurred. The ore became marginal where the mineralized zone passed into greenstone at depth below the porphyry bulge."

(Seraphim 1955)

Seraphim recognized two types of porphyry.

" The Premier porphyry is composed essentially of orthoclase phenocrysts in an aphanitic or fine-grained andesitic matrix. The rock is generally green with greyish alteration. Its fracture is more blocky than that of the greenstone. Two ranges in size of phenocrysts are apparent. One lies between the approximate limites of 1/32" to 1/8" , and the other between limits of 1/4" to greater than 1", that is, very few phenocrysts, if any, are between 1/8" and 1/4" in diameter. Rock containing only the smaller phenocrysts is called 'single stage porphyry' - rock containing both the larger and smaller phenocrysts is called 'two stage porphyry'. Rock containing only the larger phenocrysts has been observed, but has a cloudy matrix in which the outlines of the smaller phenocrysts may be obscured.

The two-stage porphyry contains on the average only one or two large phenocrysts in two or three square feet of exposed surface. Thus, the odds are that only one large phenocryst would be observed in 10 or 15 feet of core. Thus where the core is dirty and/or contains quartz stringers, two-stage porphyry may be incorrectly recorded as single-stage porphyry.

Much of the porphyry (perhaps 50%), including both stages, is cloudy - the phenocrysts merge into the matrix with megascopically gradational boundaries. This 'cloudy' porphyry grades into greenstone, that is, the phenocrysts become increasingly cloudy until none can be distinguished from the matrix, and the rock is consequently recorded as greenstone.

The single-stage porphyry is in places brecciated and in one locality a fragment of porphyry was found, apparently isolated in greenstone breccia a few inches from the contact of solid porphyry. A zone of highly brecciated single-stage porphyry was observed on surface near co-ordinates 7000N-4500E. A similar zone occurs in D.D.H. -B.C.S. "D" in the same area. Another zone of this type was observed one or two miles north of the map area. <u>These zones suggest that at least the single-stage porphyry, if not also the two-stage porphyry, is in places flow rock."</u>

Geologists have long recognized that a single flow, sill, or dyke, may contain rock of several types, because of more rapid cooling of its contacts with respect to its interior portions.

This investigation thus provided results that were too far 'ahead of their time', in that the porphyry was deduced to be formed in part as "dykes or sheets feeding the northern zone which is probably a flow or sill". That is, part of the porphyry was suspected to be rock filling a fissure, from which a flow (or sill) of the same rock was ejected. Seraphim was not aware at the time, in fact it would have been heretic to suggest, that the accompanying ore zones were formed in the same fashion, that is partly within submarine vents and partly as sulphides ejected from the vents onto the volcanic rocks on the ocean floor in accordance with today's concepts.

Rhyolite?

W.H. Means (op.cit. p.10) reported

"The silicification which is intimately associated with the ore penetrates the wall rock and gradually fades out as distance from an ore body increases."

W.H. White (1939 p.13)

"Silbak Premier ore consists of about 20% base metal sulphides in a gangue of quartz and calcite."

Means (op.cit.) also reports that

"Wall rock alteration consists of calcite and sericite."

The writer suggests that some of these geologists today, including himself, might upon re-examination call the host rock rhyolite.

These descriptions all affirm that the rocks at Premier are typical, particularly with the presence of purple tuff and breccia 'cap-rocks' and the evidence of vent-flow relations, in both lithology and structure of those hosting volcanogenic deposits.

MINERALIZATION

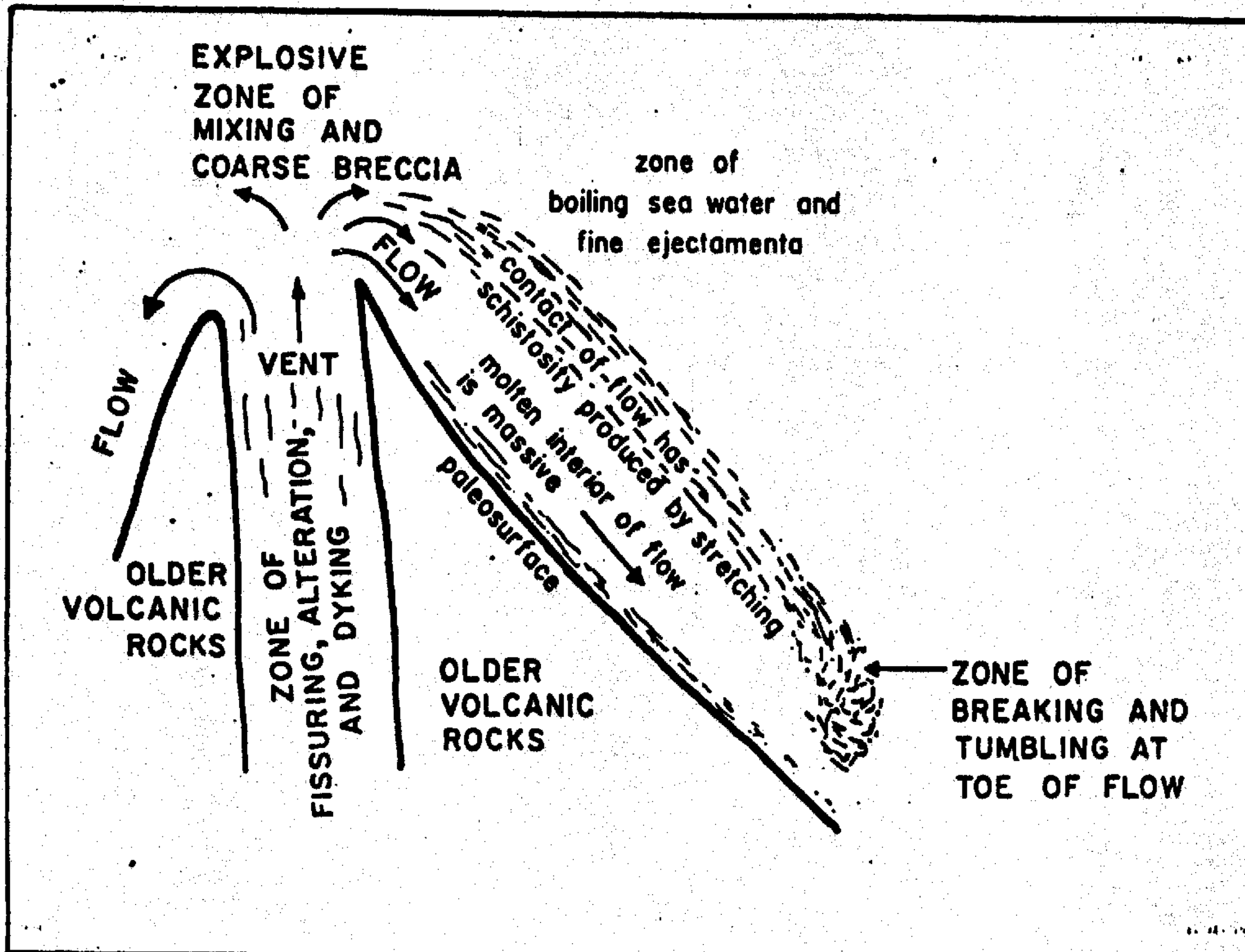
The nature and distribution of ore was indicated in a general way in the statistics of production and dividend payments listed in section titled "HISTORY". Both A.H. Means and W.H. White conducted detailed laboratory investigations which showed that, in the main Premier orebodies,silver and gold were in greatest concentrations in the stopes at the upper levels. White (op.cit. p.13) reports

> " Silbak Premier ore consists of about 20% base metal sulphides in a gangue of quartz and calcite. The minerals in order of abundance are: pyrite, sphalerite, galena, chalcopyrite and pyrrhotite, with small and varying amounts of gold, electrum, argentite, pyrargyrite, polybasite, and locally native silver."

White (op,cit. p.13) recognized the two types of ore which characterize volcanogenic deposits

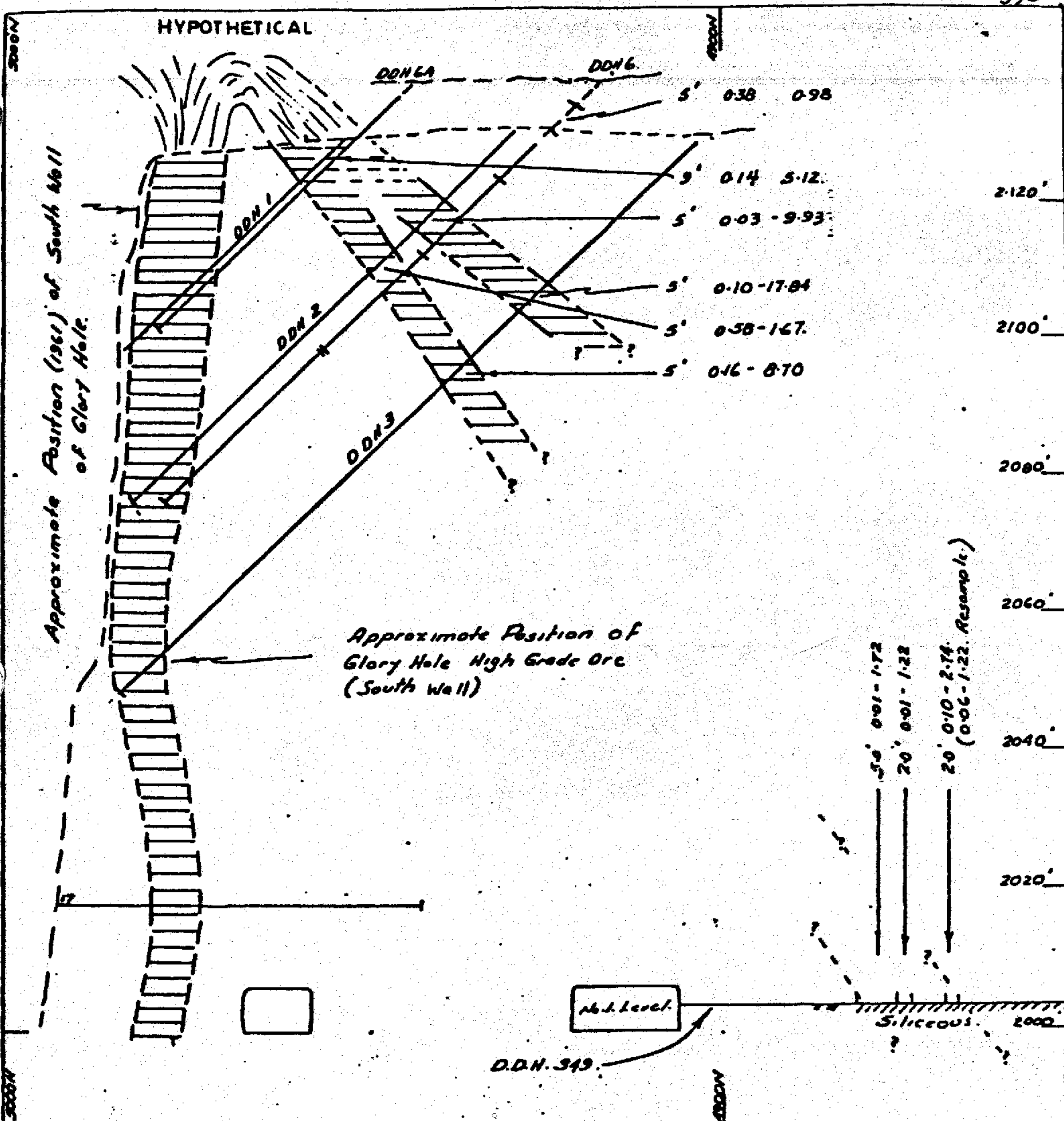
> " Two general types are recognized, one in porphyry characterized by irregular stringers and bunches of sulphides, partially digested fragments of wall rock, and by gradational walls; (vent or 'oko' ore in today's classification) while the other in greenstone, has abrupt walls and unaltered fragments of wall-rock around which the sulphides are often banded." (stratiform or 'kuroko' ore in today's classification)

The writer adds that volcanogenic ore bodies do, in many localities, contain high grade gold and silver



Diagramatic sketch of a vent in a Volcanogenic deposit.

Figure 3.



Section at 20 ft.=1inch on south wall of the Glory Hole showing inverted U or V shaped configuration, perhaps conforming to an area of volcanic venting rather than a northwest dipping fracture system.

Figure 4

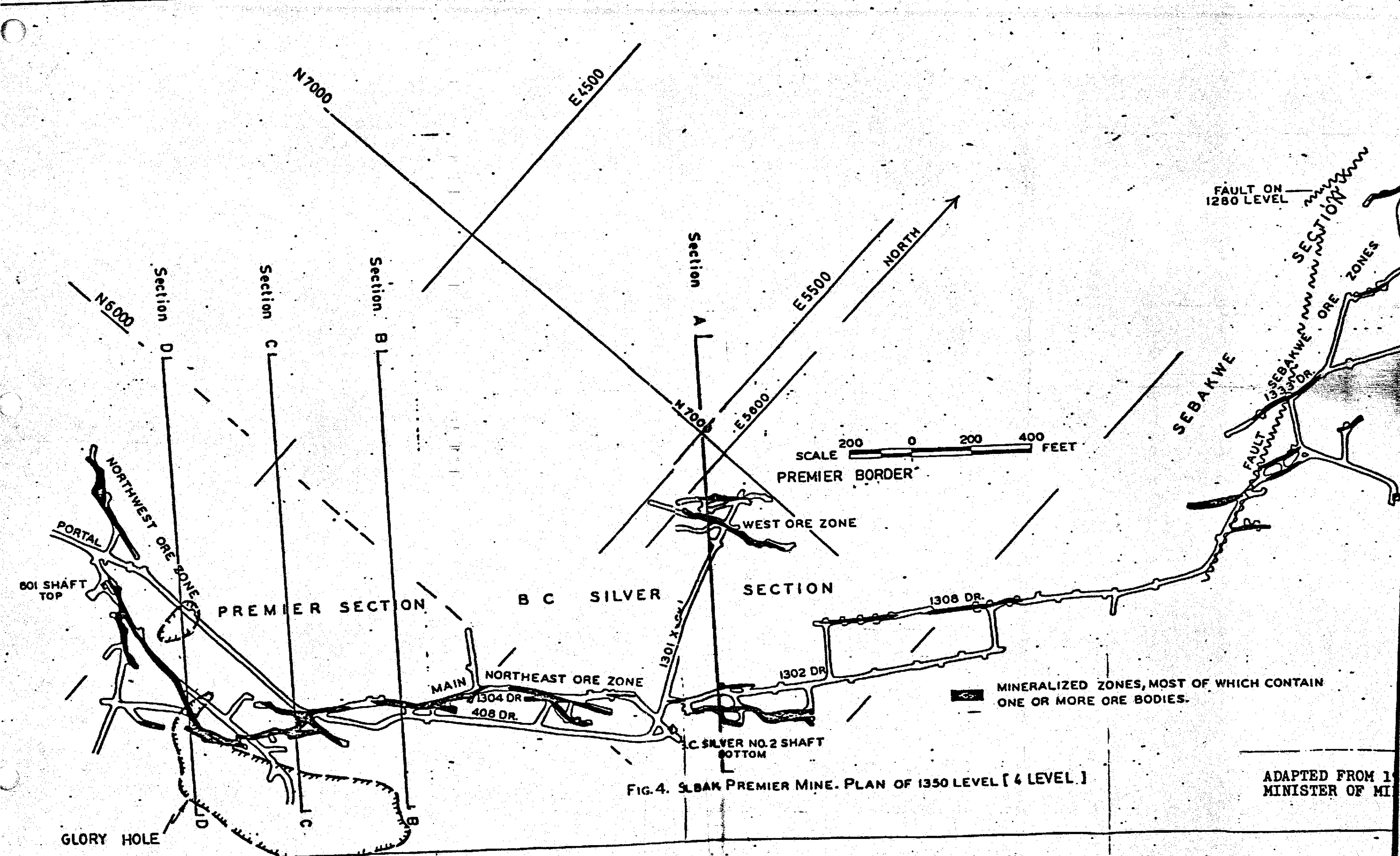
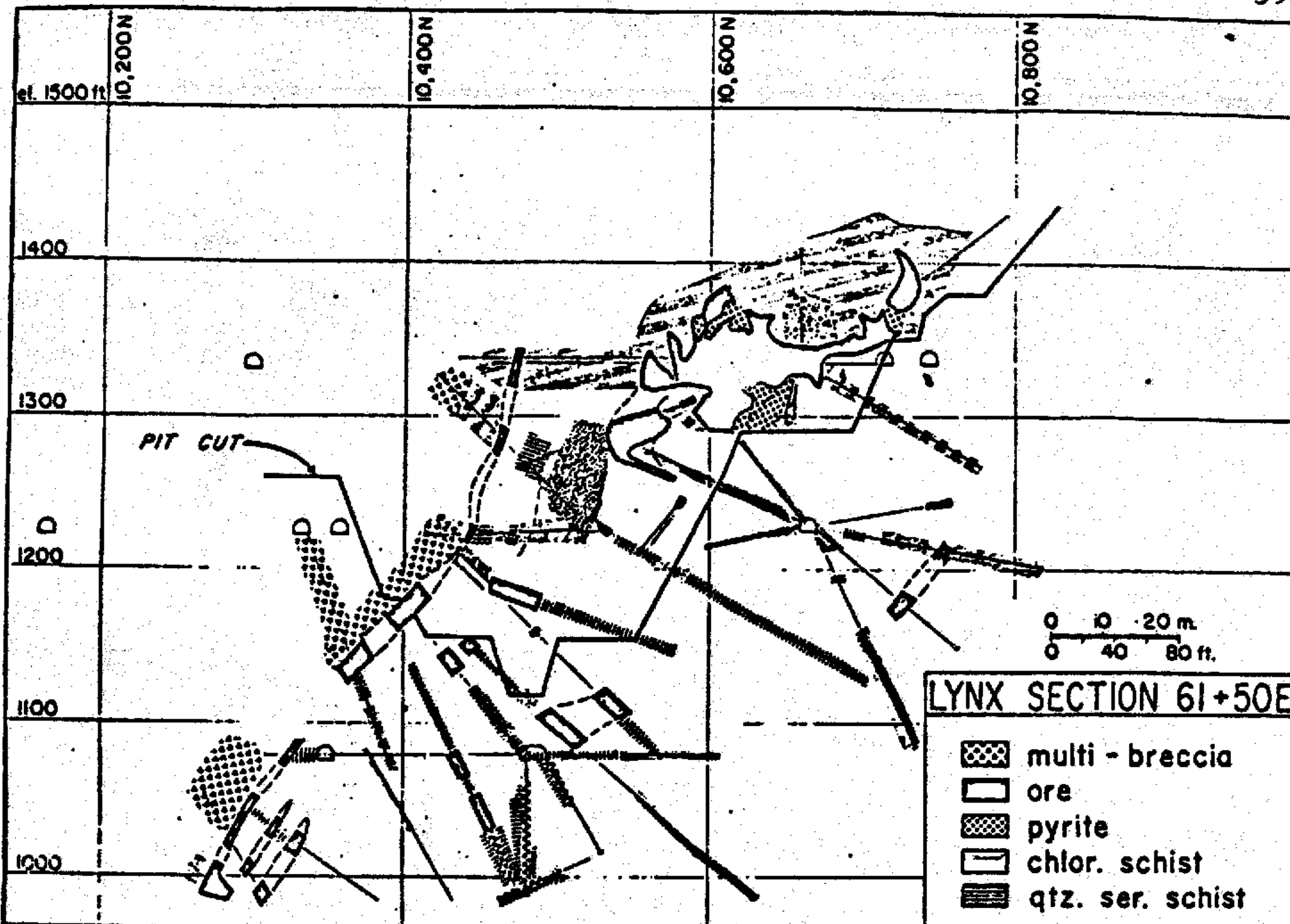
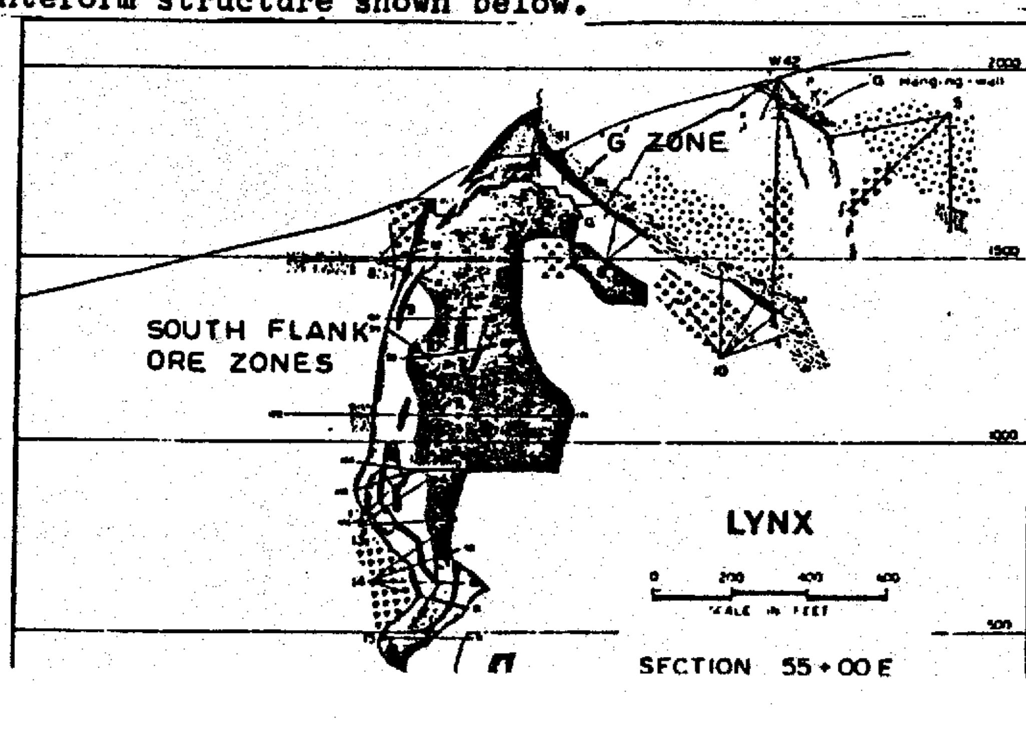


FIG. 4. SLBAK PREMIER MINE. PLAN OF 1350 LEVEL [4 LEVEL]



The irregular 'mushroom' configured ore zones typical of the uppermost part of many volcanogenic deposits is shown in Western Mines' pit at Buttle Lake. Note the north dipping 'G' Zone and south flank ore zones of the anteform structure shown below.



The importance of the classification comes in the zones selected for intensive exploration. If we accept that the mineralization is volcanogenic, and is genetically related to the porphyry, then exploration of all of the uppermost portions of the porphyry, including roof and flanks, where it contacts the greenstone, should be given highest priority. Further, the search should be conducted under the premise that the two types of ore, described above by White, should occur in structures with cross sections which are either 'mushroom' shaped as in fig. 5 below or, if an ore vent ejected stratiform ore onto a surface that was sloping at the time, then an inverted U or V shaped structure as shown in fig. 4 below. Perhaps inverted U or V shapes were the basis for Langille's statement regarding stopes in tandem -

> "Developments to the eastward from the earlier stopes which are located in the southwestern part of the mine, followed along two successive patterns. In the first case the stopes occurred in tandem along a northwest direction." (Longille op.cit. p.50).

> "The reported attitude of the northwesterly trending zone is questionable. It appears to be formed by a number of smaller zones of different attitudes, perhaps related to small shear zones and/or greenstone-porphyry contacts. However, the stope maps do indicate that this northwest-trending zone does, in general, dip vertically. It does not seem to have the strength of the north-east trending zone. Both zones appear to decrease in strength with depth, the obvious reason being a change in host rock type from the porphyry to greenstone."

MINERAL RESERVES

'Ore' Reserves were reported in 1963 by Hill-Starck as follows:

Block No.	Location	Tons	Gold oz/T	Silver oz/T	% Pb.	% Zn.
1.	Glory Hole	22,010	0.574	16.98	-	-
2.	Below 3 Level	82,775	0.25	2.52	1.60	2.40
3.	Premier Border	81,561	0.06	1.78	3.83	5.72

The 'Glory Hole' block was mined subsequently by Bralorne Pioneer. Blocks 2 and 3 are believed to remain in place, and can be re-evaluated eventually.

Mineral reserves in the vicinity of the glory holes can be calculated eventually if some additional up-to-date assay plans are located, or alternatively, after a drilling program in the vicinity of the glory holes is completed. The assay plans examined in storage at Stewart do not include plans of the southwest parts of either 1 level or 110 sublevel. These areas were mined from 1959 to 1968 by leasees, by Hill, Starck and Associates for Silbak Premier,and by Bralorne Pioneer. Bralorne-Pioneer's data has not been obtained.

The writer's opinion, based on one day's study of assay plans covering 1 and 110 sublevels, is that the

1974 estimate of open pit reserves by a major mining company (name withheld) does not allow for open-pitting with selection. The company reported a grade of 0.03 oz. gold and 0.75 oz. silver for 7,000,000 tons, minus that mined by former operators. (The 1974 plans and sections are not available to the writer at present.) The ore configuration presumably included a block without selective sorting. The writer observed that the assay plans that are available do show discreet zones locally up to fifty feet or more wide with abrupt cut-offs, and, judging from a quick review without calculations, grading higher than the 1974 reported grade of 0.03 oz. gold and 0.75 oz. silver. Therefore a detailed program involving study of the available assay plans, together with fill in and check drilling, and an underground investigation if possible to determine what has been stoped, certainly is warranted. This program should result in determination of a 'mineral reserve' with several grade shcedules, the highest having a grade several times that of the 1974 estimate. Tonnage would be proportionately lower than that calculated in 1974. If the crest of the deposit has a 'mushroom' configuration typical of volcanogenic deposits, then the results might be as successful as the pit operation which brought Western Mines to its maturity by recouping its pre-production and mill installation (capital) costs.

EXPLORATION AREAS

The geological study, accompanied and followed by a review of the available drill hole logs and assay plans, led to the conclusion that a number of intercepts approaching ore in grade-widths in the original Premier Mine attract further exploration. The previous operators explored the north and northwest flanks of the arcuate zone of vents in detail. Topography led to access from the north and west. **Hence, the south and southeast** flanks are not explored in sufficient detail for two reasons: lack of suitable underground drilling sites and the geological theory prevailing during the mine's productive lifetime. Some, but by no means all, of the intercepts deemed to be worthy of more extensive drilling programs are shown on the accompanying four cross-sections (pocket).

Numerous surface showings are reported and documented on the claim block. All of these require re-assessment which should be completed in the summer season.

R. H. V. Thomas

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GEOLOGICAL ENGINEERING

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VANCOUVER, B.C. V6C 1V5

CERTIFICATION

I, Dr. R.H. Seraphim, of the City of Vancouver, Province of British Columbia, hereby certify as follows:

1. I am a Geological Engineer residing at 4636 West 3rd Avenue, Vancouver, B.C., and with office at #316, 470 Granville Street, Vancouver, B.C.

2. I am a registered Professional Engineer of British Columbia. I graduated with a Master of Applied Science from the University of British Columbia in 1948, and with a Doctor of Philosophy in geology from the Massachusetts Institute of Technology in 1951.

3. I have practiced my profession continually since graduation.

4. The attached report is based on a review of the data of Silbak Premier Mines Ltd. in the company records in reports of the Minister of Mines, and in technical journals. I did not re-examine the mine itself.

5. I consent to the use of this report in the raising of funds for this project.

DATED at Vancouver, British Columbia, this 8th day of March, 1979.

R.H. Seraphim

R.H. SERAPHIM, Ph.D., P.Eng.

APPENDIX 1

MINERALIZED INTERCEPTS IN SOME DRILL HOLES

SHOWN ON SECTIONS A TO D

(Some of the intercepts, particularly those indicated by an asterisk, may have been mined by previous operators. Many of the intercepts do not appear in the data examined to have been stoped and should be checked by underground examination to determine if they remain 'in place'. See individual drill hole plots.)

SECTION B

Drill Hole	Footage (Feet) From	To	Intercept (Feet)	Au. (oz.)	Resample	Ag. (oz.)	Resample
#261	30.0 -	40.0	10.0	0.02		2.18	
	40.0 -	50.0	10.0	0.01		2.16	
	60.0 -	70.0	10.0	0.02		1.82	
	70.0 -	80.0	10.0	0.02		1.66	
	220.0 -	230.0	10.0	0.01		1.28	

SECTION C

Drill Hole	Footage (Feet) From	To	Intercept (Feet)	Au. (oz.)	Resample	Ag. (oz.)	Resample
#238	* 150.0 -	155.0	5.0	0.18	(0.24)	27.34	(22.33)
	155.0 -	160.0	5.0	0.03		2.94	
	160.0 -	170.0	10.0	0.02		1.22	
	401.0 -	406.0	5.0	0.01		2.68	
	406.0 -	413.0	7.0	0.02		3.90	
#245	* 0.0 -	6.0	6.0	0.06		11.18	
	* 11.0 -	20.0	9.0	0.03		1.70	
	* 20.0 -	21.0	1.0	0.40		28.08	
	40.0 -	50.0	10.0	0.01		2.32	
	50.0 -	60.0	10.0	0.01		1.24	
	70.0 -	80.0	10.0	0.08		6.12	
	R.S.* 70.5 -	72.0	1.5	0.46		44.34	
	150.0 -	160.0	10.0	0.01		1.68	
	390.0 -	400.0	10.0	0.02		2.50	
#272	60.0 -	70.0	10.0	0.01		1.96	
	90.0 -	97.5	7.5	0.02		1.74	
	97.5 -	100.0	2.5	0.08		1.20	
	100.0 -	110.0	10.0	0.02		1.38	
	130.0 -	140.0	10.0	0.04		1.58	
	140.0 -	150.0	10.0	0.04		0.36	
	160.0 -	170.0	10.0	0.02		1.86	
	440.0 -	450.0	10.0	0.01		1.64	
	590.0 -	601.0	11.0	Tr.		1.40	
#472	44.0 -	46.6	2.6	0.01		0.32	
	* 46.6 -	47.6	1.0	0.46		39.62	

* Stoped ?

SECTION C (Continued)

Drill Hole		Footage (Feet) From		To	Intercept (Feet)	Au. (oz.)	Resample	Ag. (oz.)	Resampl
#477		60.4	-	60.6	0.2	0.22		313.18	
		110.0	-	116.5	6.5	0.01		3.04	
	*	116.5	-	120.0	3.5	0.04	(0.04)	13.84	(11.00)
		120.0	-	130.0	10.0	0.02		2.30	
	*	173.0	-	173.7	0.7	0.16	(0.12)	19.28	(18.04)
	*	173.7	-	176.0	2.3	0.08	(0.06)	25.20	(12.30)
		455.0	-	460.0	5.0	0.04		3.32	
		460.0	-	467.0	7.0	0.02		8.22	
		756.5	-	757.0	0.5	0.10		1.90	
		764.5	-	765.0	0.5	0.08		8.40	
#404		20.0	-	30.0	10.0	0.04		1.72	
	*	30.0	-	40.0	10.0	0.66		0.38	
		146.0	-	146.7	0.7	0.16		2.36	
		156.0	-	159.0	3.0	0.02		1.54	
	*	159.0	-	161.5	2.5	0.06	(0.08)	8.70	(10.08)
		161.5	-	163.0	1.5	0.01		0.28	
		163.0	-	164.0	1.0	0.40	(0.68)	6.88	(6.52)
		241.5	-	242.5	1.0	0.14		14.10	
#394	*	60.0	-	61.0	1.0	1.84	(1.68)	138.64	(181.20)
	*	61.0	-	64.5	3.5	0.08	(0.08)	2.68	(3.84)
	*	64.5	-	66.0	1.5	0.14	(0.16)	13.14	(9.92)
	*	127.0	-	129.5	2.5	0.10		2.74	
	*	129.5	-	135.5	6.0	0.08		2.00	
	*	135.5	-	135.7	0.20	0.20		11.96	
	*	168.5	-	173.0	4.5	0.20		2.34	
	*	270.0	-	273.0	3.0	0.06		9.22	
#693	*	28.5	-	31.0	2.5	0.06		1.90	
	*	121.0	-	127.0	6.0	0.04	(0.02)	5.48	(5.10)

SECTION D

#328		51.0	-	56.0	5.0	0.04		0.96	
	R.S*	55.5	-	56.0	0.5	0.28		6.44	
	*	66.0	-	71.0	5.0	0.12		0.76	
	R.S*	67.0	-	67.5	0.5	0.68		5.56	
		134.0	-	138.0	4.0	0.16		4.96	
	R.S*	134.0	-	136.5	2.5	0.18		3.14	
	R.S.	136.5	-	137.4	0.9	0.06		2.18	
		258.0	-	268.0	10.0	0.03		2.38	
		278.0	-	283.0	5.0	0.02		2.14	

SECTION D (Continued)

Drill Hole	Footage (Feet) From - To	Intercept (Feet)	Au. (oz.)	Resample	Ag. (oz.)	Resam
#380	* 0.0 - 5.0	5.0	0.28	(0.16)	13.56	(6.
	* 5.0 - 9.0	4.0	0.42	(0.38)	15.22	(15.
	* 9.0 - 14.0	5.0	0.14	(0.16)	2.58	(3.
	*14.0 - 19.0	5.0	0.16	(0.18)	2.12	(1.
	*19.0 - 23.0	4.0	0.14	(0.14)	0.82	(0.
	*23.0 - 29.0	6.0	0.04		0.40	
	*29.0 - 29.5	0.5	0.16	(0.12)	1.68	(0.9
	*29.5 - 32.0	2.5	0.02		0.50	
	*32.0 - 36.0	4.0	0.44	(0.36)	0.92	(0.7
	*36.0 - 41.0	5.0	0.08		0.24	
	*41.0 - 41.5	0.5	0.28	(0.04)	2.20	(3.2
	54.0 - 58.5	4.5	0.04		0.64	
	58.5 - 60.0	1.5	0.06		2.62	
	176.0 -177.9	1.9	0.20	(0.16)	2.20	(1.1
	330.0 -340.0	10.0	0.02		1.86	
	340.0 -350.0	10.0	0.02		1.22	
R.S.	330.0 -339.0	9.0	0.02		1.10	
R.S.	* 339.0 -341.0	2.0	0.10		3.58	
R.S.	341.0 -350.0	9.0	0.02		1.06	
R.S.	479.3 -480.0	0.7	0.08		50.44	
#298	162.5 -163.0	0.5	0.24		2.52	
	169.5 -170.0	0.5	0.14		7.86	
	*178.4 -183.0	4.6	0.04		2.08	
	*183.0 -184.75	1.75	0.02	(0.02)	8.78	(8.58
	*184.75-191.40	6.65	0.02		3.58	
R.S.	184.75-188.0	3.25	0.02		4.78	
#295	8.50- 10.50	2.0	0.08		4.88	
	140.0 -150.0	10.0	0.02		4.98	
	150.0 -151.0	1.0	0.30		1.34	
	180.8 -182.3	1.5	0.04		4.16	
	*182.3 -186.0	3.7	0.46		15.58	
	*186.0 -189.0	3.0	0.06		11.30	
	189.0 -192.0	3.0	0.02		0.26	
	*192.0 -195.5	3.5	0.56		9.52	
#722	210.0 -216.0	6.0	0.01		1.28	

Appendix B

BRITISH SILBAK PREMIER MINES LTD

Stewart, B.C.

S U M M A R Y   R E P O R T

1980 SURFACE EXPLORATION PROGRAM

by

Dianne and Ulrich Kretschmar

March 27, 1981

DIANNE & ULRICH KRETSCHMAR Geologists R.R. #1, Severn Bridge, Ontario, P0E 1N0, Canada (705) 689-6431

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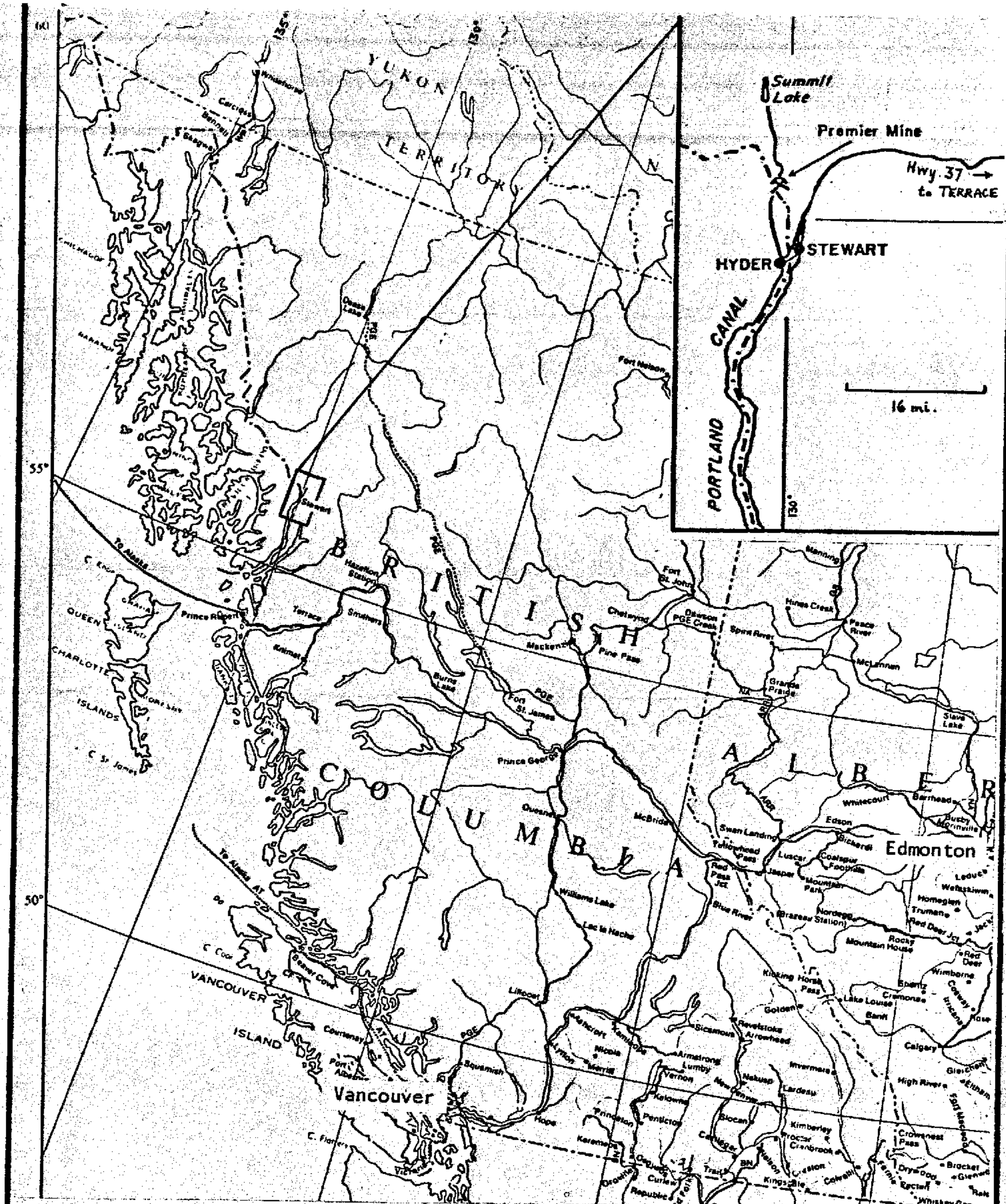
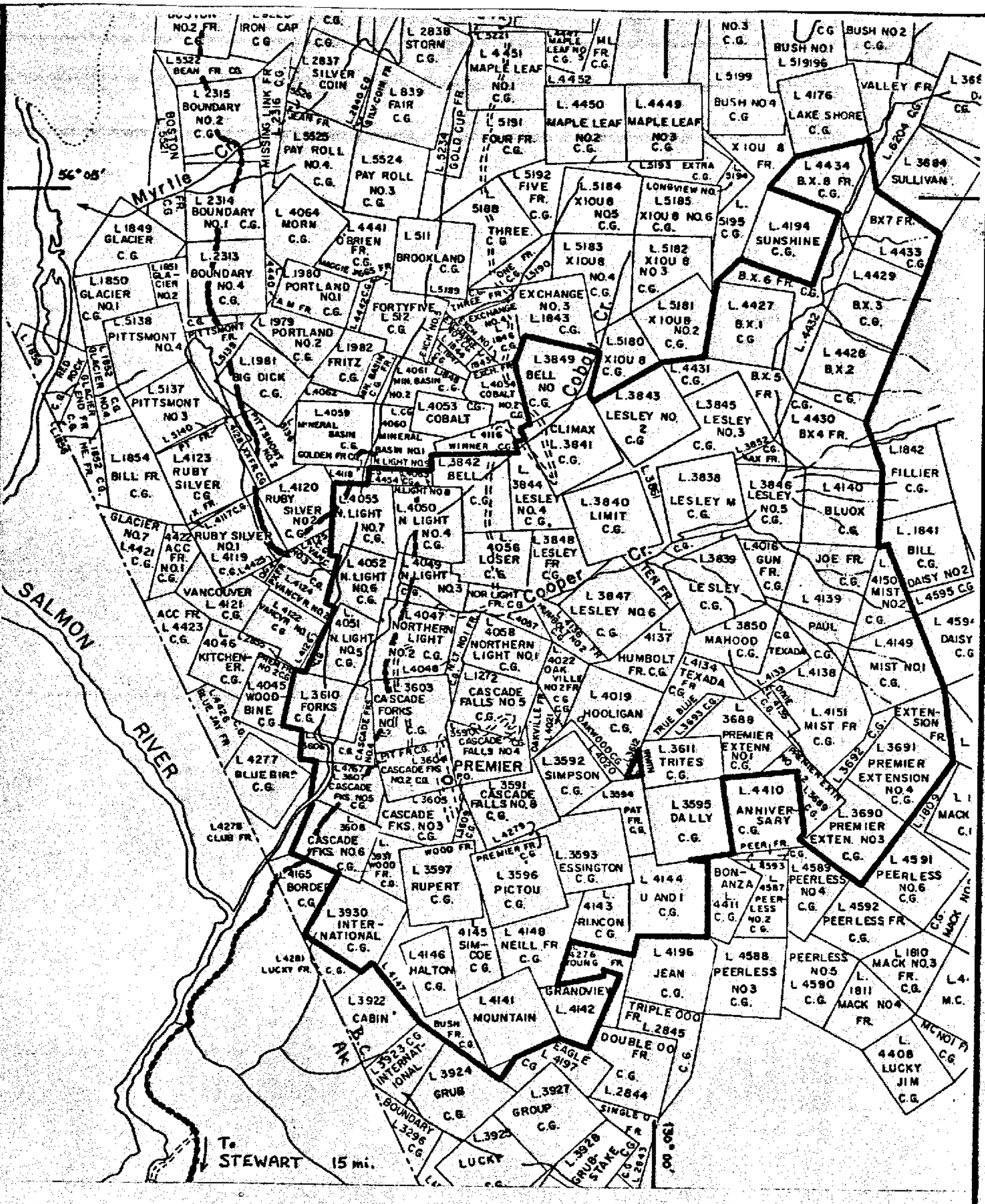


FIG. 1.

LOCATION MAP

Stewart, B.C.

DIANNE & ULRICH KRETSCHMAR Geologists R.R. #1, Severn Bridge, Ontario, P0E 1N0, Canada (705) 689-6431



SCALE 0 1500 3000 4500 FEET

FIG. 2.

British Silbak Premier Mines Ltd

CLAIM MAP

After Grove (1971) Fig. 15B

NTS 104 A/4W, 104 B/1E

Stewart, B.C.

INTRODUCTION

British Silbak Premier Mines Ltd contracted the authors to carry out an exploration program on their newly acquired property, 16 road miles northwest of Stewart, B.C. (Fig.1). The claim group consists of 87 crown granted mineral claims totalling 2971.94 acres or 1202.70 hectares (Fig.2). The property produced 4.7 million tons of ore grading 0.384 oz/t Au, 8.03 oz/t Ag and more than 5.5% combined Pb + Zn between 1918 and 1968.

The program had two main objectives:

1. to examine the potential for a large tonnage mineral reserve amenable to open pit mining in the Glory Hole area;
2. to prospect for high grade gold-silver zones which had either been missed or inadequately tested by the previous mine operators.

WORK ACCOMPLISHED

The geological crew was on the property from June 8 until December 3. The time devoted to field work breaks down as follows:

Project geologist: Dianne or Ulrich Kretschmar	153.5 days
Senior geologist	4.4 months
Assistants	11.75 months

A grid of lines totalling 15.5 line miles was cut by contractors in the Glory Hole-Pictou area and 0.5 line miles were added onto the HIMCO grid in the Woodbine area. A total of 2346 soil samples were collected and analyzed for Cu-Pb-Zn-Ag. 1030 samples from anomalous areas were also analyzed for Au. A geological map at a scale of 1" = 100' was completed on the grid.

Geological mapping on a reconnaisance scale (1" = 800') was completed on the south half of the property, south of the East Fork of Cascade Creek, with most detail in the mine area. The Pictou and Prospect tunnels were mapped in detail (1" = 20') and assay sampled, as were the Glory Hole, Pictou and Prospect target areas.

The drilling program may be summarized as follows:

Target Area	Holes	No. of Holes	Footage
Glory Hole	80-1 to 7	7	2416
Pictou	80-8 to 11	4	1387
Prospect	80-12 & 13	2	751
Cascade Falls #8	80-14 & 15	2	691
Buckham Pictou	80-16 to 21	6	2738
Total		21	7983

Rock and drill core samples were assayed for Cu, Pb, Zn, Ag, and Au as follows:

Sample Type	Location	No. of Samples
Assay	Prospect and Pictou tunnel	11
	Surface trenches	55
	Drill Core	166
Rock geochem.	Surface showings	46
	Drill Core	290

GEOLOGY AND MINERALIZATION

Both Premier porphyry and greenstone are host rocks for mineralization on the property.

Premier porphyry is a massive green, medium grained feldspar - hornblend-potassium feldspar-quartz porphyritic rock of andesitic composition. Quartz and potassium feldspar phenocrysts vary in size and abundance. This variation may have an exploration significance, with chances of finding mineralization proportional to the size and abundance of the phenocrysts. The intensity and zoning of alteration within the Premier porphyry is another ore finding index. In the proximity of ore zones, there is an increase in carbonate, pyrite and sericite alteration, culminating in a quartz flooded, pyritic completely altered and bleached porphyry which hosts the ore. The core of the alteration zone may be represented by massive dark green chlorite containing stringers of pyrite and calcite.

There are two types of mineralization in porphyry as observed in the Glory Hole, Cascade Falls #8 and B.C. Silver Camp areas: (1) stringer and disseminated black sulfides, mostly silver sulfosalts, and (2) pods or lenses of massive pyrite-sphalerite-galena-tetrahedrite or sulfide matrix breccia with high gold and silver contents. The lenses are grossly conformable with the contact between porphyry and green tuff.

Geological mapping and drilling in the Glory Hole area indicate a large area of pyrite-sericite-carbonate-silica altered Premier porphyry characterized by brecciation, faults, discontinuous stringer sulfide zones, pods of high grade massive sulfides and sericitic rock containing low grade gold and silver values. The observed alteration and discontinuous mineralization is to be expected in a vent facies or hydrothermal conduit environment. New concepts of ore genesis dictate exploration for altered porphyry rather than shear zones at Premier.

The greenstone is predominantly fine grained, foliated, rather featureless andesitic tuff. Two main types of mineralization were noted:

1. quatz-carbonate breccia zones containing fragments of bleached sericite and pyrite altered rock. Sulfides occur in stringers or rarely as massive pyrite-sphalerite-galena-tetrahedrite. These quartz-carbonate breccia zones may be veins (e.g. Prospect), or possibly flow top or intertuff units (e.g. Pictou, Buckham 4 level zone, 13 Mile Dam, Granduc Road).
2. pyritic, sericitic felsic tuff units (e.g. Mac's Zone, upper Pictou trenches).

Four sets of faults were noted during mapping: 010-025°/60° W; 160-170°/E or W dip, resulting in wedge shaped fault blocks; 045°/ NW and 125-130°/ SW. The importance of determining the amount of offset on these faults is clearly illustrated by the discovery of the lessee's lens (2736 T of ore grading 6.8 oz/T Au, 144 oz/T Ag, and 9.8% combined Pb + Zn) in the south wall of the Glory Hole after the mine ceased operation. No. 1 level geological plan shows two parallel ore zones running into a fault. On the other side of the fault, only one ore zone was mined, the other, offset only 40 feet, became the lessee's discovery.

Another structural element pertinent to exploration is the plunge of ore shoots. Mapping did not delineate any fold structures, but a consistent deformational lineation 240 to 260° plunging 25 to 45° was observed throughout the grid area.

SOIL GEOCHEMISTRY

The B horizon soil survey on the Glory Hole-Pictou grid was very successful, outlining 7 areas of multi-element anomalies. Anomalous soils commonly contain coincident high concentrations of Pb (≥ 45 ppm), Zn (≥ 90 ppm), Ag (≥ 3.0 ppm) and Au (≥ 50 ppb). A large number of samples contain low concentrations of base and precious metals, even down-slope from the Glory Hole, indicating that contamination is not prevalant.

Detailed followup of an Ag-Au soil anomaly along the Cascade Falls #8 porphyry resulted in discovery of new mineralization which was overlooked during routine grid mapping. It is expected that continued follow-up in the coming season will uncover more new mineralized occurrences.

TARGET AREAS

Highlights of the 1980 assay results are listed in the accompanying table and target areas are shown on Fig. 3. To facilitate comparison of the results, a factor "gold equivalent" is used which is calculated as the gold content plus 1/30 of the silver content. The factor 1/30 is based on the historic relative dollar value of gold and silver and does not take into account mill recovery rates. Using a dollar value of $500 for gold, 0.15 oz/T Au equivalent is considered to be minimum mining grade. The minimum mining width is taken to be 5 feet. Assay results listed in the table are selected on the basis of these minimums, except in cases where a single isolated sample indicates potential in a new area. In this table, no consideration is given to the greater widths and lower grades acceptable for an open pit situation.

Glory Hole:

The target on the south and east side of the Glory Hole is a bulk tonnage mineral reserve amenable to open pit mining. The area was mapped in detail (1" = 40') and tested by a fence of 7 drill holes (80- 1 to 7).

Drill holes 80-1, 3, 4 and 5 show that the previous mine operators left 10 to 20 feet of mineralization on the stope footwalls which is mining grade at present metal prices. In addition, these drill holes intercepted sizeable blocks of altered rock grading $20/T in gold and silver adjacent to the zones of mining grade, as well as stringers and pods of high grade ore.

In the southeast corner of the Glory Hole, silicified and pyritized Premier porphyry was mapped along a strike length of 400 feet. Grade is represented by samples 80-6011: 12 foot true width assaying 0.292 oz/T Au and 7.95 oz/T ag, 80-6012 and DDH 80-5 (see table). From drill results (not in the table) it is estimated that a zone 50 to 75 feet thick grades $20/T or better. Assuming an elevation difference of 150 feet between the floor and rim of the Glory Hole, there is an easily accessible reserve of 300,000 T on the south wall. Intercepts in DDH 80-3 and 80-4 and an area of anomalous Au-Ag-Pb in soils indicates that this zone extends along strike to the northeast for another 400 feet. If grades in the zone are continuous this represents a possible additional 300,000 T of low grade reserve.

In the southwest corner of the Glory Hole a similar silicified and pyritized zone was mapped along the wall for a strike length of 600 feet. High grade stringers and lenses are visible in the wall (80-6008 : 6 foot true width assaying 0.210 oz/T Au, 2.13 oz/T Ag, 8.0% combined Pb and Zn; 80-6009, see table).

In summary, the south side of the Glory Hole is an obvious target for easily accessible and profitable mill feed. A concerted sampling effort is warranted to determine the size and grade of bulk tonnage reserves which could be mined by cutting back the south wall of the Glory Hole.

Pictou:

Mineralization in quartz-carbonate breccia zones and in pyritic, sericitic felsic units in andesitic tuff is exposed in surface trenches and an exploratory tunnel at Pictou. Known mineralization is reflected by soils anomalous in Pb-Zn-Ag-Au, with considerable downslope spreading of the anomaly. A fan of 4 diamond drill holes was designed to test the down dip projection of known mineralization.

The results of assay sampling show that the mineralized occurrences at ~~Pictou look very promising on the surface, that the grades are~~

less spectacular in the tunnel and that the drill intercepts are on the whole sub-ore grade. For example, the mineralized zone exposed in trench 80-1111 (0.042 oz/T Au, 19.76 oz/T Ag over 5 feet) is sub-economic in DDH 80-10.

However, many of the better showings are cut off at depth by faults. Mineralization in the trench which produced the best assay sample of the season (80-1116 : 4 feet grading 0.528 oz/T Au, 23.17 oz/T Ag) is cut off by faulting and does not project downwards into the tunnel. A strong massive pyrite-sphalerite-galena-tetrahedrite zone in the tunnel (80-1081, 1082) probably correlates with a surface showing (80-1114, see table), but is cut off by a fault zone and was not intercepted by DDH 80-8 and 9.

In summary, numerous faults disrupt the down dip projections of showings on surface and in the tunnel. More detailed surface mapping and drilling is required to find extensions.

<u>Buckham Pictou:</u>

A fan of four drill holes from one setup was laid out by T.R. Buckham to test the up dip projection of a northeast trending sub-economic zone exposed by drifting on 1350 (4) level. The upward projection of this zone had not been tested by previous operators. Surface mapping indicates several zones of sericitic and pyritic felsic tuff in the target area. Isolated soil samples contain anomalous concentrations of Pb, Au and Ag.

The target mineralization was intersected in the first hole DDH 80-16: 315-324 feet : 0.065 oz/T Au and 9.98 oz/T Ag, but the zone was cut off by a fault and did not show in the next 3 holes. Two additional holes, 80-20 and 80-21 were drilled on either side of 80-16. The lithologic section and mineralized intercepts in 80-21 correlate well with DDH 80-16 but the mineralization was sub-economic. DDH 80-20 hit the fault zone before reaching the projected mineralization. The 4 level zone had been intersected at a lower elevation earlier in the season by DDH 80-9 (0.116 oz/T Au, 1.34 oz/T Ag over 5 foot core length).

In summary, DDH 80-9, 16 and 21 intersected the target zone, with 80-9 and 16 showing mining grades with good gold contents and widths. Continued drill testing of this zone is recommended.

DDH 80-18 was drilled beyond Buckham's proposed footage (375') in order to test the down dip projection of massive pyrite mineralization found by Mac Okazaki during surface mapping. In this hole a 15.5 foot core length of pyritic, sericitic tuff grades 0.056 oz/T Au and 2.57 oz/T Ag. A 4.5 foot length at the beginning of the section contained 0.156 oz/T Au. DDH 80-19 established the strike continuity of this zone, as it was intersected from 488 to 512.8 feet (see table). "Mac's Zone" is considered to have excellent potential for strike continuity and therefore tonnage since it is a distinct lithological unit. The difference in elevation between the drill intercepts and the surface showing is 400 to 500 feet. This is a new showing in previously untested terrain and should be pursued by further drilling.

Prospect:

Two holes, 80-12 and 13, were drilled to test the down dip extension of the Prospect vein, which is exposed in the Prospect tunnel and in trenches above the tunnel. In the tunnel, good grade mineralization occurs in a multiple quartz-carbonate breccia vein containing pods of massive sulfides in greenstone; e.g. 80-1086 : 5 feet grading 0.110 oz/T Au, 1.85 oz/T Ag and 80-1087 : 8 feet grading 0.092 oz/T Au, 2.23 oz/T Ag. These results corroborate assays shown on old mine plans which date back to the early 1930's. It was felt that the potential of this area had not been adequately tested by previous drilling. The Prospect vein structure was intersected by both drill holes but grades are marginal (see table).

DDH 80-12 was drilled to 463 feet in an effort to reproduce intersections recorded in early exploratory holes drilled from 2 level. Numerous quartz-carbonate breccia zones containing stringers of pyrite-sphalerite-galena show only marginal grades; e.g. 356.2-362.5 feet : 0.040 oz/T Au, 3.26 oz/T Ag.

While the drilling established continuity of the Prospect vein structure, it is evident that the occurence of mining grades is spotty. Further drilling is not warranted unless a better understanding of the plunge of ore shoots within mineralized zones indicates more specific targets in untested ground.

Cascade Falls #8:

An altered Premier porphyry body hosting numerous mineral occurences outcrops as a prominent knoll on the Cascade Falls #8 claim, just south of the Glory Hole. Considerable exploration effort was focussed on this porphyry body because assay results from trenching in the 1930's are encouraging. There is no record of underground or drill testing of the porphyry in the upper levels except for a flat drill hole from 2000 (1) level which intersected 0.16 oz/T Au and 2.12 oz/T Ag over 8 feet.

Resampling of the original open cuts resulted in two significant assays over zones of quartz veining and stringer black sulfides in porphyry (80-1103 : see table. and 80-1104 : 12 feet grading 0.013 oz/T Au and 5.00 oz/T Ag). A reconnaissance IP traverse southwest of the open cuts detected an anomaly coincident with the contact between porphyry and greenstone. The intercept in DDH 80-15 from 217.9 to 219.9 feet (0.034 oz/T Au and 2.54 oz/T Ag) is roughly coincident with the IP anomaly. The drill hole was stopped short of target and is to be completed in 1981.

Follow-up of a silver-gold soil anomaly coincident with the porphyry along strike to the southwest resulted in the discovery of significant mineralization in two new locations. High grade in talus (samples 80-1078 and 80-1079; 0.046 oz/T Au, 17.91 oz/T Ag and 0.096 oz/T Au, 55.12 oz/T Ag respectively) was subsequently located in place by trenching (80-1109: 0.014 oz/T Au and 2.98 oz/T Ag). DDH 80-14 intersected the zone at depth (265.2-270.2 feet : 5 feet assaying 0.026 oz/T Au, 5.65 oz/T Ag). Along strike, trenching exposed high grade gold and silver over a narrow width (samples 80-1098 : 2 feet of 0.144 oz/T Au, 1.06 oz/T Ag and 80-1107 : 2 feet of 0.005 oz/T Au, 11.36 oz/T Ag).

The Cascade Falls #8 porphyry warrants a concerted exploration effort in the coming season.

UNDEVELOPED TARGET AREAS

1. 13 Mile Dam

Between Cascade Falls #8 and Pictou, on the North Fork of Fletcher Creek, there is an area of mineral occurrences referred to on old mine maps as 13 Mile Dam. Surface showings were tested by a number of short drill holes in the 1930's.

The area of known mineralization was enlarged this past season when two showings approximately 100 feet apart were exposed during blasting for roadbuilding. One exposure (80-1096) grades 0.072 oz/T Au and 13.82 oz/T Ag across a true width of 6 feet. Along strike to the southwest, an area of soils anomalous in Pb, Zn and Au (up to 0.188 oz/T) indicates the potential for a sizeable zone.

2. B.C. Silver Camp

Uphill from the old B.C. Silver Camp silicified and pyritized Premier porphyry is well exposed in several old open cuts. The area of interest is delineated by an Ag-Pb-Au soil anomaly. The best assay sample is 80-1048 : 5 feet grading 0.026 oz/T Au and 6.87 oz/T Ag. However, the B.C. Silver 1820 level workings pass under this area and no further work is recommended at this time.

3. Granduc Road - 6 Level Portal

When the road to the Granduc Mine was built in the early 1960's, massive pyrite-sphalerite-galena-tetrahedrite mineralization was exposed in a road cut just above the 6 level portal (samples 80-1135 to 1137 : averaging 0.158 oz/T Au, 3.24 oz/T Ag, 6.6% combined Pb and Zn across 18 feet). This mineralization probably correlates with an occurrence exposed by early prospectors in a short exploratory adit driven into the cliff above the road cut (samples 80-1133 and 1134, see table).

The previous mine operators explored unsuccessfully for down dip extensions of the mineralization to 6 level. However, the showing continues to be intriguing because of the high grade and the similarity to mineralization on HIMCO's Woodbine property to the west. Detailed mapping in the vicinity of the showing and westwards to the Woodbine property boundary is recommended.

4. Bush

Little more was accomplished at the Bush workings than locating the exploratory tunnels and open cuts. Old mine plans show significant assay results, especially for silver, which are substantiated in a very preliminary way by an unbiased grab sample chipped from the wall of No. 4 tunnel (sample 7676 : 0.078 oz/T Au, 44.24 oz/T Ag).

5. Simcoe

Showings on the Simcoe and Neill Fr. M.C. are near the southern boundary of the property and just off the south end of the grid of lines. A large area of soils anomalous in Pb-Zn-Ag-Au-Cu was outlined on the southern most lines of the grid, and the anomaly is open towards the known showings.

Mineralization in old open cuts and adits consists of quartz-carbonate-galena veins in greenstone near a contact with Premier porphyry. The assay results show sub-ore grade. The most spectacular showing recorded on the old mine plans, 0.5 oz/T Au and 11.68 oz/T Ag could not be located.

A major fault zone, now occupied by a Tertiary dike swarm, was mapped in the South Fork of Fletcher Creek between Simcoe and the Pictou area to the north. Depending on displacement along the fault, the Simcoe Premier porphyry body may correlate with either the Cascade Falls #8 or the Glory Hole porphyry to the north.

6. Hospital

A large area of soils containing anomalous concentrations of Pb and Zn, as well as smaller areas with high Ag and Au (up to 5000 + ppb) contents extends upslope from the road to the old hospital at 4 level town site. Some outcrops of silicified and pyritic Premier porphyry were mapped on the grid within the anomalous area.

7. Woodbine

The Woodbine claims of HIMCO are due west of the 6 level portal, across Cascade Creek. The silicified and pyritized Premier porphyry body which hosts mineralization on the Woodbine claims strikes northeast and projects into the Premier property.

COMPILATION

Reinterpretation of the existing mine geological plans and drill logs has proven very difficult. The geological observations are sketchy and it is clear that the mine was run as an engineering operation following shear zones and ore shoots with little or no geological control.

While faults and fractures are recorded in great detail on the underground plans, there is no indication of the magnitude of structures and little evidence that lithological correlations were used to define offsets along the faults. Lack of continuity in many ore shoots could be the result of faulting. It is probable that an effort to interpret the role of faulting in displacing ore zones would locate more ore (e.g. lessee's lens).

An assay plan of 1 level was reconstructed using drill log data. Assessment of this assay plan together with the data from DDH 80-1 to 7 leads to the conclusion that there is probably not a large enough tonnage of bulk mining grade gold and silver reserve ($20/T or 0.04 oz/T Au equivalent) in the area south and east of the Glory Hole to support a high capacity milling operation. The 1 level assay plan shows abrupt cut-offs in grade adjacent to the mining grade intercepts, while the 1980 drill results indicate broader zones of low grade material, perhaps as a result of more sensitive analytical techniques and larger assay samples. However, there is certainly a substantial tonnage of profitable mill feed for an existing mill both in the stope walls and on the south wall of the Glory Hole. Particularly in the upper levels, where mining was carried out in the 1920's, rock left in the walls of bonanza stopes is mining grade at today's metal prices.

CONCLUSIONS

The 1980 exploration program leads to the following general conclusions:

1. At present metal prices, there is mining grade in the stope footwalls as indicated by DDH 80-1, 3, 4 and 5. Sericitized, pyritic Premier porphyry adjacent to the ore grade silicified zones represents a lower grade mineral reserve.
2. New mineralized zones can be found even in the near vicinity of old workings by detailed work consisting of soil geochemistry, geological mapping and prospecting (e.g. Cascade Falls #8).

3. Delineation of fault systems on the property is essential to the interpretation of drill results, both past and present, and to the prediction of offsets on ore shoots.
4. Ore grade mineralization is not difficult to find but establishing continuity and therefore tonnage is less straightforward because of the numerous faults and erratic distribution of values within the mineralized zones.

RECOMMENDATIONS FOR 1981

There are many targets both within the Glory Hole-Pictou grid area and elsewhere on the property which warrant detailed exploration. However, it is recommended that the 1981 field season be used to upgrade known mineralized zones which would be easily accessible for mining from present workings and to consolidate the effort being made on the lower levels to put the property into production.

1. Bulk mineral reserve in Glory Hole area:
   (a) Assay more core samples from DDH 80-1, 3, 4 and 5, to better define the extent of lower grade reserve.
   (b) Do the physical work necessary to make safe the south wall of the Glory Hole for sampling and drill testing. Strip overburden and blast off overhangs.
   (c) Cut timber on the south side of Glory Hole (contract out to logger who would also build roads). Excavate a series of continuous trenches at 100 foot intervals from the Glory Hole rim into footwall.
   (d) Drill horizontal and up holes from 110 level tunnel to assay test the westernmost section of the Glory Hole wall (12 holes totalling 2000 feet).
   (e) If sufficient encouragement is forthcoming from the above work, drill short horizontal test holes into the south wall on a grid pattern for assay purposes using a jumbo drill or underground drill mounted on a lift (possibly percussion). Continue drilling south and east of Glory Hole on a grid pattern.

2. Of the mining grade zones indicated by 1980 drilling and surface sampling, it is recommended that further work be concentrated on those which would be accessible for mining from existing workings, i.e. from the 4 level cross cut (407 Dr) heading south to Pictou. These include:

(a) Cascade Falls #8 Porphyry

-deepen DDH 80-15 to 450 feet and drill a fan of holes from the same setup (4 holes totalling 1700 feet)

-drill a fan of holes in vicinity of DDH 80-14 to test for extensions of intercept 265.2 to 270.2 feet. (3 holes totalling 1500 feet)

-drill test down dip projections of mineralization in surface trenches (4 setups, 12 holes, total 1800 feet)

-compile 4 level data in area of down dip projection of this zone. Possibly drill test from 4 level.

(b) Pictou

-drill test showings in surface trenches which do not project downwards into tunnel (6 holes, total 1000 feet).

-map the area of the upper showings in detail with a view to finding extensions and delineating faults.

(c) Buckham Pictou

-continue drill testing from underground in Pictou tunnel. Initial indications are that continuity of grade is poor and drilling must be on a close-spaced (not more than 50 foot) pattern (1500 feet of drilling)

(d) 13 Mile Dam zone

-follow up known mineralization and soil anomalies by detailed geological mapping and prospecting

-develop drill targets (accessible from Pictou road, contingent 2000 feet)

Many of the 1980 drill holes, especially those at Pictou, reached the projected target too far below the known mineralization because of steep terrain and difficult access. To drill test the surface showings and soil anomalies, a small machine capable of mobility in rough terrain and of drilling short, flat holes is needed. Information on width, grade, attitude and continuity of the mineralized zones from holes right under the showings is essential before going to the expense of setting up the Longyear 38 drill. A BBS-1 or an underground drill mounted on skids with a winch to move around should work in most instances, with an air line to a compressor parked on existing roads. Core size should be NQ or at least BQ.

3. Surface mapping and prospecting on a scale 1" = 100' should be carried out on a grid of lines in the area above development work on 6 level and in the area between the Granduc Road showing and HIMCO's Woodbine property. This geological information is needed for exploration on 6 level and below. Contingent drill testing of Granduc Road showing (3 holes totalling 600 feet).

4. A continued effort is required to delineate fault attitudes and offsets and to define structures which would indicate the plunge of ore shoots. Underground mapping should be carried out on 110 level, 4 level and 6 level. As well as accumulating structural information, this mapping should concentrate on developing a three dimensional picture of the distribution and nature of the Premier porphyry.

5. Contract an IP survey on the Glory Hole-Pictou grid of lines to detect massive sulfide pods and pyritic alteration zones.

6. Co-ordinate with HIMCO line cutting on the Woodbine grid. Extend the present grid east to Cascade Creek and to the south. Do a soil geochemical survey on the grid extension.

7. Both blasting and mucking out are required to expose mineralization in old open cuts.

8. Construct a three-dimensional model of the mine workings.

ESTIMATED COSTS

GLORY HOLE "PIT" EVALUATION

1)	Physical work, trenching and assay sampling on south rim	$25,000.
2)	Drill and assay sampling program from 110 level. 2000 feet at $25.00 per foot "all in".	$50,000.

SURFACE TARGET AREAS

1)	Drill program from Pictou tunnel. 1500 feet at $25.00 per foot "all in".	$37,500.
2)	Drill program of short test holes under showings 2800 feet at $35 per foot "all in"	$98,000.
	(contingent drilling - 600 feet	$21,000.)
3)	Drill program with Longyear 38. 3200 feet at $50.00 per foot "all in"	$160,000.
	(contingent drilling - 2000 feet	$100,000.)
4)	Geological mapping program. Follow up known mineralization and soil anomalies. Develop drill targets. Delineate fault systems.	$50,000.
5)	Contract linecutting-10 line miles at $1000 per mile	$10,000.
6)	Contract IP survey	$20,000.
7)	Trenching and sampling	$5,000.

UNDERGROUND GEOLOGY

1)	Geological mapping and compilation on 110, 4 and 6 levels	$50,000.
	TOTAL	$505,000.
	(contingent drilling)	$120,000.)

RECOMMENDATIONS FOR FUTURE WORK

1) Extend present Glory Hole-Pictou grid to close off soil anomalies at the edges of the grid. Map and soil sample the grid extensions. Follow up soil anomalies by detailed geological mapping and prospecting.
   (a) Hospital Pb-Zn soil anomaly and area to south of No. 2 portal and Ladder tunnel.
   (b) Simcoe-Neill Fr. Pb-Zn-Ag-Au soil anomaly and known showings.

2) Reappraisal of outside showings and remapping of those with potential.
   (a) Bush workings.
   (b) Northern Lights - Hovland Creek - Granby IP anomaly and drill intercepts.
   (c) Logan Creek at Cascade Creek area.

3) Follow-up mineralized intercepts from previous underground drilling as listed by Seraphim (1979). Some of this mineralization may have been mined by previous operators and should be either drilled "on speculation" or the stope outlines should be checked underground (possible only on 4 level and below).

Respectfully submitted

March 27, 1981
Severn Bridge, Ontario

Dianne Kretschmar

Dianne Kretschmar

STATEMENT OF EXPENDITURES - British Silbak Premier Mines Ltd.

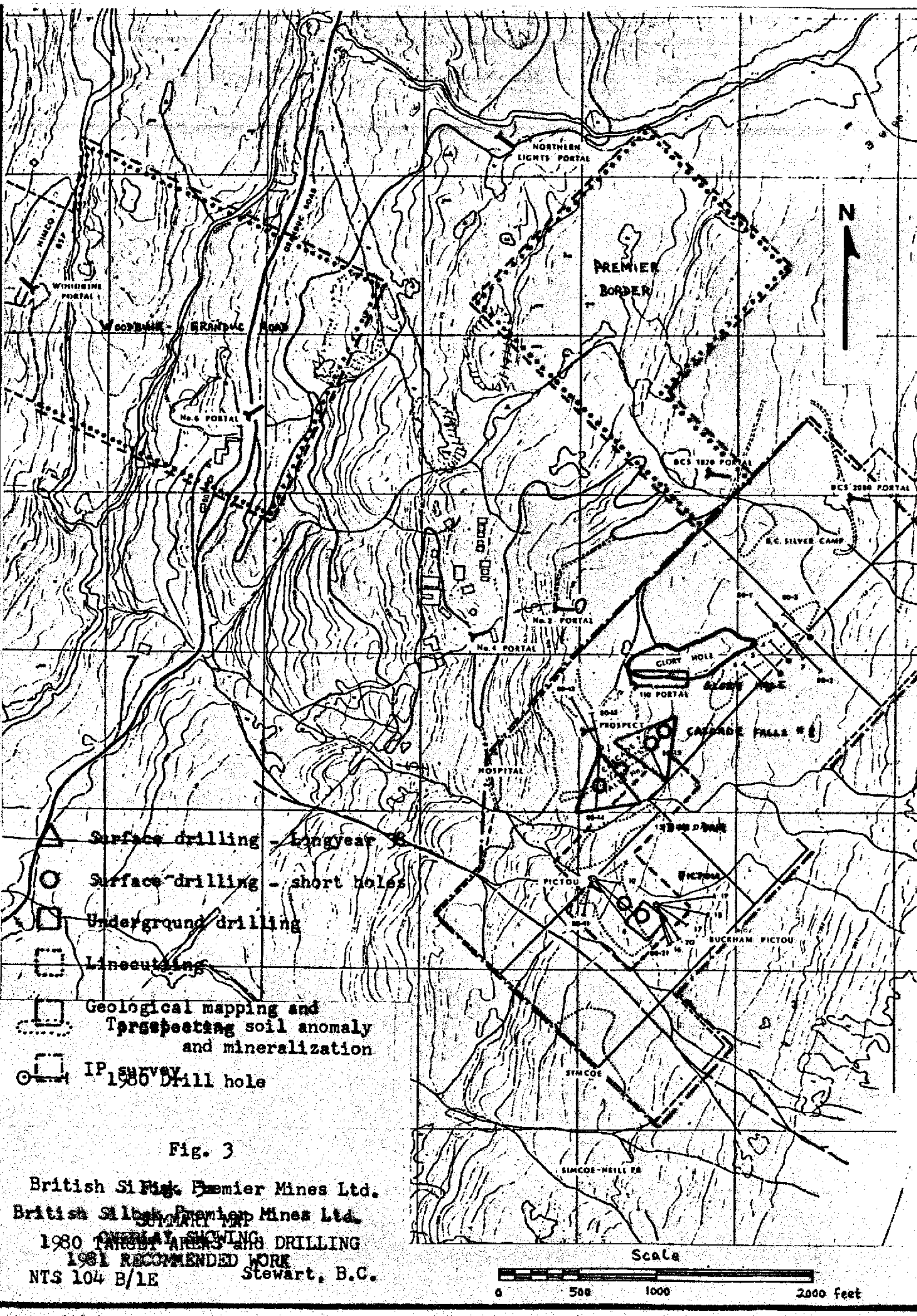
1980 Field Program

	Field Work to 31 Dec/80	Compilation to 31 Dec/80	Report Preparation	TOTAL
Salaries and fees	52,943	8,693	10,102	71,738
Travel	6,654	3,454	-	10,108
Transport and Fuel	7,245	-	-	7,245
Supplies and Maps	2,033	509	368	2,910
Communication & Report Reproduction	602	226	900	1,728
Freight	425	43	206	674
Commissary	961	-	-	961
Outside Contracts	495	-	-	495
Analyses	389	-	41	430
TOTAL	71,747	12,925	11,617	96,289
10% Overhead	6,991	-	1,162	8,153
GRAND TOTAL	78,738	12,925	12,779	$104,442

Dianne Kretschmar

Dianne Kretschmar

DIANNE & ULRICH KRETSCHMAR Geologists R.R. #1, Severn Bridge, Ontario, P0E 1N0, Canada (705) 689-6431



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BRITISH SILBAK PREMIER MINES LTD

HIGHLIGHTS OF 1980 ASSAY RESULTS

DDH and Footage or Sample No.		width (ft.)	% Pb	% Zn	oz/t Au	oz/t Ag	oz/t Au equiv.
1. GLORY HOLE							
Diamond Drill Holes							
80-1	447-452	5	0.01	0.02	0.030	0.82	0.057
	452-457	5	0.01	0.03	0.026	5.47	0.208
	457-462	5	0.08	0.27	0.162	7.16	0.401
	(av. 447-462	15	0.03	0.11	0.073	4.48	0.222)
	465 hole broke into 110 level stope						
80-3	281.5-283	1.5	0.06	0.21	0.054	13.18	0.493
	283 -285	2	<0.01	<0.01	0.002	0.35	0.013
	(av.281.5-285	3.5	0.03	0.09	0.024	5.85	0.219)
	288.4-291.9	3.5	<0.01	<0.01	0.003	1.32	0.047
	291.9-293.4	1.5	0.08	0.25	0.454	116.45	4.34
	293.4-297.8	4.4	<0.01	0.01	0.009	2.00	0.076
	297.8-302.8	5	0.01	0.02	0.030	2.26	0.105
	302.8-308.8	6	0.02	0.04	0.003	1.98	0.069
	(av.288.4-308.8	20.4	<0.01	0.04	0.044	10.36	0.389)
	308.8 hole broke into 1 level stope						
80-4	160-165	5	0.01	0.02	0.059	3.67	0.181
	205.6-210.9	5.3	0.06	0.04	0.180	22.04	0.915
	210.9-213.6	2.7	0.03	0.05	0.052	3.14	0.157
	213.6-218.6	5	<0.01	0.03	0.006	1.26	0.048
	(av.205.6-218.6	13	0.03	0.04	0.086	10.12	0.423)
	227-233	6	0.01	0.05	0.063	4.26	0.205
	240-245	5	<0.01	0.02	0.056	5.02	0.223
	252.5-254	1.5	0.05	0.25	0.076	5.84	0.271
	254-256.1	2.1	<0.01	0.03	0.010	1.76	0.069
	256.1-259.9	3.8	<0.01	0.02	0.076	4.12	0.213
	259.9-263.8	3.9	<0.01	0.01	0.006	1.13	0.043
	263.8-269	5.2	<0.01	0.03	0.023	2.04	0.091
	269-273	4	<0.01	0.04	0.108	5.40	0.288
	(av.252.5-273	20.5	0.01	0.04	0.049	3.16	0.154)
	277 hole broke into 1 level stope						

HIGHLIGHTS OF 1980 ASSAY RESULTS

DDH and Footage or Sample No.		width (ft.)	% Pb	% Zn	oz/t Au	oz/t Ag	oz/t Au equiv.
1. GLORY HOLE (continued)							
Diamond Drill Holes							
80-5	199-204	5	0.06	0.04	0.042	5.38	0.221
	279-282	3	0.06	0.01	0.054	6.44	0.269
	282-287	5	0.08	0.08	0.040	8.34	0.318
	(av.279-287	8	0.07	0.05	0.045	7.63	0.299)
	353.5-358.5	5	0.02	0.02	0.448	1.42	0.495
	358.5-363.5	5	<0.01	0.01	0.020	8.50	0.303
	(av.353.5-363.5	10	0.01	0.02	0.234	4.96	0.399)
	368.5	hole broke into Glory Hole					
80-6	133.8-139.3	5.5	0.09	0.21	0.011	8.04	0.279
80-7	218.9-219.7	0.8	0.16	0.49	0.012	11.54	0.397
Samples from South Wall and Rim of Glory Hole							
	80-1053	4.5	0.02	0.10	0.096	12.70	0.519
	80-6008	6	3.70	4.26	0.210	2.13	0.281
	80-6009	8	2.36	2.53	0.148	4.55	0.300
	80-6011	12	0.23	0.31	0.292	7.95	0.557
	80-6012	7.5	0.05	0.06	0.034	5.28	0.210
2. PICTOU							
Diamond Drill Holes							
80-8	80.8-84.3	2.5	<0.01	0.04	0.003	0.27	0.012
	84.3-86	2.7	0.53	0.52	0.038	8.52	0.322
	(av.80.8-86	5.2	0.28	0.29	0.021	4.55	0.173)
	101.8-102.8	1	0.17	0.55	0.020	5.46	0.202
	269.6-273.1	3.5	0.03	0.04	0.052	3.38	0.165
	286.3-287.3	1	0.22	0.36	0.034	4.12	0.171
	287.3-287.8	0.5	6.46	8.37	0.092	8.24	0.367
	287.8-289.3	1.5	0.27	0.96	0.042	1.49	0.092
	(av.286.3-289.3	3	1.29	2.00	0.048	3.49	0.164)
80-9	283-286.5	3.5	0.31	0.63	0.046	1.72	0.103
80-10	166.7-168.1	1.4	0.01	0.01	0.016	5.74	0.207
80-11	200.5-202.3	1.8	0.10	0.48	0.154	0.27	0.163

BRITISH SILBAK PREMIER MINES LTD

HIGHLIGHTS OF 1980 ASSAY RESULTS

DDH and Footage or Sample No.	width (ft.)	% Pb	% Zn	oz/t Au	oz/t Ag	oz/t Au equiv.
2. PICTOU (continued)						
Pictou Exploratory Tunnel						
80-1081	6.5	1.28	1.30	0.048	1.83	0.109
80-1082	6.5	0.90	1.59	0.090	1.35	0.135
80-1085	6	0.63	6.01	0.168	0.99	0.201
Pictou Trenches						
80-1111	5	0.62	0.91	0.042	19.76	0.701
80-1114	7	0.15	0.98	0.142	0.56	0.161
80-1115	4	0.12	0.35	0.030	3.32	0.141
80-1116	4	0.93	1.22	0.528	23.17	1.30
3. BUCKHAM PICTOU DIAMOND DRILL HOLES						
4 Level Zone Projected up Dip						
80-9 395.9-397.9	2	<0.01	<0.01	0.006	0.09	0.009
397.9-400.9	3	0.04	0.06	0.190	2.17	0.262
(av. 395.9-400.9	5	0.02	0.04	0.116	1.34	0.161)
80-16 315-317.1	2.1	0.05	0.15	0.003	4.66	0.158
317.1-323	5.9	0.10	0.15	0.062	11.12	0.433
323-324	1	0.25	0.15	0.214	14.45	0.696
(av. 315-324	9	0.11	0.15	0.065	9.98	0.398)
347.1-348.1	1	0.01	0.03	0.106	1.02	0.140
80-17 158.5-159.5	1	0.23	0.43	0.020	32.52	1.104
159.5-162.5	3	0.01	0.17	0.002	2.70	0.092
(av. 158.5-162.5	4	0.07	0.24	0.007	10.16	0.346)
80-21 140-141.5	1.5	0.03	0.03	0.011	4.24	0.152
Mac's Zone						
80-18 454.1-458.6	4.5	0.03	0.07	0.156	1.07	0.192
458.6-460.4	1.8	<0.01	0.01	0.026	0.66	0.048
460.4-461.9	1.5	<0.01	<0.01	0.002	0.16	0.008
461.9-464.1	2.2	0.05	0.08	0.012	5.16	0.184
464.1-466.7	2.6	<0.01	0.04	0.005	3.36	0.117
466.7-468.9	1.9	0.06	0.04	0.028	4.56	0.180
468.9-469.6	1	0.08	0.16	0.018	4.82	0.179
(av. 461.9-469.6	7.7	0.04	0.07	0.014	4.36	0.159)
(av. 454.1-469.6	15.5	0.03	0.05	0.056	2.57	0.142)

HIGHLIGHTS OF 1980 ASSAY RESULTS

DDH and Footage or Sample No.		width (ft.)	% Pb	% Zn	oz/t Au	oz/t Ag	oz/t Au equiv.
3. BUCKHAM PICTOU DIAMOND DRILL HOLES (continued)							
Mac's Zone (continued)							
80-19	257.2-258.2	1	0.14	0.30	0.003	7.08	0.239
	466.4-471.4	5	0.07	0.16	0.010	5.26	0.185
	488-489.5	1.5	0.10	0.21	0.005	3.10	0.108
	489.5-494	4.5	<0.01	0.02	0.003	0.57	0.022
	494-495.5	1.5	0.16	0.31	0.026	18.90	0.656
	(av. 488-495.5	7.5	0.05	0.11	0.008	4.74	0.166)
	502.7-505.2	2.5	0.02	0.03	0.003	1.52	0.054
	505.2-510.8	5.6	<0.01	0.02	0.003	0.63	0.024
	510.8-512.8	2	0.33	0.65	0.042	27.86	0.971
	(av.502.7-512.8	10.1	0.07	0.13	0.011	6.24	0.219)
4. PROSPECT							
Diamond Drill Holes							
80-12	319.2-320.2	1	0.09	0.14	0.048	8.52	0.332
	320.2-323.2	3	0.02	0.03	0.003	0.70	0.026
	(av.319.2-323.2	4	0.04	0.06	0.014	2.66	0.103)
	356.2-362.5	6.3	0.30	0.92	0.040	3.26	0.149
80-13	223-226.5	3.5	0.18	0.76	0.038	3.54	0.156
	226.5-228.5	2	<0.01	<0.01	<0.001	0.05	0.002
	(av. 223-228.5	5.5	0.12	0.49	0.025	2.27	0.101
	288 hole abandoned in heavy fault zone						
Prospect Exploratory Tunnel							
	80-1086	5	2.03	1.18	0.110	1.85	0.172
	80-1087	8	0.34	1.06	0.092	2.23	0.166
	80-1089	5	0.27	0.44	0.020	9.12	0.324
	80-1090	4.5	0.31	0.42	0.014	10.80	0.374
Prospect Bulldozer Trench							
	80-1007	3	0.30	1.42	0.030	5.02	0.197

BRITISH SILBAK PREMIER MINES LTD

HIGHLIGHTS OF 1980 ASSAY RESULTS

DDH and Footage or Sample No.		width (ft.)	% Pb	% Zn	oz/t Au	oz/t Ag	oz/t Au equiv.
5. CASCADE FALLS #8 PORPHYRY							
Diamond Drill Holes							
80-14	265.2-267.7	2.5	0.37	0.71	0.028	10.08	0.364
	267.7-270.2	2.5	0.20	0.08	0.024	1.22	0.065
	(av. 265.2-270.2	5	0.29	0.40	0.026	5.65	0.214)
	282.2-286.9	4.7	0.06	0.16	0.038	2.22	0.112
	328.5-333.5	5	0.07	0.08	0.014	4.70	0.171
80-15	33.6- 38.6	5	0.09	0.29	0.131	0.53	0.149
	217.9-219.9	2	0.57	0.77	0.034	2.54	0.119
	248	Pulled off hole short of target to move to Buckham Pictou site. Hole to be completed in 1981.					
Surface Trenches							
	80-1078	grab	0.27	0.49	0.046	17.91	
	80-1079	grab	0.43	1.34	0.096	55.12	
	80-1098	2	0.37	0.69	0.144	1.06	0.179
	80-1103	2	0.18	0.46	0.005	3.92	0.136
	80-1104	12	0.13	0.24	0.013	5.00	0.179
	80-1107	2	0.89	2.02	0.005	11.36	0.384
	80-1109	5	0.10	0.29	0.014	2.98	0.113
6. 13 MILE DAM (North Fork Fletcher Creek)							
	80-1096	6	0.23	0.71	0.072	13.82	0.533
7. B.C. SILVER CAMP							
	80-1048	5	0.06	0.21	0.026	6.87	0.255
8. GRANDUC ROAD ABOVE 6 LEVEL PORTAL							
	80-1133	3	2.68	4.85	0.094	4.08	0.230
	80-1134	4	0.44	2.74	0.686	3.78	0.812
	80-1135	6	0.33	1.63	0.162	1.38	0.208
	80-1136	6	1.53	10.90	0.248	6.85	0.476
	80-1137	6	0.41	4.85	0.064	1.50	0.114
(av.		18	0.76	5.79	0.158	3.24	0.266)

DIANNE & ULRICH KRETSCHMAR Geologists R.R. #1, Severn Bridge, Ontario, P0E 1N0, Canada (705) 689-6431

BRITISH SILBAK PREMIER MINES LTD

HIGHLIGHTS OF 1980 ASSAY RESULTS

DDH and Footage or Sample No.	width (ft.)	% Pb	% Zn	oz/t Au	oz/t Ag	oz/t Au equiv.
9. BUSH #4 TUNNEL						
7676	grab	1.60	1.71	0.078	44.24	

All assays by Chemex Labs Ltd, North Vancouver, B.C.

Au equivalent = oz/t Au + 1/30 oz/t Ag

FALCONBRIDGE METALLURGICAL LABORATORIES

Mineralogy Report #1205

TO:	B. W. Downing	PROJECT No.	302-810901 (JO#2953)
FROM:	R. Buchan	SAMPLE No.	L#81-588

DATE: September 1, 1981

SUBJECT: Mineralogical Examination of 8 Samples from Silbak-Premier Mine, B.C.

KEYWORDS: Copper, Lead, Zinc

DISTRIBUTION: RAB, WDH/CMHJ/JCC, JBG, Min File

DESCRIPTION OF SAMPLE: INFORMATION REQUESTED

Eight grab samples collected during a visit to the property on August 12th were submitted for mineralogical examination. One casual sample submitted by J.J. McDougall was described previously from Silbak-Premier (see Min Report No. 1172)

PROCEDURES:

- [X] Spectrochem. Analysis
- [ ] Chemical Analysis
- [ ] X.R.D.
- [X] Optical Microscopy
- [ ] Electron Probe
- [ ]

Polished and pol-thin sections were prepared and examined. Crushed portions of sample were submitted for qualitative spectrographic analysis (Table I).

RESULTS:

Brief descriptions of the sections are given on the following pages. The following table summarizes the results of the examination.

Discussion

This reconnaissance examination indicates that mineralization at the Silbak Premier Mine is associated with a quartz-carbonate vein(?) system in a volcanic environment. Sulphides vary from pyrite-rich to sphalerite-rich assemblages with generally lesser amounts of the other base metal sulphides galena and chalcopyrite. Electrum and tetrahedrite are both present as sources of previous metal values.

Other elements indicated by qualitative spectrographic analysis (Table I) include cadmium (most likely contained in the iron-poor sphalerite), tungsten in sample 3 (no fluorescent minerals detected by U.V. lamp), manganese (generally a high level overall in ores and host rocks) and other minor elements such as Bi, As and Ga.

The base metal sulphides should respond well to mineral dressing. The only cause for concern might be locked particles of electrum and galena in the pyrite which could lead to poor recoveries especially of the precious metals.

J.E. [signature]

for R. Buchan

RB:sls
attach.

TABLE I

Sample No.	PS or PTS No.	Field Description	Lab Description
1	PS 7714	"Northern Lights" Ore	Major Sphal; minor Cp., Gal, Py. Traces Electrum, Tetrahedrite, Pyrargyrite(?)
2	PTS 6412	Porphyry	Highly sericitized Quartz Feldspar Porphyry
3	PS 7715,16	"Glory Hole" Ore	Major: Sphal, Gal, Py. Minor: Cp Traces Tetrahedrite, Covellite
4	PTS 6413	Purple Tuff	Hematitic crystal-lithic tuff
5	PTS 6414 PS 7717	Sulphides	Major Py; Moderate Cp, Gal, Sphal in Quartz/Carbonate matrix
6	PTS 6415	"Glory Hole" Ore	Major Py; Minor Sphal, Gal; Tr. Cp, Tetrahedrite, Electrum
7	PTS 6416	"Rock"	Carbonatized, sericitized tuff
8	PS 7718	Sulphides	Major Py; Moderate Cp, Gal, Sphal; Traces Tetrahedrite, Electrum

Sample 1 "Northern Lights" Sulphides PS-7714

Sphalerite is the major sulphide in this sample of rocky massive sulphides. It contains abundant medium grained rounded inclusions of galena and chalcopyrite, scattered euhedral to anhedral crystals of pyrite and a moderate amount of exsolution blebs of chalcopyrite. The pyrite often contains blebs of galena and is also marginally replaced by it. Rare traces of tetrahedrite occur within galena and one grain of electrum occurs as a 5 μm diameter bleb in pyrite. An anisotropic grey mineral in sphalerite is tentatively identified as ruby silver or pyrargyrite.

Sample 2 "Porphyry" PTS-6412

This is an excellent example of a sericitized and partly carbonatized quartz feldspar porphyry. Rounded subhedral quartz phenocrysts, sericite and muscovite replacement of sharp euhedral feldspar laths and coarse, partially replaced (by carbonate) feldspar are set in a very fine grained sericitic groundmass. Euhedral crystals of pyrite and of leucoxenized ilmenite are widely disseminated whereas traces of sphalerite are of only local occurrence.

Sample 3 "Glory Hole" Sulphides PS-7715,16

Both sections show similar mineral assemblages and relationships. Pyrite, galena and sphalerite are the major sulphides. Pyrite occurs in euhedral crystals and also anhedral grains which have been partly attacked and replaced by galena. The latter forms blebs within the pyrite and also occurs in medium - to coarse grained patches within the sphalerite. Exsolution blebs of chalcopyrite are present in the sphalerite and covellite is present in one area of the section where supergene alteration of a coarser patch of chalcopyrite has taken place. Traces of tetrahedrite complete the opaque assemblage.

Sample 4 Purple Tuff PTS-6413

Finely disseminated hematite creates the distinctively purple colour of this sample of tuff. The lapilli tuff consists of highly altered volcanic rock fragments and crystal fragments of (mainly) sericitized feldspar.

Sample 5 Sulphides PTS-6414 and PS-7717

Pyrite is the major opaque mineral in this massive sulphide specimen. It is mainly coarse grained, subhedral, fractured and partly replaced by the base metal sulphides, especially galena. Fracture fillings and inclusions in pyrite consist of galena and chalcopyrite. Sphalerite is generally coarse grained with moderate amounts of chalcopyrite exsolution blebs. Tetrahedrite is the only apparent silver-bearing mineral present in the sample.

The sulphides have good concentrating characteristics compared to other Cu-Pb-Zn-Ag ores. Most of the losses in treating the material would be due to galena entrapment in pyrite.

The host rock in PTS-6414 is a very coarse grained mixture of highly strained quartz and carbonate. Occasional coarse patches of sericitized feldspar may represent wall rock fragments caught up in the late quartz/carbonate vein (?) system. A few patches of chlorite complete the silicate assemblage.

Sample 6 "Glory Hole" Sulphides PTS-6415

The pol-thin section shows a sharp contact between a host rock identical to sample 2, quartz-feldspar porphyry, and a mineralized quartz/carbonate band identical to that of the previous sample. Mineralization consists of very coarse grained, heavily corroded and porous pyrite with interstitial galena and sphalerite. Chalcopyrite is rare in the section. Traces of tetrahedrite and electrum are also present, the latter as inclusions in pyrite up to 30 μm diameter.

Sample 7 "Rock" PTS-6416

The general texture in pol-thin section is that of a tuff. It is very highly altered and relict textures are masked by sericite and carbonate. Quartz (15-20%), chlorite (6-8%) sphene-leucoxene (∿ 1%) and pyrite (3-4%) occur with the altered feldspar and carbonate. The pyrite forms a single layer of euhedral crystals across the section and is accompanied by traces of chalcopyrite and galena.

Sample 8 "Sulphides" PS-7718

The sulphide association is similar to the quartz/carbonate/sulphide band in sample 6. Coarse grained subhedral pyrite is occasionally highly porous and filled with blebs of galena, chalcopyrite and electrum. Sphalerite and tetrahedrite occur adjacent to pyrite within gangue. Some coarse patches of tetrahedrite are present, in contrast to other sections where it is generally a trace constituent. Electrum is also much more abundant in this section. It forms irregular inclusions within pyrite and also occurs in coarser grains (up to 120 X 25 μm) attached to pyrite.

The polished section has been submitted for electron-probe analysis to determine the Au and Ag contents of the electrum and also the Ag content of tetrahedrite and galena. Results will be reported as soon as possible.

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: REPORT No. Q-1195

ANALYTICAL METHOD:

REQUESTED BY: DATE: Sept 1/81

RECEIVED FROM: CHARGE: JO#2953

SAMPLE No.: L#81-588 No. of SAMPLES: 8

SAMPLE DESCRIPTION: Silbak-Premier

	#1 Ore	#2 Ore
10 – 100%	Si	Si
3 – 30%		Al
1 – 10%	Fe(Zn)	Fe,K,Ca
0.3 – 3%	Cu,Ca	Mg
0.1 – 1%	Mg(Pb),Al	
0.03 – 0.3%	Mn	Mn,Ti
0.01 – 0.1%	K	
0.003 – 0.03%	Bi,Cd,Ag,Ni	V,Cu,Ba
0.001 – 0.01%	As,Ti,Ba	As,Pb,Ag,Ni
0.0003 – 0.003%	Co,Cr	Cr
0.0001 – 0.001%	V	Ga
< 0.0003%		Mo,Co
I		
S	Pb,Zn	

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu,Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

FML-1017 Analyst

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: REPORT No. Q-1195

ANALYTICAL METHOD:

REQUESTED BY: DATE: Sept 1/81

RECEIVED FROM: CHARGE: JO#2953

SAMPLE No.: L#81-588 No. of SAMPLES: 8

SAMPLE DESCRIPTION: Silbak-Premier

	#3 Ore	#4 Ore
10 – 100%	Si	Si
3 – 30%		Al
1 – 10%	Fe,Al	Fe,Ca
0.3 – 3%	(Zn),Ca	Mg
0.1 – 1%	Mg,(Pb),Cu	Cu,Na
0.03 – 0.3%	Mn	Ti,K
0.01 – 0.1%	K	Mn
0.003 – 0.03%	W,Ag,Ti	V,Ni
0.001 – 0.01%	As,Ga,Cd,Ni,Ba	As,Pb,Ga,Ag,Sr,Ba
0.0003 – 0.003%	Cr	Co,Cr
0.0001 – 0.001%	V	
< 0.0003%	Mo,Co	
I		
S	Pb,Zn	

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu,Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

FML-1017

Analyst

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: REPORT No. Q-1195

ANALYTICAL METHOD:

REQUESTED BY: DATE: Sept 1/81

RECEIVED FROM: CHARGE: JO#2953

SAMPLE No.: L#81-588 No. of SAMPLES: 8

SAMPLE DESCRIPTION: Silbak-Premier

	#5 Ore	#6 Ore
10 – 100%	Si	Si
3 – 30%	Fe	Fe
1 – 10%	(Zn)	Al,Ca
0.3 – 3%	Mg,Cu,Ca	Mg
0.1 – 1%	(Pb),Al	
0.03 – 0.3%	Mn	Pb,Mn,Zn
0.01 – 0.1%		K
0.003 – 0.03%	Cd,Ag,Ti	Ag,Cu,Ti,Ba
0.001 – 0.01%	As,Ga,Ni,Sr,Ba	As,Ga,V,Ni,Sr
0.0003 – 0.003%	Cr	Cr
0.0001 – 0.001%		
< 0.0003%	Mo,Co	Co
I		
S	Pb,Zn	

I = Interference prevents positive identification.
S = Strong spectral lines, unable to estimate amount.
Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu,Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

FML-1017 Analyst

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: REPORT No. Q-1195

ANALYTICAL METHOD:

REQUESTED BY: DATE: Sept 1/81

RECEIVED FROM: CHARGE: JO#2953

SAMPLE No.: L#81-588 No. of SAMPLES: 8

SAMPLE DESCRIPTION: Silbak-Premier

	#7 Ore	#8 Ore
10 – 100%	Si	Si
3 – 30%	Al	
1 – 10%	Fe,K,Ca	Fe
0.3 – 3%	Mg	Al(Zn)
0.1 – 1%		Mg
0.03 – 0.3%	Mn,Na,Ti	Pb,Cu,Ca
0.01 – 0.1%		K
0.003 – 0.03%	V,Cu,Ba	Ag,Ti
0.001 – 0.01%	As,Pb,Ga,Ag,Ni	As,Mn,Ga,Cd,Ni,Ba
0.0003 – 0.003%	Cr,Sr	Cr
0.0001 – 0.001%		V
< 0.0003%	Co	Co
I		
S		Zn

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu,Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

FML-1017 Analyst

FALCONBRIDGE METALLURGICAL LABORATORIES

Mineralogy Report #1209

TO: T. Chandler

PROJECT No. 302-811007 (JO#2959)

FROM: R. Buchan

SAMPLE No. L#81-619

DATE: October 7, 1981

SUBJECT: Mineralogical Examination of Samples from Silbak-Premier Mine, B.C.

KEYWORDS: (in title)

DISTRIBUTION: RAB, JBG, WDH/Circ, Min File

DESCRIPTION OF SAMPLE: INFORMATION REQUESTED

74 drill core samples from three holes cross-sectioning the lithology of the deposit were submitted on September 2nd for mineralogical examination and analysis. 14 of the samples had been marked for high priority examination. A previous group of 8 character samples from the property was described in MR#1205.

PROCEDURES:

- [X] Spectrochem. Analysis
- [X] Chemical Analysis
- [ ] X.R.D.
- [X] Optical Microscopy
- [ ] Electron Probe
- [ ]

Pol-thin sections were prepared from the 14 high priority samples. Pulverized portions of each were submitted for qualitative spectrographic analysis (Table I).

RESULTS:

A tabulation of field and lab classifications is given on the following page. Brief comments on the pol-thin sections are also attached.

The suite consists almost entirely of fine grained tuffs which have undergone carbonatization, sericitization and in some cases silicification.

...2

Semi-quantitative estimates of the K_2O and Na_2O contents of the samples are also given in Table I. The tuff sequence in DDH 81-25-s appears to have an increasing K_2O content down through the hole whereas Na_2O levels are generally low throughout.

Mercury analyses were also obtained for five selected samples with the following results:

DDH 81-25-s	@ 860'	- 0.05	ppm Hg
DDH 81-28-u	@ 20'	- <.01	" "
	@ 80'	- 0.10	" "
	@ 120'	- 0.17	" "
	@ 140'	- 0.04	" "

Attached to this report is a memo giving the results of electron probe analysis of silver minerals in PS-7718 which was described in MR#1206. According to the analysis, the gold:silver ratio in electrum is slightly less than 2:1.

R. Buchan

R. Buchan

RB:sls
attach.

Sample Location	PTS No.	Field Classification	Lab Classification
DDH 81-25-s @ 40'	6437	Porphyroblastic Tuff	Quartz-feldspar porphyry or/Crystal Tuff
@ 80'	6438	Dolerite (lamprophyre)	Dolerite
@ 180'	6439	Greenstone	Sericitized Tuff
@ 280'	6440	Siliceous Tuff	Carbonatized, Sericitized Tuff
@ 500'	6441	Greenstone	Carbonatized, Sericitized Tuff
@ 600'	6442	Premier Porphyry	" " "
@ 800'	6443	Greenstone	" " "
@ 860'	6444	Silicified Breccia	Sericitized Tuff
@ 1040'	6445	Rhyolitic Pyroclastic	Carbonatized, Sericitized Tuff
DDH 81-28-u @ 20'	6446	Greenstone	Carbonatized, Sericitized Tuff
@ 80'	6447	Silicified Breccia	Silicified Volcanic Breccia
@ 140'	6448	Siliceous Greenstone	Carbonatized, Sericitized Tuff
@ 220'	6449	Greenstone	" " "
DDH 81-40-u @ 20'	6450	Shattered Greenstone	Carbonatized, Sericitized Tuff

PTS 6437 DDH 81-25-s @ 40'

Euhedral to subhedral rounded phenocrysts of quartz and feldspar are set in a very fine grained sericitized groundmass. The latter shows strong orientation (including flow textures?) and also encloses a few blocky mafic grains (chlorite after amphibole?). Carbonate alteration is pervasive and most of the feldspar phenocrysts are replaced to various degrees. Euhedral pyrite, aggregates of sphene/ilmenite and rare grains of zircon complete the mineral assemblage. The rock may be classified as a quartz-feldspar porphyry of dacitic composition or as a crystal tuff.

PTS 6438 DDH 81-25-s @ 80'

In pol-thin section, the equigranular rock shows a matted fabric of partly epidotized euhedral plagioclase laths interspersed with patches of chlorite (after pyroxene or amphibole) and carbonate. Quartz, ilmenite and sphene are also interstitial to the feldspar. The section has a relict doleritic texture and the lab classification confirms that of the field term dolerite.

PTS 6439 DDH 81-25-s @ 180'

A fine grained oriented sericitic groundmass contains abundant relict fragments. The fragments are vague in outline and consist mainly of alteration minerals chlorite plus carbonate. Some are of volcanic rock origin while others are monomineralic (mainly altered feldspar). Quartz, fine grained euhedral pyrite, traces of chalcopyrite and galena, skeletal intergrowths of ilmenite and sphene complete the mineral assemblage.

The rock is classified as a sericitized tuff.

PTS 6440 DDH 81-25-s @ 280'

A very fine grained sericitized tuff is criss-crossed by veinlets of carbonate and quartz. Disseminated fine to medium grained pyrite is irregular in distribution. Some patches of sphalerite occur with coarse pyrite. One grain of zircon occurs in the section. The tuff is highly masked by potassic (sericitic) alteration but relict textures indicate its common origin with other rocks in the sequence.

PTS 6441 DDH ST 81-25-s @ 500'

Coarse grained blocky carbonate accompanied by selvages of chlorite crosscut the section in wide veinlets. The tuff shows abundant examples of partly altered (sericite/carbonate) rock fragments, including sharp fragments which may have been originally of glassy composition.

The rock is classified as a sericitized, carbonatized tuff which has been transected by late carbonate veinlets.

...2

PTS 6442 DDH ST 81-25-s @ 600'

Radial chlorite clusters and euhedral crystals of quartz accompany massive carbonate in crosscutting veinlets. The host rock is a very heavily sericitized and carbonatized tuff. Scattered grains of pyrite, zircon, ilmenite and sphene occur throughout the section.

PTS 6443 DDH ST 81-25-s @ 800'

Heavily disseminated grains of sub-to euhedral pyrite (8-10%) are prominent in this heavily sericitized tuff. Fragments up to 1 cm long are much coarser than any of the other tuffs in the upper portion of the drill hole. Occasional patches of sphalerite and galena are present in trace amounts.

PTS 6444 DDH 81-25-s @ 860'

Scattered euhedral grains of pyrite are usually rimmed with chlorite in this sericitized tuff. Some volcanic rock fragments in the tuff are quite coarse (up to 5 mm).

PTS 6445 DDH 81-25-s @ 1040'

Sericite and carbonate alteration of this tuff is very intense with the fragment/matrix definition difficult to see. Very fine grained pyrite is heavily disseminated throughout the section.

PTS 6446 DDH 81-26-u @ 20'

Irregular patches and veinlets of carbonate are abundant throughout this heavily sericitized tuff.

PTS 6447 DDH 81-28-u @ 80'

This breccia sample differs considerably from others examined. It is highly siliceous with abundant quartz occurring in a very imhomogeneous-textured rock. Patches and veinlets of carbonate are also erratic. Sub-to euhedral pyrite is abundant (6-8%) and traces of sphalerite are also present. From the textures observed, the rock is classified as a silicified volcanic breccia, likely tuffaceous in origin.

PTS 6448 DDH 81-28-u @ 140'

This is an excellent example of a highly sericitized and carbonatized tuff with fragments generally elongated along the direction of flow.

...3

PTS 6449 DDH 81-28-u @ 220'

This tuff is very similar to the previous sample at 140'. However, instead of disseminated pyrite, it carries disseminated rounded subhedral grains of magnetite. Traces of chalcopyrite are also present in the section.

PTS 6450 DDH 81-40-u @ 20'

Sericite, carbonate and chlorite alteration is a feature of this tuff. Finely disseminated pyrite occurs throughout most of the section, along with skeletal blades of ilmenite and rare blebs of chalcopyrite.

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: REPORT No. Q-1198

ANALYTICAL METHOD:

REQUESTED BY: DATE: Oct 7/81

RECEIVED FROM: CHARGE: JO#2959

SAMPLE No.: L#81-619 No. of SAMPLES: 14

SAMPLE DESCRIPTION: Volcanic Rocks

	81-25-s @ 40'	81-25-s @ 80'
10 – 100%	Si	Si
3 – 30%		Fe, Ca
1 – 10%	Fe, Al, Ca	Mg, Al, Na
0.3 – 3%	Mg, Na, K	K
0.1 – 1%		Ti
0.03 – 0.3%	Mn, Ti	Mn
0.01 – 0.1%		Sr
0.003 – 0.03%	Ga, V, Cu, Sr, Ba	Ga, V, Cu, Zr, Ba
0.001 – 0.01%	B, Zr	Ni
0.0003 – 0.003%	Ni, Cr	Cr
0.0001 – 0.001%		Co
< 0.0003%	Ag, Co	Ag
Rough Estimates Only K_2O	3%	3%
Na_2O	0.3%	5%

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu, Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

FML-1017

Analyst

TABLE I

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: REPORT No. Q-1198

ANALYTICAL METHOD:

REQUESTED BY: DATE: Oct 7/81

RECEIVED FROM: CHARGE: JO#2959

SAMPLE No.: L#81-619 No. of SAMPLES: 14

SAMPLE DESCRIPTION: Volcanic Rocks

		81-25-s @ 180'	81-25-s @ 280'
	10 – 100%	Si	Si
	3 – 30%	Fe	Ca
	1 – 10%	Mg, Al	Fe, Al, K
	0.3 – 3%	K, Ca	Mg
	0.1 – 1%		
	0.03 – 0.3%	Mn, Ti	Mn, Ti
	0.01 – 0.1%	Na	Na
	0.003 – 0.03%	Ga, V, Cu, Ba	Ga, V, Cu, Sr, Ba
	0.001 – 0.01%	B, Pb, Zr	B, Pb, Mo, Ag, Zr
	0.0003 – 0.003%	Ni, Cr	Ni, Cr
	0.0001 – 0.001%	Co	
	< 0.0003%	Ag	
Rough Estimates Only	K_2O	3%	2%
	Na_2O	.03%	.03%

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu, Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

FML-1017

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FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: REPORT No. Q-1198

ANALYTICAL METHOD:

REQUESTED BY: DATE: Oct 7/81

RECEIVED FROM: CHARGE: JO#2959

SAMPLE No.: L#81-619 No. of SAMPLES: 14

SAMPLE DESCRIPTION: Volcanic Rocks

	81-25-s @ 500'	81-25-s @ 600'
10 – 100%	Si	Si
3 – 30%	Fe, Ca	Fe, Ca
1 – 10%	Mg, Al, K	Mg, Al, K
0.3 – 3%		Na
0.1 – 1%	Ti	
0.03 – 0.3%	Mn	Mn, Ti
0.01 – 0.1%	Na	
0.003 – 0.03%	Ga, V, Cu, Sr, Ba	Ga, V, Cu, Zr, Sr, Ba
0.001 – 0.01%	B, Zr, Ni	B, Mo
0.0003 – 0.003%	Cr	Ni, Cr
0.0001 – 0.001%	Co	
< 0.0003%	Ag	Ag, Co
Rough Estimates Only K_2O	6%	5%
Na_2O	.03%	1%

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu,Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

Analyst

TABLE I

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: REPORT No. Q-1198

ANALYTICAL METHOD:

REQUESTED BY: DATE: Oct 7/81

RECEIVED FROM: CHARGE: JO#2959

SAMPLE No.: L#81-619 No. of SAMPLES: 14

SAMPLE DESCRIPTION: Volcanic Rocks

		81-25-s @ 800'	81-25-s @ 860'
	10 – 100%	Si	Si
	3 – 30%	Fe, Ca	Fe
	1 – 10%	Mg, Al, K	Mg, Al, K, Ca
	0.3 – 3%		
	0.1 – 1%	Ti	Na
	0.03 – 0.3%	Mn, Na	Mn, Zn, Ti
	0.01 – 0.1%		Pb
	0.003 – 0.03%	Ga, V, Cu, Sr, Ba	Ga, V, Cu, Sr, Ba
	0.001 – 0.01%	B, Zr	B, Zr
	0.0003 – 0.003%	Ni, Cr	Ag, Ni, Cr
	0.0001 – 0.001%	Co	Co
	< 0.0003%	Ag	
Rough	K_2O	8%	8%
Estimates Only	Na_2O	.03%	.05%

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu,Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

FML-1017

Analyst

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: REPORT No. Q-1198

ANALYTICAL METHOD:

REQUESTED BY: DATE: Oct 7/81

RECEIVED FROM: CHARGE: JO#2959

SAMPLE No.: L#81-619 No. of SAMPLES: 14

SAMPLE DESCRIPTION: Volcanic Rocks

		81-25-s @ 1040'	81-28-u @ 20'
	10 – 100%	Si	Si
	3 – 30%	Fe, Ca	Fe, Ca
	1 – 10%	Mg, Al, K	Mg, Al, K
	0.3 – 3%		
	0.1 – 1%		Zn, Ti
	0.03 – 0.3%	Mn, Na, Ti	Mn, Na
	0.01 – 0.1%		
	0.003 – 0.03%	B, Ga, V, Cu, Sr, Ba	Ga, V, Cu, Sr, Ba
	0.001 – 0.01%	Zr	B, Zr, Ni
	0.0003 – 0.003%	Ni, Cr	Cr
	0.0001 – 0.001%	Co	Co
	< 0.0003%	Ag	Ag
Rough Estimates Only	K_2O	8%	8%
	Na_2O	.03%	.03%

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu, Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

FML-1017

Analyst

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: REPORT No. Q-1198

ANALYTICAL METHOD:

REQUESTED BY: DATE: Oct 7/81

RECEIVED FROM: CHARGE: JO#2959

SAMPLE No.: L#81-619 No. of SAMPLES: 14

SAMPLE DESCRIPTION: Volcanic Rocks

		81-28-u @ 80'	81-28-u @ 140'
	10 – 100%	Si	Si
	3 – 30%	Fe, Ca	Fe
	1 – 10%	Al	Mg, Al, K, Ca
	0.3 – 3%	Mg, K	
	0.1 – 1%		Ti
	0.03 – 0.3%	Mn, Ti	Mn, Na
	0.01 – 0.1%		
	0.003 – 0.03%	Ga, Cu, Sr, Ba	Pb, Ga, V, Cu, Sr, Ba
	0.001 – 0.01%	B, Pb, V, Zr, Ni	B, Ag, Zr, Ni, Co
	0.0003 – 0.003%	Ag, Cr	Cr
	0.0001 – 0.001%		
	< 0.0003%	Co	
Rough Estimates Only	K_2O	1%	10%
	Na_2O	<.01%	.03%

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu,Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

FML-1017

Analyst

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: REPORT No. Q-1198

ANALYTICAL METHOD:

REQUESTED BY: DATE: Oct 7/81

RECEIVED FROM: CHARGE: JO#2959

SAMPLE No.: L#81-619 No. of SAMPLES: 14

SAMPLE DESCRIPTION: Volcanic Rocks

		81-28-u @ 220'	81-40-u @ 20'
	10 – 100%	Si	Si
	3 – 30%	Fe, Ca	Fe
	1 – 10%	Mg, Al, K	Mg, Al, K, Ca
	0.3 – 3%		
	0.1 – 1%	Ti	Na, Ti
	0.03 – 0.3%	Mn, Na	Mn
	0.01 – 0.1%		
	0.003 – 0.03%	Ga, V, Cu, Sr, Ba	Ga, V, Cu, Sr, Ba
	0.001 – 0.01%	B, Zr, Ni	B, Pb, Zr, Ni, Co
	0.0003 – 0.003%	Co, Cr	Ag, Cr
	0.0001 – 0.001%		
	< 0.0003%	Ag	
Rough Estimates Only	K_2O	6%	10%
	Na_2O	.03%	.05%

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu,Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

FML-1017

Analyst

FALCONBRIDGE NICKEL MINES LIMITED

INTER OFFICE MEMORANDUM

MEMO TO: R. Buchan

FROM: G. Springer/L.M.P. Chan

DATE: September 28, 1981

SUBJECT: Silver Distribution in Ore from Silbak-Premier Mine, B.C.

PROJECT No. 302-810928

SAMPLE NO. L#81-588

KEYWORDS: Tetrahedrite, Electron probe

COPIES TO: RAB, File

Polished section PS-7718 of a sulphide rich grab sample from the Silbak-Premier Mine in B.C. was examined by electron probe with a view of establishing the distribution of silver and gold. The following results were obtained:

1. Electrum: 37.8% Ag
2. Galena: Less than 100 ppm Ag in solid solution. However the mineral contains frequent inclusions of acanthite, Ag_2S.
3. Tetrahedrite:

	As	Cu	Fe	Zn	Sb	S	Total
Wt %:	9.52	31.2	1.31	5.78	26.9	23.9	98.6

All of the above minerals occur at very low abundancy levels of less than 0.1 vol. %.

GS:sls

G. Springer

REPORT ON

BRITISH SILBAK PREMIER MINES LTD.

STEWART, B.C.

C. E. Michener, Ph.D., P.Eng.

J. O. C. Kerr, P.Eng.

Toronto, Ontario
December 5, 1980

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APPENDICES

LIST OF MAPS

SUMMARY

(1) The British Silbak Mine staff has outlined underground exploration targets at the Northern Light and related mineralized zones. We believe that exploration of these areas provides the best possibility of increasing the tonnage of the British Silbak Premier Mine at the present time and during the winter period. Developing a large, low-grade tonnage of ore on the sixth level also presents possibilities. The whole programme, although it contains risk elements, should be completed with the budget provided.

(2) An important exploration effort on surface should be the development drilling of ore-grade material found this past season. The potential for large, low-grade tonnage on surface was not shown to exist.

(3) Ore remaining in underground pillars and remnants adjacent to old stopes could not, in all probability, be economically mined and removed.

(4) A competent mine geologist is essential to the success of the underground programme.

C. E. Michener, Ph.D., P.Eng.

J. O. C. Kerr, P.Eng.

Toronto, Ontario
December 5, 1980

INTRODUCTION

A preliminary report with recommendations was prepared for British Silbak Premier Mines Ltd. on August 1st, 1980. For reference purposes, a copy of that report is attached as Appendix A. The progress made in the 1980 field season will be reviewed first followed by an assessment of the property and recommendations and conclusions summarized below.

EXPLORATION PROGRESS - SURFACE

A field camp consisting of tent frames and a cookery was erected at the property. This served as a base to repair the access roads which lead to the various portals which occur at different levels and also to the glory hole or open cut. Considerable clean-up work was required to gain access to the glory hole.

Two base lines were laid out on surface in a direction parallel to the strike of the ore zones and detailed geological mapping at a scale of 100 ft. to the inch was carried out over an area approximately 2,400 ft. by 4,800 ft. The glory hole served as a focal point for the mapping area. There are several prospect pits and adits in the mapped area. These were sampled where appropriate. The location of previous surface diamond drilling was plotted for correlation purposes.

A geochemical survey was carried out on the same grid pattern, sampling was done on lines 100 ft. apart and at 25 ft. intervals where possible. The results were contoured and used as a base for laying out the surface diamond drilling to be started later in the summer. A total of 23 bore holes was completed and these were grouped in four different areas controlled by the presence of geochemical anomalies. Map No. 1, at a scale of 100 ft. equals 1 inch, shows the results. The map shows geochemical results and the location of the bore holes drilled this season. A brief summary of the bore holes, which obtained interesting results, is shown below by area. Ore-grade material was found in bore hole numbers 80-1 and 80-5 at the east end of the glory hole. Ore-grade intersections were also obtained at the Pictou area, Cascade Falls area, and the Buckham area. Assays for some surface samples are also listed in the table.

TABLE 1

HIGHLIGHTS OF ASSAY RESULTS RECEIVED TO NOVEMBER 20, 1980

I - DIAMOND DRILL HOLES

DDH	FOOTAGE	WIDTH	% Pb	% Zn	OZ./T Au	OZ./T Ag
Glory Hole Area						
80-1	452-457	5'	0.01	0.03	0.026	5.47
	457-462	5'	0.08	0.27	0.162	7.16
	(Av. 452-462)	10'			0.094	6.32
	465' hole broke into stope above 110 level.					
80-5	199-204	5'			0.042	5.38
	279-282	3'	0.06	0.01	0.054	6.44
	282-287	5'	0.08	0.08	0.040	8.34
	(Av. 279-287)	8'			0.045	7.63
	353.5-358.5	5'			0.448	1.42
	358.5-363.5	5'			0.020	8.50
	(Av. 353.5-363.5)	10'			0.234	4.96
	368.5' hole broke into glory hole.					
Pictou						
80-10	94.7- 95.7	1'			0.050	2.30
	166.7-168.1	1.4'			0.016	5.74
80-11	200.5-202.3	1.8'			0.154	0.27
Prospect						
80-12	319.2-320.2	1'	0.09	0.14	0.048	8.52
	320.2-323.2	3'	0.02	0.03	0.003	0.70
	(Av. 319.2-323.2)	4'			0.014	2.66
	356.2-362.5	6.3'	0.30	0.92	0.040	3.26
80-13	223-226.5*	3.5'			0.036	4.04
Cascade Falls #8						
80-14	263.7-265.2*	1.5'			0.023	0.18
	265.2-267.7*	2.7'			0.028	12.91
	(Av. 263.7-267.7)	4'			0.026	8.14

* - assays by Scotty Gold Lab, Stewart.

DDH	FOOTAGE	WIDTH	% Pb	% Zn	OZ./T Au	OZ./T Ag
Buckham Pictou						
80-16	317.1-323*	5.9'			0.014	6.54
	323-324*	1'			0.056	17.08
(Av.	317.1-324	6.9'			0.020	8.07
80-18	454.1-458.6*	4.5'			0.212	0.85
	458.6-460.4*	1.8'			0.006	0.27
(Av.	454.1-460.4)	6.3'			0.153	0.68
	466.7-468.6*	1.9'			0.008	3.77
	468.6-469.6*	1'			0.012	5.16
(Av.	466.7-469.6)	2.9'			0.009	4.25

II - TRENCHES & EXPLORATORY TUNNELS

SAMPLE NO.	WIDTH (FT.)	% Pb	% Zn	OZ./T Au	OZ./T Ag	OZ./T Au EQUIV.
Pictou Tunnel						
80-1085	6'	0.63	6.01	0.168	0.99	0.201
80-1082	6.5'	0.90	1.59	0.090	1.35	0.135
80-1081	6.5'	1.28	1.30	0.048	1.83	0.109
Pictou Trenches						
80-1092	6'	0.82	1.41	0.032	1.90	0.095
80-1112	1.5'	2.14	3.58	0.042	25.46	0.891
80-1113	5'	0.82	2.96	0.034	1.82	0.095
80-1115	4'	0.12	0.35	0.030	3.32	0.141
Prospect Tunnel						
80-1086	5'	2.03	1.18	0.110	1.85	0.172
80-1087	8'	0.34	1.06	0.092	2.23	0.166
80-1089	5'	0.27	0.44	0.020	9.12	0.324
80-1090	4.5'	0.31	0.42	0.014	10.80	0.374
Prospect Trench						
80-1007	3'	0.30	1.42	0.030	5.02	0.197

* - assays by Scotty Gold Lab, Stewart.

The drilling outlined above has pinpointed some targets, which will require delineation drilling next summer when access is possible. Assay results have not been received for the most recent bore holes, 23 in total.

UNDERGROUND WORK

The sixth level portal was retimbered and the rehabilitation of the sixth level started. This involved scaling, relaying the track, air line installation, and retimbering where necessary. Generally, this level is in good condition, except for the timber.

A programme of replotting the assay results from the old mine workings was started during the summer, but had to be stopped for lack of personnel. However, enough replotting of drift samples, diamond drill samples and percussion drilling samples was accomplished by Mr. Bjorkman, especially on the sixth level, to assess the ore potential below the sixth level. As a result of this work, proposals for exploration of this particular area have been prepared. In going through the records, it was found that, although they are fairly complete, a systematic filing system is badly needed for these records, along with the experience and ability to interpret these underground geological records, and their significance.

A full-time mine geologist is required to do this type of work. This would take possibly three months.

An assessment of the ore potential left in pillars in the old mine workings and the broken ore still remaining in the ore passes or stopes was also undertaken by Mr. Bjorkman. The conclusion was tentatively reached that the cost of mining a large number of isolated pillars where the timber has deteriorated is very expensive and probably would not be an economic undertaking. Some broken ore could be pulled in the general salvage operations of the mine, but this tonnage would not be great.

The replotting of values and colour coding the location of the values focus attention on the sixth level where ore potential exists at the 602 winze area and at the Northern Light mine shaft (NL) on the 787 cross-cut. Both of these areas have proven ore below the sixth level and were in the process of development when the mine closed down. The workings of both locations are flooded up to the sixth level track elevation and would require dewatering before underground exploration, together with the diamond drilling, could be carried out from the workings below the sixth level. However, the down-dip extension of these ore zones could be explored from both the surface and underground below the sixth level. The position of these targets is shown on the sixth level map no. 2 and in more detail on map nos. 3 and 4.

LARGE, LOW-GRADE ZONE ON SIXTH LEVEL

The former operators drilled a series of flat diamond drill holes at 90° to the sixth level tunnel over a length of 3,000 ft. along the adit. These holes, mostly over 1,000 ft. in length, were assayed for silver only and encountered large, low-grade intersections. Typical assays were 0.61 oz./ton over approximately 1,000 ft., 0.375 oz./ton over a similar distance, and 0.43 oz./ton over about 500 ft. The mineralized area on both sides of the adit would be approximately 2,400 ft. long by 800 ft. wide, with a back height of 1,300 ft. to surface. It is intended to chip sample the adit to confirm these values. The possibility exists here for a very large tonnage of low-grade ore which could be mined very cheaply.

The volcanic rock is mineralized with fine pyrite throughout and presumably there is also minor lead, zinc and gold present. The programme of check sampling of this adit has not been started but will be included in the proposed exploration programme for this winter.

GENERAL GEOLOGICAL ASSESSMENT, 1980

Previous reports on the property had suggested the possibility of a large, very low-grade open pit area to the east and surrounding the glory hole area. However, the drilling carried out this summer demonstrates there is present in this area a number of ore grade zones which may be developed as small open pits or a small underground operation and does not indicate consistent low-grade values over a large area. The most encouraging of these are the Buckham, the Cascade, the Pictou and the East Glory Hole areas shown on the surface map. Systematic diamond drilling of the better-grade ore intersections could be done next summer and is not included in the current budget.

The ore still remaining in the pillars has been calculated by previous mine staff and the present staff. It would represent about 31,000 tons grading 0.35 oz. Au/ton and 0.346 oz. Ag/ton. After investigating the situation underground it is our opinion that the cost of trying to recover this small amount of tonnage would be more than the value received, and therefore would not be economic. The broken ore remaining in the old stopes and ore passes is estimated to be about 6,000 tons. Some of this could be recovered on the sixth level. The grade is estimated to be similar to the pillars.

The main effort, the development of new ore, should therefore be directed to the higher-grade zones located on surface and to known ore, and ore extensions, on and below the sixth level. The latter could be converted for good access without too much cost and the exploration could be carried out on this level during the winter months.

ORE RESERVES

On surface there are four zones which have returned ore-grade intersections from recent diamond drilling. Before these can be classified as proven, a large amount of development drilling will be required. At the present time, these can only be classified as potential orebodies.

On the sixth level there are substantial drill intersections at the 602 winze area, which indicate the presence of an ore zone. Sufficient drilling has not been completed to warrant calling this drill-indicated or proven. This area was evidently in the process of being developed at the time the mine closed down due to the fire in the mill. The winze and some other workings below the sixth level are already completed, but would require dewatering (see Map 2).

In the Northern Light mine shaft area, two ore zones are outlined close to the Northern Light mine shaft. These zones run from the sixth level downward, and are shown on Map No. 3 and 4 . The total tonnage indicated by previous drilling would be about 66,000 tons grading 0.08 oz. Au/ton, 2.01 oz. Ag/ton, 4.2% Pb and 6.1% Zn. These are called the Northern Light Shaft Zone and the Northern Light East Zone, both of which are open and which could possibly develop additional tonnage with additional exploration.

To the east of the Northern Light ore zones there is, in the drift, a good deal of mineralization indicated in the back, and in some instances stoping has been carried out on or above the sixth level. These areas are shaded on Map No. 5 and exploration of these mineralized areas could be carried out by diamond drilling in conjunction with the drilling of the Northern Light Shaft Zone and Northern Light East Zone. We believe that exploration of these areas provides the best possibility of increasing the tonnage of the British Silbak Premier Mine at the present time and during the winter period.

EXPLORATION PROGRAMME

Map No. 5 shows a proposed diamond drill programme designed to utilize two short drifts to be driven for diamond drill stations. Drilling will be carried out from the hanging wall side of the Northern Light ore zones and associated zones which lie north and east of the Northern Light. In addition to this, the same zone could be drilled from the surface to penetrate the area below the Northern Light zone at a deeper level than can be reached from underground. This is indicated on Map No. 6 in plan. Two diamond drills could be used continuously throughout the winter months exploring this potential underground in addition to one diamond drill working from surface.

BUDGET

The following budget has been compiled from data researched by Mr. Vic Bjorkman of British Silbak Premier Mines Limited and Mr. J.O.C. Kerr and Dr. C. E. Michener of Derry, Michener & Booth, and applies only to the winter programme to March 31st, 1981:-

U.G. Rehabilitation - 6th level		$ 36,100
602 winze - 6th level		24,200
620 winze to end Northern Lights		49,400
N.E. of Northern Lights		17,600
X-Cuts for drill set-up		50,000
	SUB-TOTAL	$ 177,300
Salaries		370,000
Administration		15,000
	SUB-TOTAL	$ 385,000
Equipment	SUB-TOTAL	$ 572,400
4 bore holes from surface (see Map No. 6) (Northern Light area) - 3,600 ft. @ $20		$ 72,000
602 winze area - 6 b.h. @ 250'		30,000
Northern Light area - 20 b.h. @ 500'		200,000
Check low-grade silver values on adit walls, 6th level		8,000
	SUB-TOTAL	$ 1,444,700
	Contingency @ 5%	75,000
	GRAND TOTAL	$ 1,519,700
	Say,	$ 1,520,000

CERTIFICATE OF QUALIFICATION

I, Charles E. Michener, of Suite 2302 - 401 Bay St., Toronto, Ontario, a Consulting Geologist and a Partner of the firm of Derry, Michener & Booth, certify that:-

(1) I am a professional geologist and a practising Professional Engineer in the Province of Ontario.

(2) The report contained herein is based upon my visits to the property on July 10th-11th and October 13th-15th, 1980.

(3) I have no interest, directly or indirectly, nor do I expect to receive any such interest, directly or indirectly, in the property of the company or any affiliate; nor do I beneficially own, directly or indirectly, any securities of the company or any affiliates of said company.

C. E. Michener, B.A., M.S., Ph.D., P.Eng.

Toronto, Ontario
December 5, 1980

CERTIFICATE OF QUALIFICATION

I, James O.C. Kerr, of 21 Munro Blvd., Willowdale, Ontario, a Consulting Mining Engineer and an Associate of the firm of Derry, Michener & Booth, certify that:-

(1) I am a professional mining engineer and a practising Professional Engineer in the Province of Ontario.

(2) The report contained herein is based upon my visits to the property on July 18-20 and on November 11-13, 1980.

(3) I have no interest, directly or indirectly, nor do I expect to receive any such interest, directly or indirectly, in the property of the company or any affiliate; nor do I beneficially own, directly or indirectly, any securities of the company or any affiliates of said company.

J.O.C. Kerr, B.A.Sc., P.Eng.

Toronto, Ontario
December 5, 1980

APPENDIX A

APPENDIX A

PRELIMINARY REPORT

BRITISH SILBAK PREMIER MINES LIMITED

C. E. Michener, B.A.,M.S.,Ph.D.,P.Eng.

J. O. C. Kerr, P.Eng.

Toronto, Ontario
August 1, 1980

TABLE OF CONTENTS

INTRODUCTION

At the request of British Silbak Premier Mines Limited I visited the Company's offices and properties on July 10th, 11th, and 12th, 1980 for the purpose of writing a fairly comprehensive evaluation report. It soom became apparent that the work completed so far this year on the property was of a general and geological nature and there was little new hard factual information which would contribute to the report. It was therefore decided to recommend to the British Silbak management that a preliminary report be issued at the present time which would summarize the present status of the mining properties and suggest further approaches for future work. This report is largely a summation of the work of others shown in Appendix A attached to this report.

A week after my visit, mining engineer, James O.C. Kerr of Derry, Michener & Booth, Toronto, and Mr. Irwin S. Parrish, geologist in charge of Derry, Michener & Booth's Denver office, visited the property and were able to enter the underground workings with Mr. Victor Bjorkman on two levels. They found the condition of the adits in reasonably good condition and the same applied to underground workings as far as they were able to go. An assessment of the rehabilitation cost involved to put the mine back in production will be required as soon as possible.

GEOLOGICAL SUMMARY

The most comprehensive geological study of the Stewart area was published in 1971 by the British Columbia Department of Mines and Petroleum Resources under the authorship of Edward W. Grove. His geological concept follows conventional thinking and ascribes the ore deposits to mineralization connected with the extensive Texas Creek granodiorite which is intrusive into a series of cataclastics of volcanic origin and equivalent to the Hazelton Series of rocks consisting of green clastics, black, purple, and green mylonites, and various coloured schists. Farther removed from the intrusive rocks to the northeast is the Hazelton Assemblage and the Bowser Assemblage of Jurassic age consisting mainly of sediments and volcanics. The Texas Creek intrusive has been variously altered at its contact with the volcanics to a pseudo-porphyry with large porphyroblasts. This particular phase of the intrusive was intruded by a swarm of later dykes and there is in the vicinity of these rocks the development of much quartz and carbonate together with value metals following vein-like structures. Later workers have suggested that Premier deposits are of volcanogenic origin and were directly emplaced by volcanic action. If this is correct the approach to ore finding in the district would be altered in some degree but as a practical matter the geometry of the known deposits is the governing factor upon which these deposits will be most likely found. To quote from Edward W. Grove: "A number of the old mines including the Silbak Premier, Indian, Prosperity and Porter Idaho, to name a few, have not yet been subjected to an intensive exploration and valuable high-grade gold deposits are still to be found such as the Bonanza find at the Premier glory hole in 1959 clearly states."

KNOWN DEPOSITS

Surface

The glory hole, which provided much of the high-grade ore at the Premier Mine, presents possibilities for development of new pit ore through a system of grid pattern drilling from surface. It will be necessary to drill these holes because the surface is covered with overburden in the vicinity of the glory hole and to the east of it. Any geochemical samples taken in this area will be contaminated by previous mining activity. It is therefore felt that a series of short holes drilled towards the glory hole from the north and south side on 200' spacings could be started at once and this drilling should be continued to the east and should follow any indications arising from results obtained.

A light surface drill could be carried by helicopter. The helicopter pads could be prepared ahead of time, and the moves made without cutting roads through the bush. This drilling should be done in conjunction with a detailed study of the old assay plans and stoped out levels in the vicinity of the glory hole. There are persistent comments in the older reports concerning values to the east and the south of the glory hole which have never been drilled.

Underground Reserves

The Premier vein system has produced, according to reports of the B.C. Minister of Mines, 4,714,000 tons of ore containing 1,822,000 oz. of gold and 41,019,000 oz. of silver. There was also contained in this ore 0.91 lbs. of copper, 13.25 lbs. of lead and 4.36 lbs. of zinc per ton of ore shipped. In mining this ore there were certain pillars left underground which according to the same authorities and from several private sources contain about 85,000 tons of recoverable ore grading 0.25 oz. of gold, 2.52 oz. of silver, 1.6% of lead and 2.4% of zinc. The ore reserve estimates given by the Company, itself, in 1961 consisted of 170,000 tons including broken ore, measured ore and indicated ore below the 6th level found by diamond drilling. This would imply that there is some 90,000 tons of broken ore and ore in place in the workings and below the 6th level in addition to the pillars.

Ore Dumps and Tailings

There are a number of ore dumps resulting from development muck at the portal of various adits. It appears that the waste rock and ore-bearing material were dumped in separate piles so that development ore could be moved separately from these dumps and put through a mill. For example, the B.C. silver dump contains visible mineralization and no doubt the same is true of other dumps. No attempt was made to estimate the tonnage that might be available here but it would certainly not be less than 50,000 tons. The same might be said for tailings but it is probable that these were dispersed and carried down to the Salmon River in the spring run-off each year; however, this might be worth investigating.

In attempting to summarize the known ore possibilities an additional source of information was made available to the author, a report by W. N. Plumb, P.Eng., dated March 1957. Mr. Plumb states that the following estimates are based upon an intensive preliminary study by the writer assisted by the mine superintendent and the mine engineer of the Silbak Premier and Premier border workings, maps and available assay records, between January 21st and March 20th, 1957.

"'Proven and Indicated' reserves, including broken ore, are estimated as follows:-

	Tons	oz. Au	oz. Ag	% Pb	% Zn
Silbak Premier	75,250	0.28	2.80	1.8	2.7
Premier Border	74,146	0.07	1.98	4.25	6.36
TOTAL	149,396	0.18	2.39	3.0	4.5

In addition to the above, a study of the diamond drill records and recent working areas suggests that the following "Possible" reserves might be developed by an underground drilling programme:

Silbak Premier	90,000 tons
Premier Border	13,000 "
TOTAL	103,000 " "

It appears likely that Mr. Plumb used a lower cut-off grade than was used in the earlier work as he shows a grade for the proven ore of 150,000 tons grading 0.18 oz. Au/ton and 2.39 oz. Ag/ton as against a figure of 0.25 oz. Au/ton and 2.52 oz. Ag/ton for the pillars. Taking Plumb's figures and combining them with other estimates, it appears possible that the recovery of 200,000 tons grading about 0.2 oz. Au/ton and about 2 oz. Ag/ton might be recovered in a salvage operation in the lower levels and pillars of the Premier properties. This would be in addition to the ore dumps and the possible addition of surface ore in the vicinity of the glory hole. The old mine records indicate that a great deal of underground diamond drilling was carried on in the course of the development work. These are in the course of replotting and colour coding so that the ore trends may be followed up. It is to be expected, but not altogether certain, that additional extensions of ore will be found under this programme.

EXPLORATION PROGRAMME

In proposing a programme for exploration and development of the property, it must be remembered that this is a preliminary report subject to change as the programme develops. It is quite apparent that a full-time manager who is in charge of all personnel is needed to operate more efficiently at the property and keep a much tighter control with the personnel than under the present arrangement.

Although the current surface mapping programme will be of value it is essential to have a good mining geologist on the job familiar with underground mine workings and mine development who could correlate the geology and the ore values and develop an exploration programme underground as quickly as possible. This, of course, would be correlated with the surface work. The current programme of geochemistry and I.P. surveys is of future value but should be looked at as a long-range programme, and of no immediate concern. In addition it is expected that the surface surrounding the Premier Mine and vicinity is contaminated and that geochemical results will not likely be very meaningful. It is therefore suggested that the following sequence in a general way be adhered to:-

1. Continue the detailed surface mapping in the immediate vicinity of the glory hole to assist in the layout of the diamond drill programme.

2. Start the diamond drill surface programme as quickly as possible on both sides of the glory hole and on the eastern extension of it.

3. It is essential to obtain an experienced mine geologist to start the underground mapping and correlation of geological information so that a comprehensive exploration programme for the underground could be started.

4. Prepare an estimate of reserves under the direction of the mine geologist, from a mineability standpoint. This would apply mainly to the pillars and the broken ore, the ore immediately below the 6th level. The rehabilitation of the underground workings will have to be assessed possibly by a contractor with the help of the mine geologist.

5. Colour code all assay plans for the following suggested categories:

High Grade (+$250/ton), Ore ($75-$250/ton), Waste (-$75/ton):

6. Set up new plans preferably at 20, 50 and 100 scale and a set of sections at 50 and 100 scale. This would be in conjunction with the colour coding mentioned above. It would be essentially used for exploration under the current programme and could later be used for development work.

7. Institute a statistical study looking at the possibility of developing a large low-grade deposit in the vicinity of the glory hole. The possibility would unfold as the close-spaced drilling around the glory hole advanced and might result in the development of a large tonnage of ore which would be too low grade to mine as an underground project.

8. Formulate plans for the treatment of the ore on a scale of 200 to 300 tons per day keeping in mind environmental problems imposed by the proximity of the American border and the Salmon River.

C. E. Michener, B.A., M.S., Ph.D., P.Eng.

Toronto, Ontario
August 1, 1980

J. O. C. Kerr, P.Eng.

CERTIFICATE OF QUALIFICATION

I, Charles E. Michener, of Suite 2302 - 401 Bay St., Toronto, Ontario, a Consulting Geologist and a Partner of the firm of Derry, Michener & Booth, certify that:-

(1) I am a professional geologist and a practising Professional Engineer in the Province of Ontario.

(2) The report contained herein is based upon my visit to the property on July 10th and 11th, 1980.

(3) I have no interest, directly or indirectly, nor do I expect to receive any such interest, directly or indirectly, in the property of the company or any affiliate; nor do I beneficially own, directly or indirectly, any securities of the company or any affiliates of said company.

C. E. Michener, B.A.,M.S.,Ph.D.,P.Eng.

Toronto, Ontario
August 1, 1980

APPENDIX A

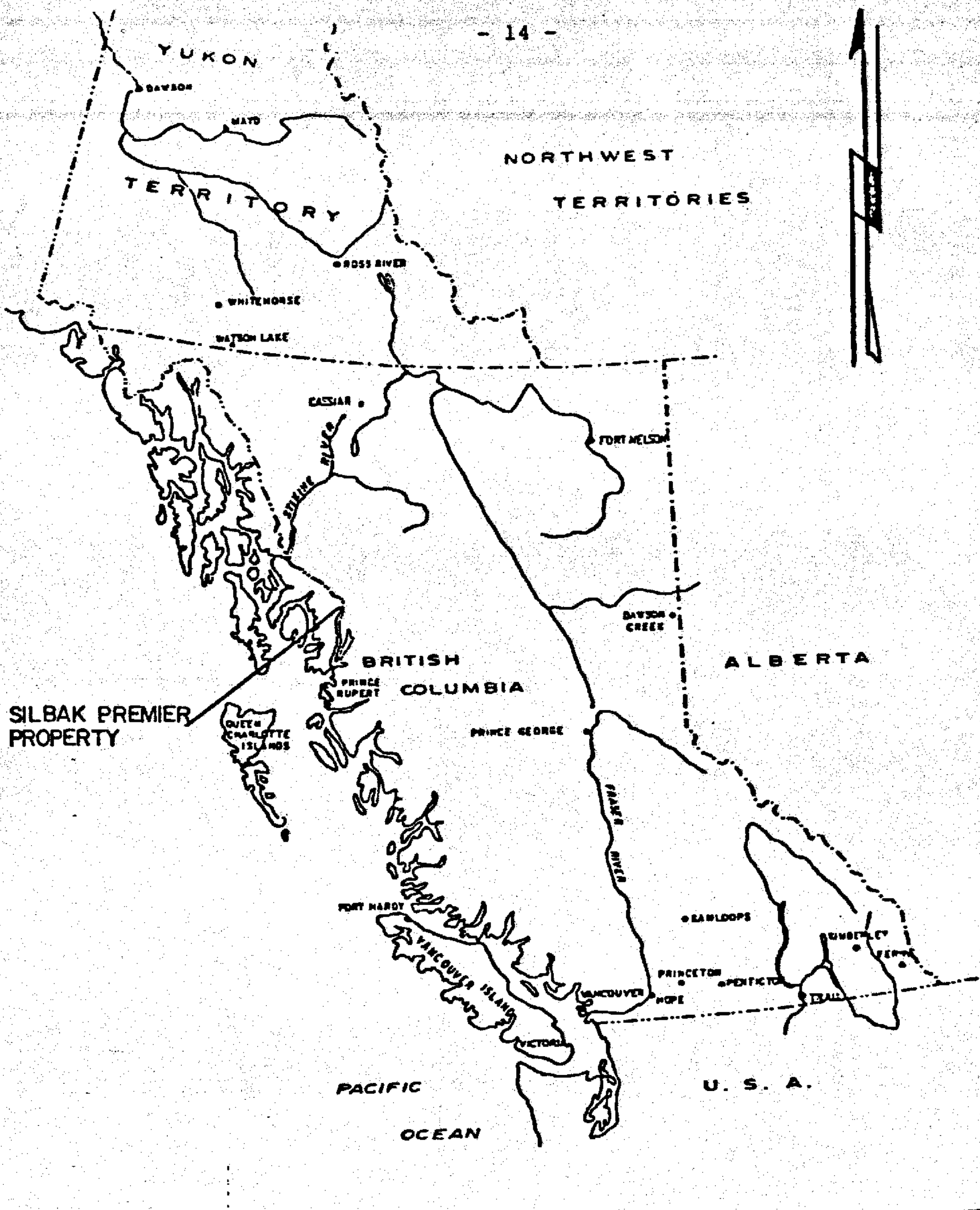
1. "Geology and Mineral Deposits of the Stewart Area, British Columbia", by Edward W. Grove; British Columbia Department of Mines and Petroleum Resources, Bulletin No. 58, 1971.

2. "Ore Potential - Silbak Premier and Premier Border Mines", by W. N. Plumb, March 25, 1957.

3. "Report on Silbak Premier Property Near Stewart, B.C., Skeena M.D.", by R. H. Seraphim, March 8, 1979.

4. Personal Communication at the property with Dianne Kretschmar.

5. Personal Communciation with J.O.C. Kerr and I. S. Parrish of Derry, Michener & Booth.

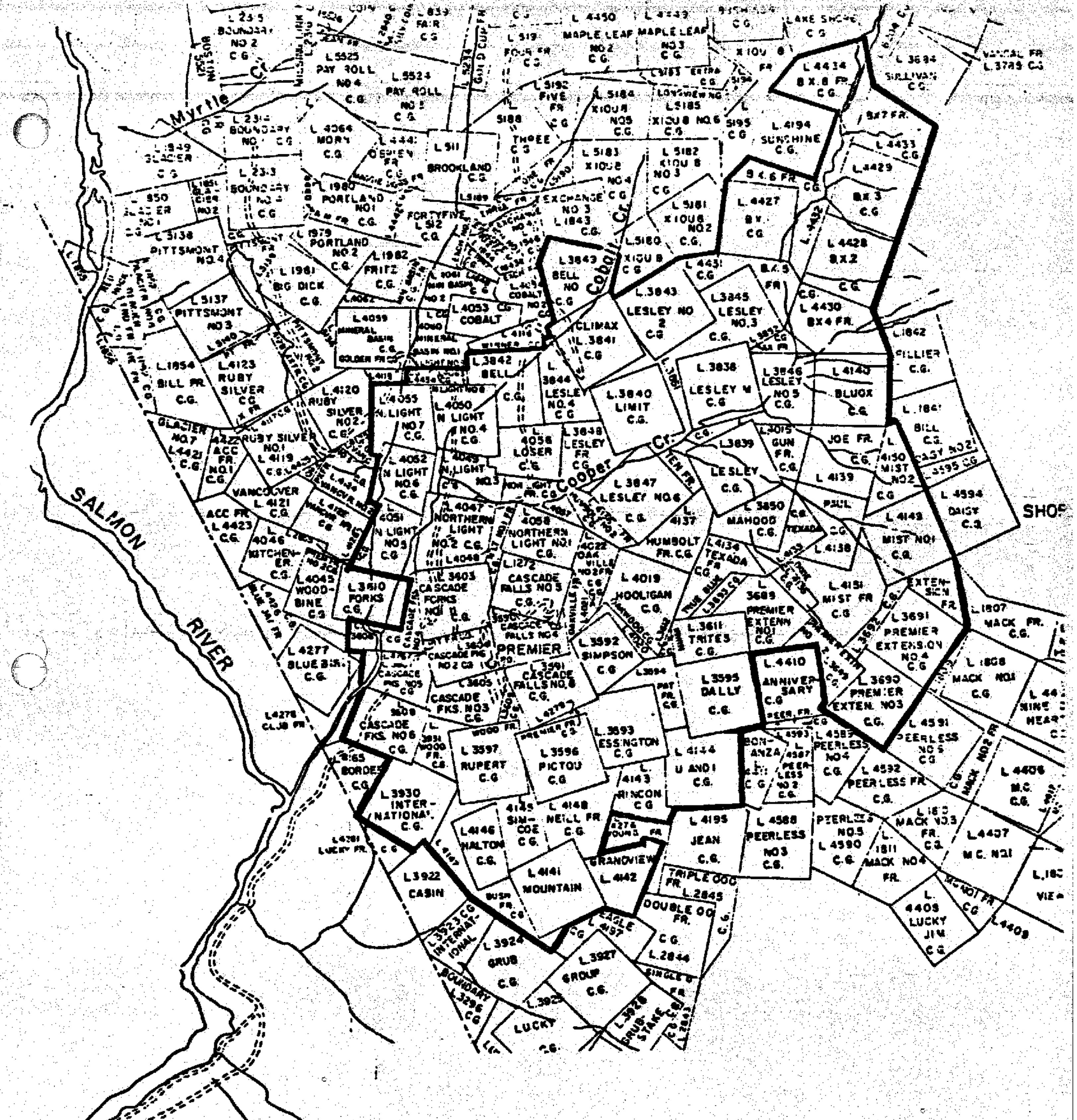


DERRY MICHENER & BOOTH

BRITISH SILBAK PREMIER MINES LTD

LOCATION MAP

SCALE 1"=12,672,000 FIG. NO. 1



DERRY MICHENER & BOOTH

BRITISH SILBAK PREMIER MINES LTD

CLAIM MAP

SCALE 1" = 2,500' FIG NO. 2

X-RAY ASSAY LABORATORIES 25-JUL-80 REPORT 7765 REF. FILE 4066-CZ PAGE 1

SAMPLE	AU OZ/TON	CU %	ZN %	AG OZ/TON	PB %
278 Tails	TRACE	--	--	1.34	--
279 "	TRACE	--	--	1.52	--

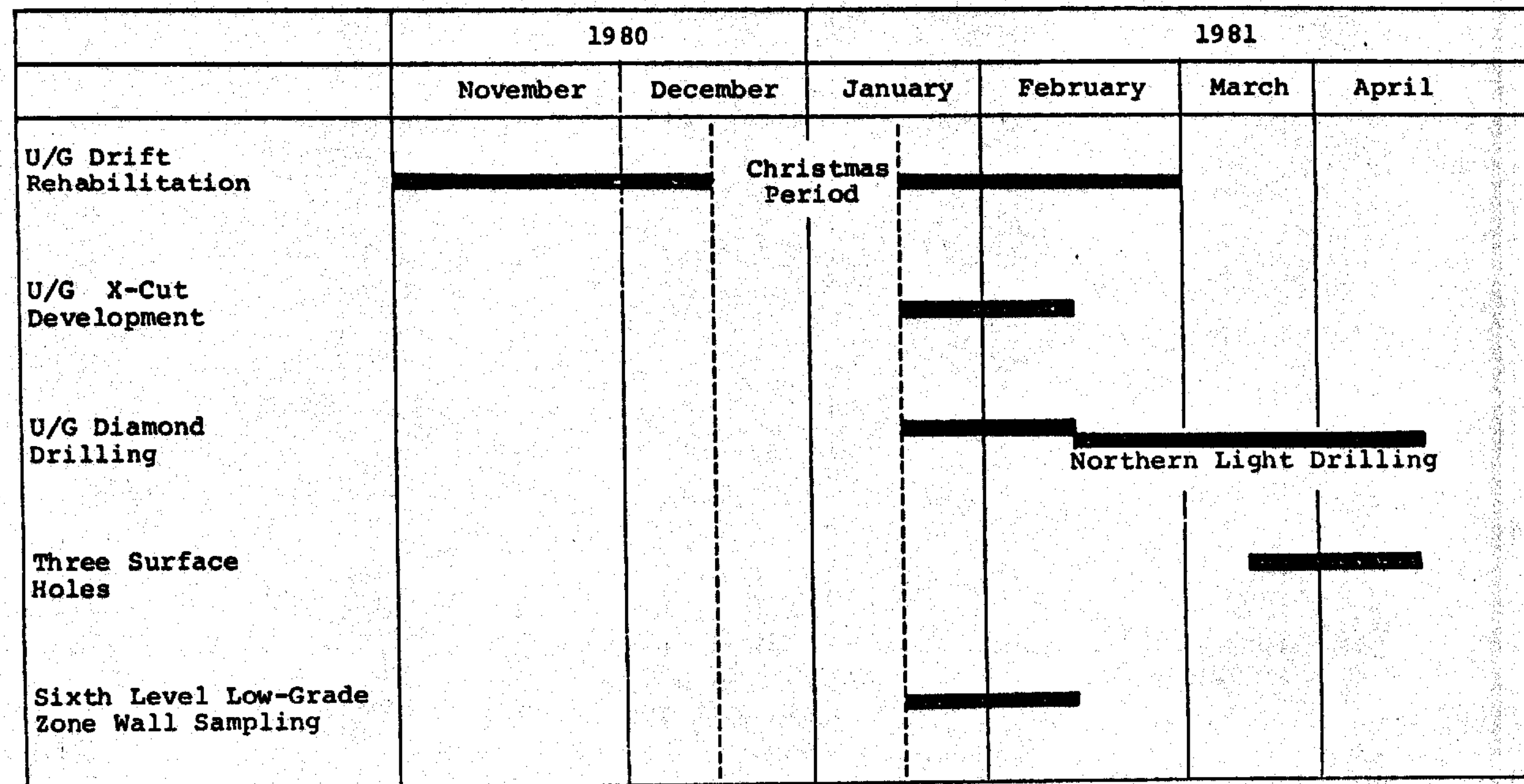
Samples provided by
Arne Bjorkman

B Eriksson

APPENDIX B

Appendix B

SCHEDULE



APPENDIX C

Appendix C

DETAIL OF BUDGET FOR WINTER PROGRAMME

Underground Rehabilitation for the Sixth Level, by Contractor

Portal to 602 Winze X-Cut (2,500 ft.)		
Scaling, ditch and track	$ 32,000	
Timbering - 3 sets	1,000	
Cleanup - 601 shaft	1,500	
Air line installation	1,600	
Sub-Total		$ 36,100
602 Winze X-Cut, include Winze (1,000 ft.)		
Scaling, ditch and track	11,000	
Hoistroom, station cleanup	5,000	
Air line installation	1,000	
Dewater shaft	7,200	
Sub-Total		$ 24,200
602 Winze X-Cut to end Northern Lights (2,300 ft.)		
Scaling, ditch (reroute water) and occasional track work	$ 18,400	
Air line installation	1,600	
6A stoping area - 16 sets	5,000	
702A-7A stoping area cleanup	3,000	
Cleanup hoist room (timber, skips)	15,000	
Northern Light, East Block to end, past winze, scaling, track, etc. (800 ft.)	6,400	
Sub-Total		$ 49,400
Northeasterly of Northern Light to end of zone drift (1,600 ft.)		
Scaling, ditch and track	$ 16,000	
Air line installation	1,600	
Sub-Total		$ 17,600
Underground Rockwork		
To drive about 300 ft. of X-Cut for drill bases	$ 45,000	
Allowance, explosives, etc.	5,000	
Sub-Total		$ 50,000
TOTAL		$177,300

Manpower Requirements for the 4-Month Programme[1]

		Man-Months
Labour		
1 Mechanic	- 4 months	4
1 Loader Operator (snow removal)	- 4 months	4
1 Electrician	- 1 month	1
1 U/G Diamond Driller	- 3 months	3
1 Cook	- 4 months	4
1 Helper	- 4 months	4
2 First-Aid (incl. time keeper)	- 4 months	8
6 Labourers	- 4 months	24
		52
Staff		
1 Manager	x 4 months	4
1 Shift Boss	x 4 months	4
1 Geologist (U/G)	x 4 months	4
1 Sampler/Surveyor	x 4 months	4
1 Geologist (surface)	x 2 months	2
1 Assayer	x 4 months	4
		22

Salaries, wages[2] - 74 man-months @ $5,000	$ 370,000
Contingency, Admin. Costs	15,000
	$ 385,000

Notes:

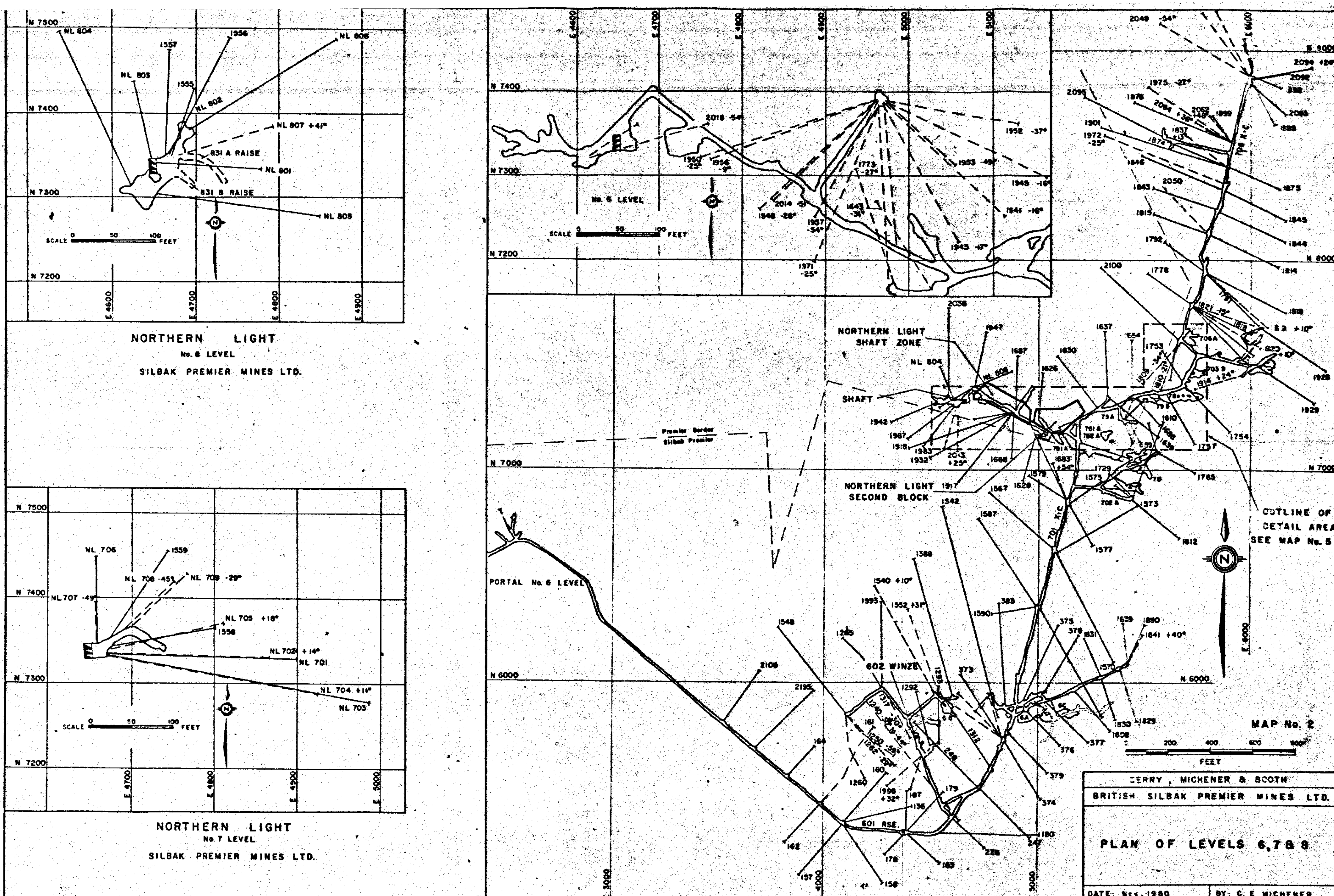
(1) - Miners, timbermen and general mine labour included with U/G contractor.

(2) - Camp running expenses at the sixth level portal are included with each monthly allowance at about $20/man-day. Fringe benefits paid by the Company are also included here.

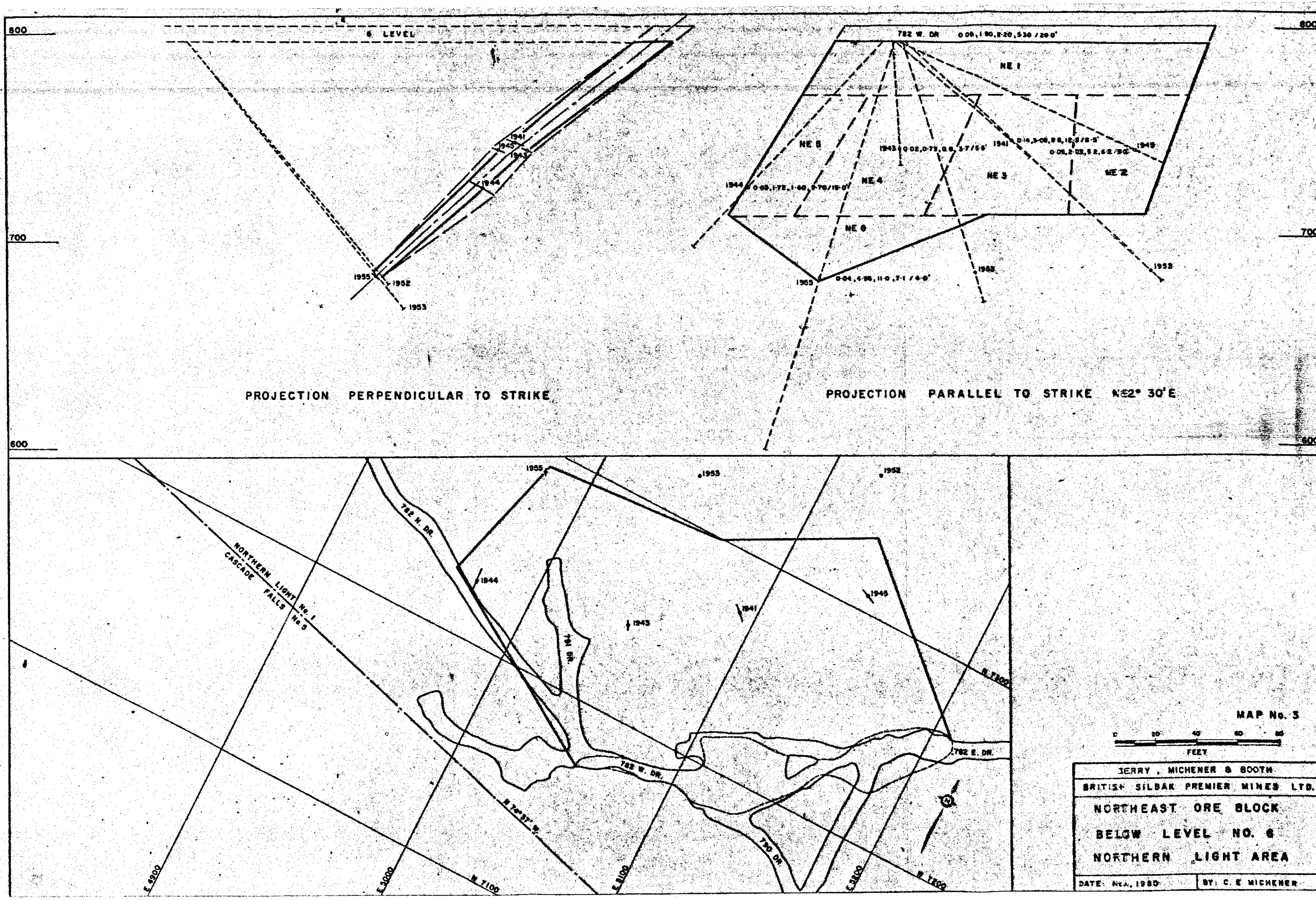
Equipment

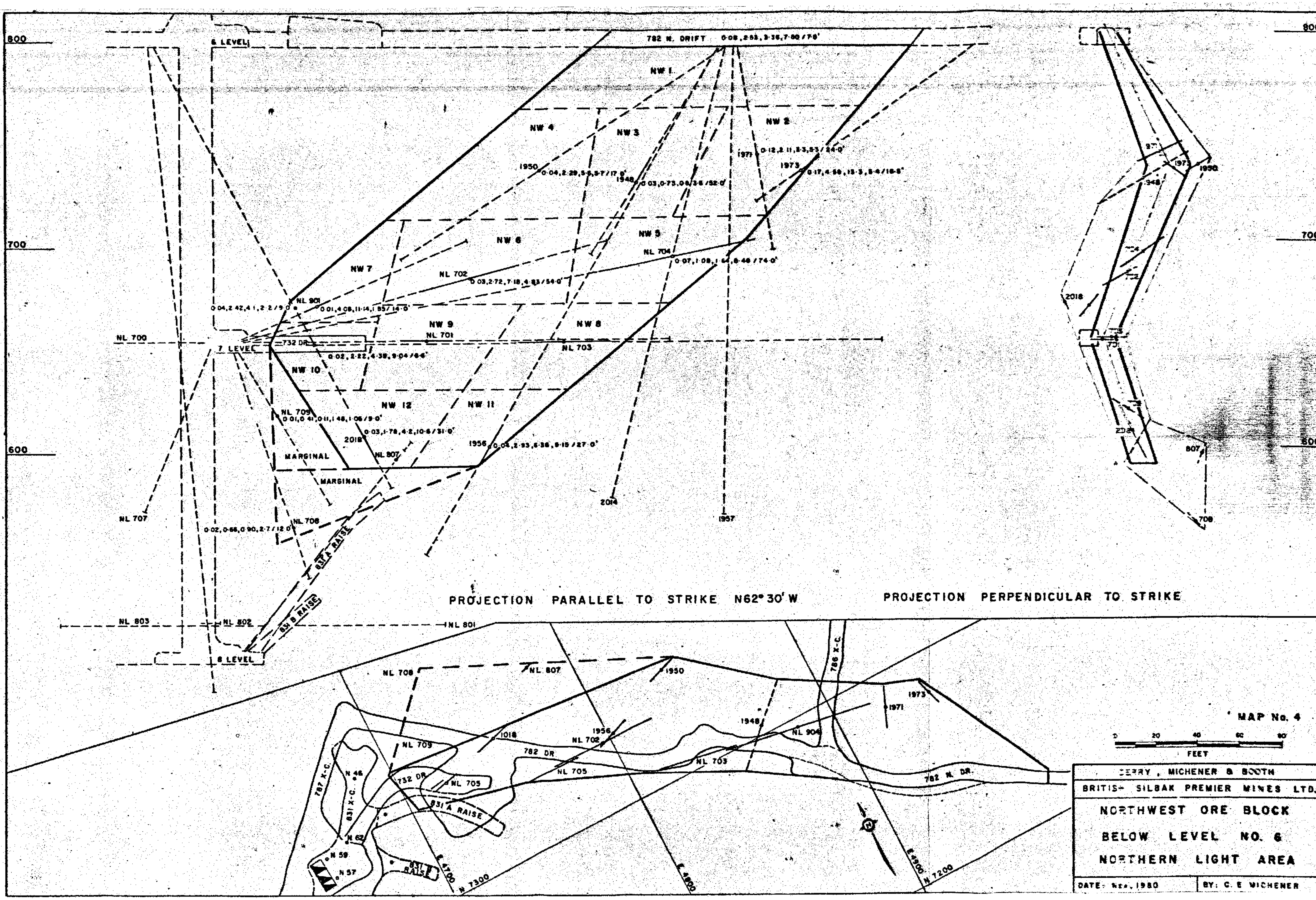
30-man trailer/dining/rec. facility	$ 220,000
Dining/camp supplies (bedding, dishes)	15,000
Generating plant, near mine portal	15,000
Storage/shop building, near mine portal (reinforced for snow loads)	70,000
Explosives magazine	10,000
Pumps and accessories	22,000
Vehicle, standby-lease	7,200
Vehicle overhaul-foreman	1,200
Locomotive for underground, batteries & charger	9,000
Drills - three jacklegs including accessories - steel, hoses	12,000
Ventilation fans and tubing	8,000
Core racks	2,000
Timber for underground	12,000
Small tools, bits, general	35,000
Diamond drill-underground, repair and overhaul	7,000
Diamond drill-underground, new	27,000
Diamond drill supplies and accessories	22,000
Underground mine cars-repair materials	5,000
Air line-underground	22,500
Rail and accessories-underground	7,500
Ladders, staging-dewatering 602 winze	3,000
Assaying facilities	40,000
TOTAL	$ 572,400

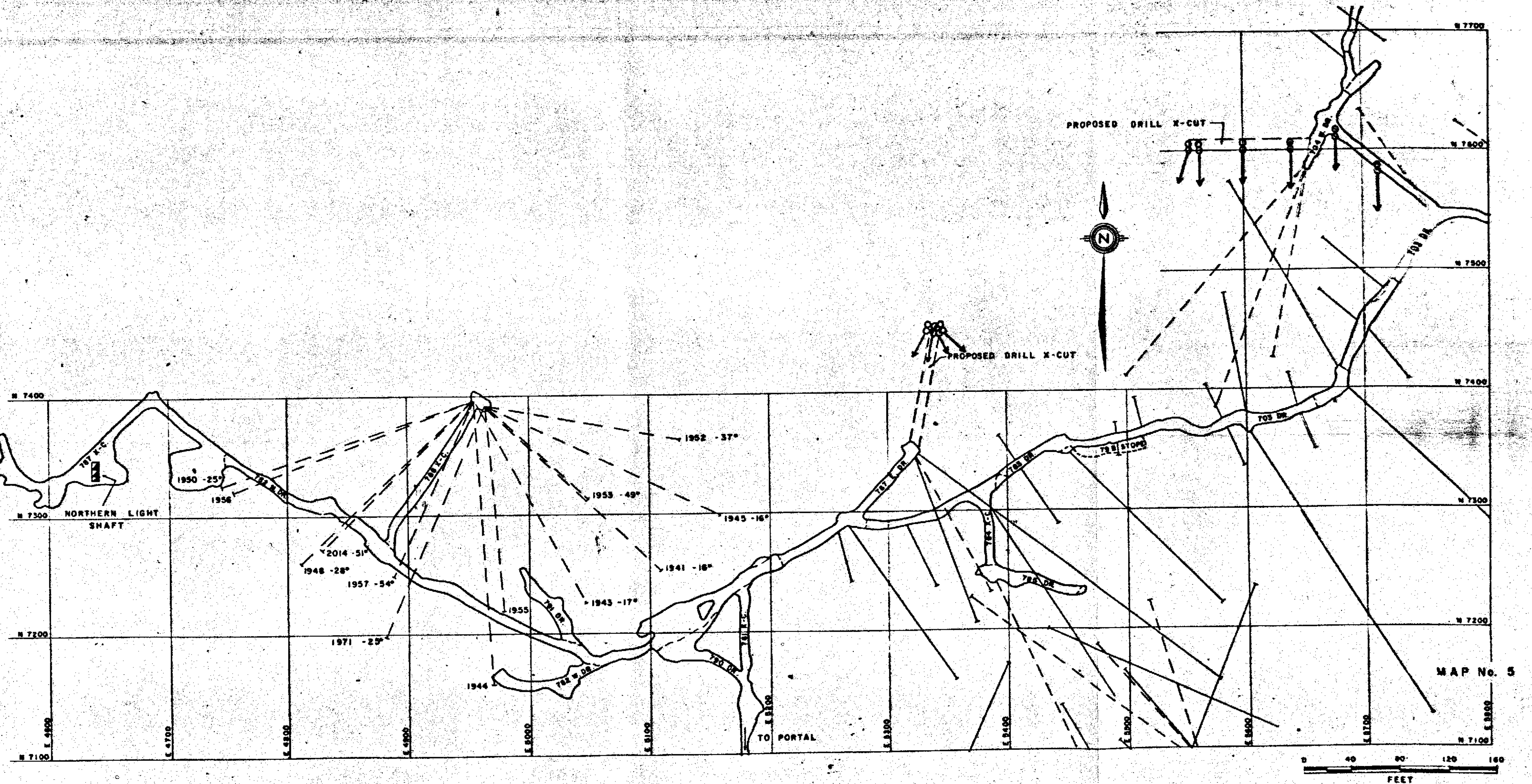
ACCOMPANYING MAPS



NORTHERN LIGHT
No. 8 LEVEL
SILBAK PREMIER MINES LTD.
NORTHERN LIGHT
No. 7 LEVEL
SILBAK PREMIER MINES LTD.
No. 6 LEVEL
NORTHERN LIGHT SHAFT ZONE
SHAFT
NORTHERN LIGHT SECOND BLOCK
PORTAL No. 6 LEVEL
602 WINZE
801 RSE.
831 A RAISE
831 B RAISE
Premier Border
Silbak Premier
OUTLINE OF DETAIL AREA SEE MAP No. 5
SCALE 0 50 100 FEET
SCALE 0 200 400 600 800 FEET
MAP No. 2
CERRY, MICHENER & BOOTH
BRITISH SILBAK PREMIER MINES LTD.
PLAN OF LEVELS 6,7 & 8
DATE: Nov., 1980
BY: C. E. MICHENER


800
6 LEVEL
700
600
1955
1952
1953
1941
1945
1943
1944
PROJECTION PERPENDICULAR TO STRIKE
782 W. DR.
NE 1
NE 2
NE 3
NE 4
NE 5
NE 6
1949
1965
PROJECTION PARALLEL TO STRIKE N52° 30'E
782 N. DR.
791 DR.
782 W. DR.
782 E. DR.
790 DR.
NORTHERN LIGHT No. 1
CASCADE FALLS No. 5
N 7200
N 7100
E 4900
E 5000
E 5100
E 5200
MAP No. 3
FEET
JERRY, MICHENER & BOOTH
BRITISH SILBAK PREMIER MINES LTD.
NORTHEAST ORE BLOCK
BELOW LEVEL NO. 6
NORTHERN LIGHT AREA
DATE: Nov., 1950
BY: C. E. MICHENER


800
700
600
6 LEVEL
782 N. DRIFT
NW 1
NW 2
NW 3
NW 4
NW 5
NW 6
NW 7
NW 8
NW 9
NW 10
NW 11
NW 12
1950
1948
1971
1973
NL 704
NL 702
NL 901
NL 700
7 LEVEL
732 DR
NL 701
NL 703
NL 709
2018
NL 807
1956
MARGINAL
MARGINAL
NL 706
NL 707
2014
1957
831 A RAISE
831 B RAISE
NL 803
NL 802
NL 801
8 LEVEL
708
807
PROJECTION PARALLEL TO STRIKE N62° 30' W
PROJECTION PERPENDICULAR TO STRIKE
NL 708
NL 807
786 X-C
NL 904
NL 709
782 DR
NL 705
NL 703
782 N. DR.
787 X-C
831 X-C
N 46
N 62
N 59
N 57
732 DR
831 A RAISE
831 B RAISE
E 4700
E 4800
E 4900
N 7300
N 7200
MAP No. 4
FEET
DERRY, MICHENER & BOOTH
BRITISH SILBAK PREMIER MINES LTD.
NORTHWEST ORE BLOCK
BELOW LEVEL NO. 6
NORTHERN LIGHT AREA
DATE: Nov., 1980
BY: C. E. MICHENER

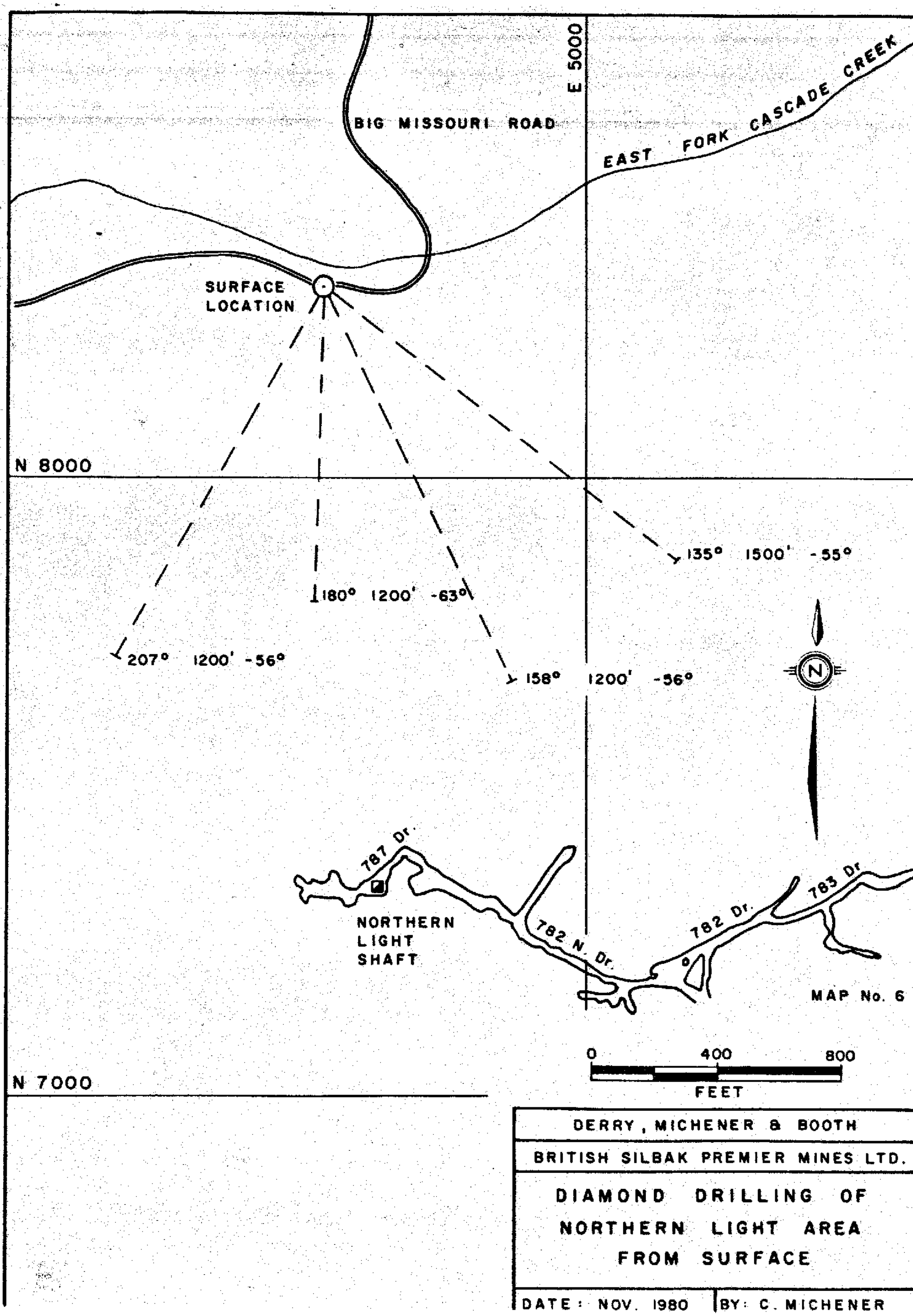


:ERRY, MICHENER & BOOTH

BRITISH SILBAK PREMIER MINES LTD.

SIXTH LEVEL EXPLORATION
NORTHERN LIGHT SHAFT AREA

DATE: Nov., 1980 | BY: C.E. MICHENER


E 5000
BIG MISSOURI ROAD
EAST FORK CASCADE CREEK
SURFACE
LOCATION
N 8000
135° 1500' -55°
180° 1200' -63°
207° 1200' -56°
158° 1200' -56°
N
787 Dr.
NORTHERN
LIGHT
SHAFT
782 N. Dr.
782 Dr.
783 Dr.
MAP No. 6
0
400
800
FEET
N 7000
DERRY, MICHENER & BOOTH
BRITISH SILBAK PREMIER MINES LTD.
DIAMOND DRILLING OF
NORTHERN LIGHT AREA
FROM SURFACE
DATE: NOV. 1980
BY: C. MICHENER

PROGRESS REPORT ON

BRITISH SILBAK PREMIER MINES LTD.

STEWART, B.C.

C. E. Michener, Ph.D., P.Eng.

Toronto, Ontario
May 26, 1981

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LIST OF MAPS

SUMMARY

Rehabilitation of the surface and 6th level workings over the past year was designed to provide facilities for surface exploration of the property and underground drillings of certain known ore zones. The surface work has turned up several promising areas which will be drilled off this summer. The underground rehabilitation - the 6th level - has only just reached the Northern Light area which was the original objective. This involved cleaning up more than 5,000' of drift. Extensive drilling is planned for the Northern Light ore zone.

The budget has been revised in order to provide sufficient funds to complete the programme outlined in the December 5th report.

Capital equipment purchased by the company which was unrelated to the recommended programme has not been included in the budget account.

INTRODUCTION

This is a progress report, following a recent visit to the property, designed to update a previous report of December 5, 1980. In the latter, a comprehensive exploration programme for the underground exploration of the British Silbak Premier Mines was presented, together with a budget. When the December 5th budget was presented, rehabilitation of the mine had been in progress for several months, consisting chiefly of surface work and repair of roads. This work was carried out, based on a report and budget of Phendler, February 1980.

SURFACE DRILLING

Five diamond drill holes with a total of 6,322' were drilled from surface to check for the depth extension of the Northern Light ore zone. These holes indicated that the structure flattens with depth. All five drill holes cut the mineralized silicified breccia zone at an elevation of about 480'.

Assays have not been received for most of the surface drilling. However, in bore hole 81-22, there was reported 0.011 oz. of gold and 0.045 oz. of silver, 0.5% lead and .20% zinc over 11.8'; and bore hole 80-24 showed traces of gold and traces of silver over 44'. In an upper zone, diamond drill 81-22 obtained an intersection averaging 11.56 oz. of silver over 23.6' of core length. Please refer to plan of surface drilling.

REHABILITATION AND UNDERGROUND DRILLING

The rehabilitation of the 6th level was started in the fall as part of the winter programme. The work was contracted out to a group of local miners who started at the 6th level portal and advanced to the 602 Winze area and, at the time of writing this report, had reached the Northern Lights area. Over 5,000' of scaling, timbering, ditching and track repair was completed, and the rotten timber and scrap were removed from the workings. A 3" air line was laid and two air receivers were installed. A small battery locomotive was used in conjunction with the mucking machine and two one-ton cars for removal of muck and old timber. This work also involved relaying the track and placing new ties under the track. It was found that the original track in the first part of the adit was only 17 pound rail and badly rusted. This will probably have to be replaced. Because of the long haulage distance, another battery locomotive is required.

In March, work began on the 602 Winze area to cut diamond drill stations. Drilling is currently proceeding here as follows:

Recently completed diamond drill hole 81-27 U intersected a silicified breccia zone with pyrite mineralization over a distance of 26.5'; and drill hole 81-28, a flatter hole on the same section, intersected the same pyrite silicified zone 36.5' in width. The best section in these two holes ran 0.21 oz. of gold and a trace of silver over 5.0' with an additional 27.5' running .10 oz. of gold in the same hole. It is planned to use the underground drill in this location to explore the 602 area while waiting for access to the Northern Lights area.

ANALYSIS OF EXPENDITURE

Referring to the DMB budget, page 12 of the December 5th report, there was an allocation of $177,300 which, added to the salaries, came to a sub-total of $385,000. There was also a large item for equipment with a total of $572,400. There was an allotment of $310,000 for underground diamond drilling and sampling of the No. 6 adit walls, making a sub-total, without contingencies, of $1,444,700. A 5% contingency brings the total to $1,520,000.

According to a list provided by British Silbak Premier Mines at March 31, 1981, copy of which is attached, a total expenditure of $994,939 had been made on equipment.

BRITISH SILBAK PREMIER MINES LTD.

EQUIPMENT - ACTUAL EXPENDITURES
March 31, 1981

	Actual Expenditure
Trailer	$ 234,026
Trailer supplies	11,693
Generating plant	11,042
Shop building	110,901
Explosives magazine	-
Pumps and accessories	-
Vehicle, stand-by lease	7,200
Vehicle overhaul	1,200
Locomotives and batteries	3,912
Three jackleg drills	16,389
Ventilation fan and tubing	2,172
Core racks	1,490
Timber	4,288
Tools and bits	25,509
Underground diamond drill, new	-
Underground diamond drill, supplies	50,997
Underground mine cars	-
Air line	26,942
Rail	6,755
Ladders	-
Assaying facilities	3,294
Freight	20,602
Insurance	9,645
Repair	17,437
Sub-total:	$ 565,494
Compressor, lease purchase	45,000
Front end loader, lease purchase	98,498
Haulage truck, lease purchase	39,345
TOTAL:	$ 748,337
Contingencies:	
Air trac drill	51,337
Surface diamond drill & accessories	99,324
Tent camps & accessories	10,923
Electrical equipment	22,667
Mucking machine	13,000
Communication equipment	6,411
Compressor	42,940
Total contingent equipment:	$ 246,602
TOTAL EXPENDITURE ON EQUIPMENT:	$ 994,939

This compares with a budget estimate of $572,400, an overrun of $422,539. Many of the items in this list of equipment are major capital items, which should be capitalized in the company accounts, such as trailer camp, generating plant, shop buildings, surface drills, compressor. If these items were capitalized, the expenditure on equipment would fall well within the original budget of $572,400.

It was found that the underground rehabilitation of the 6th level was much more difficult than had been anticipated. Practically all the old timber had to be removed and the ties replaced under the track. The drainage ditches had to be completely dug out and this involved a much more time-consuming job than anticipated. At the present time, the rehabilitation work has reached the northern lights area but no drilling has been done there as yet.

There are certain additional items which will be required to carry out an efficient exploration operation. For example, it is very difficult to get assays done in Vancouver or any other Canadian Centre at the present time, and it was therefore decided to build an assay laboratory at the property. Radio communication is almost an essential part of the operation, a new locomotive is required for underground haulage and some additional mine cars; and it has finally been determined that the very light 17 pound rail in the original part of the No. 6 adit had deteriorated so badly that it would not stand up and it must be replaced. This item alone will be at a cost of about $40,000 and will take considerable time.

It was therefore felt that the budget should be reworked, major capital items should be capitalized, and a new working budget proposed which would provide for the completion of the rehabilitation of No. 6 level and the diamond drilling of the Northern Lights area, which was the objective in the beginning. In addition, there was some additional underground drilling proposed at the 602 and 601 locations and there had been two additional surface holes completed. These items should be added to the budget as well.

PROPOSED BUDGET REVISION

It is now proposed to present a new budget for the continuation of work at the British Silbak Premier Mines, in particular to reach the objective of the Northern Lights area where the major drilling programme was originally outlined.

BUDGET

Underground rehabilitation - 6th level	$ 15,000
602 Winze - 6th level	24,000
620 Winze - to the end of Northern Lights	49,400
N.E. of Northern Lights area	17,600
Cross-cuts for drill set up on the Northern Lights area	50,000
Sub-total	$ 156,000
Salaries	300,000
Administration	15,000
	$ 315,000
Equipment Total	$ 400,000
Sub-total:	$ 871,000
4 bore holes from surface (see map 3600' already completed	$
602 Winze area - 6 bore holes at 250' (add 4 bore holes)	40,000
Northern Lights area - 20 bore holes at 500'	200,000
Check the low grade silver values on the added wall - 6th level	10,000
Total:	$1,121,000
Contingency:	79,000
GRAND TOTAL:	$1,200,000

CERTIFICATE OF QUALIFICATION

I, Charles E. Michener, of Suite 2302 - 401 Bay St., Toronto, Ontario, a Consulting Geologist and a Partner of the firm of Derry, Michener & Booth, certify that:-

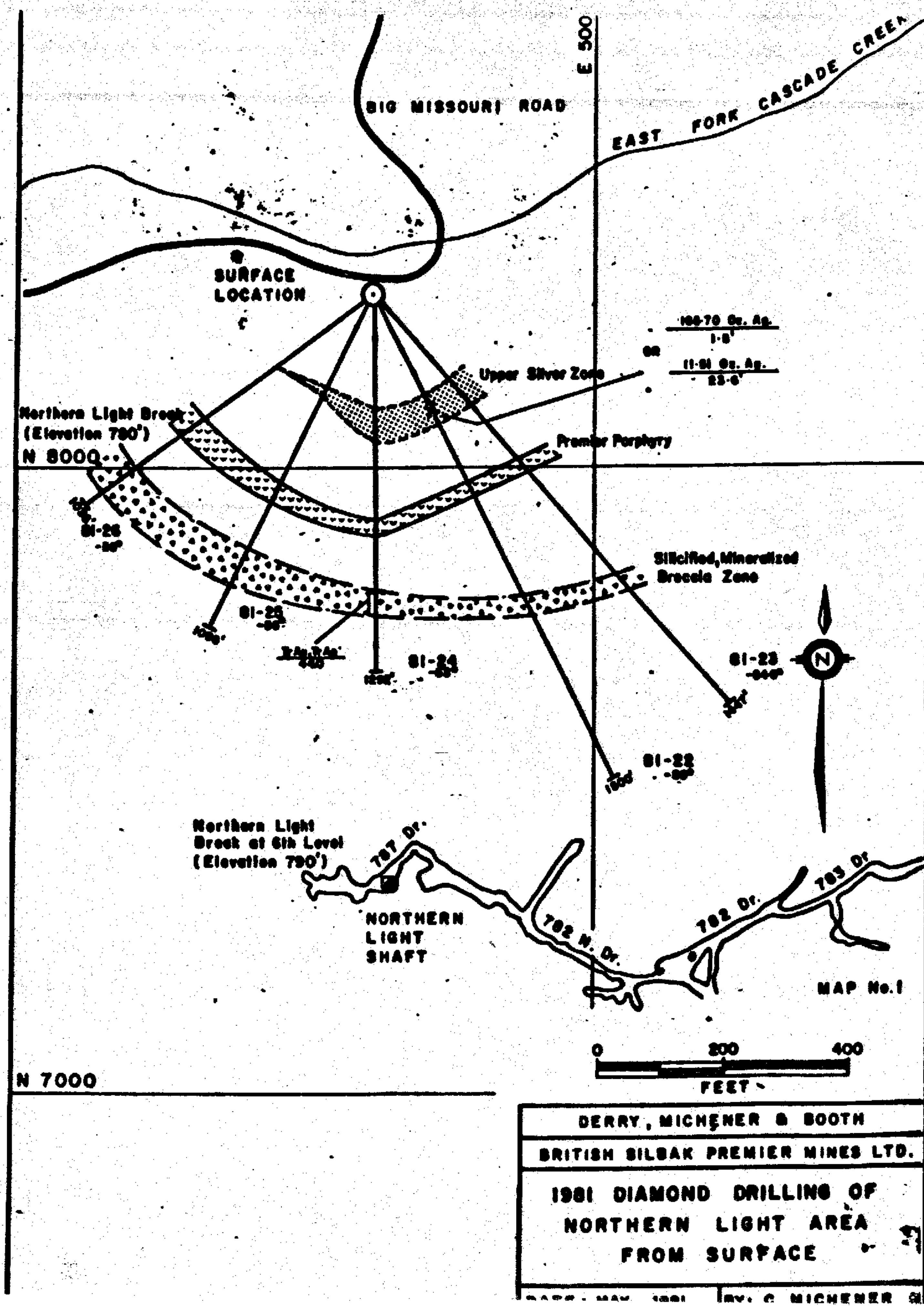
(1) I am a professional geologist and a practising Professional Engineer in the Province of Ontario.

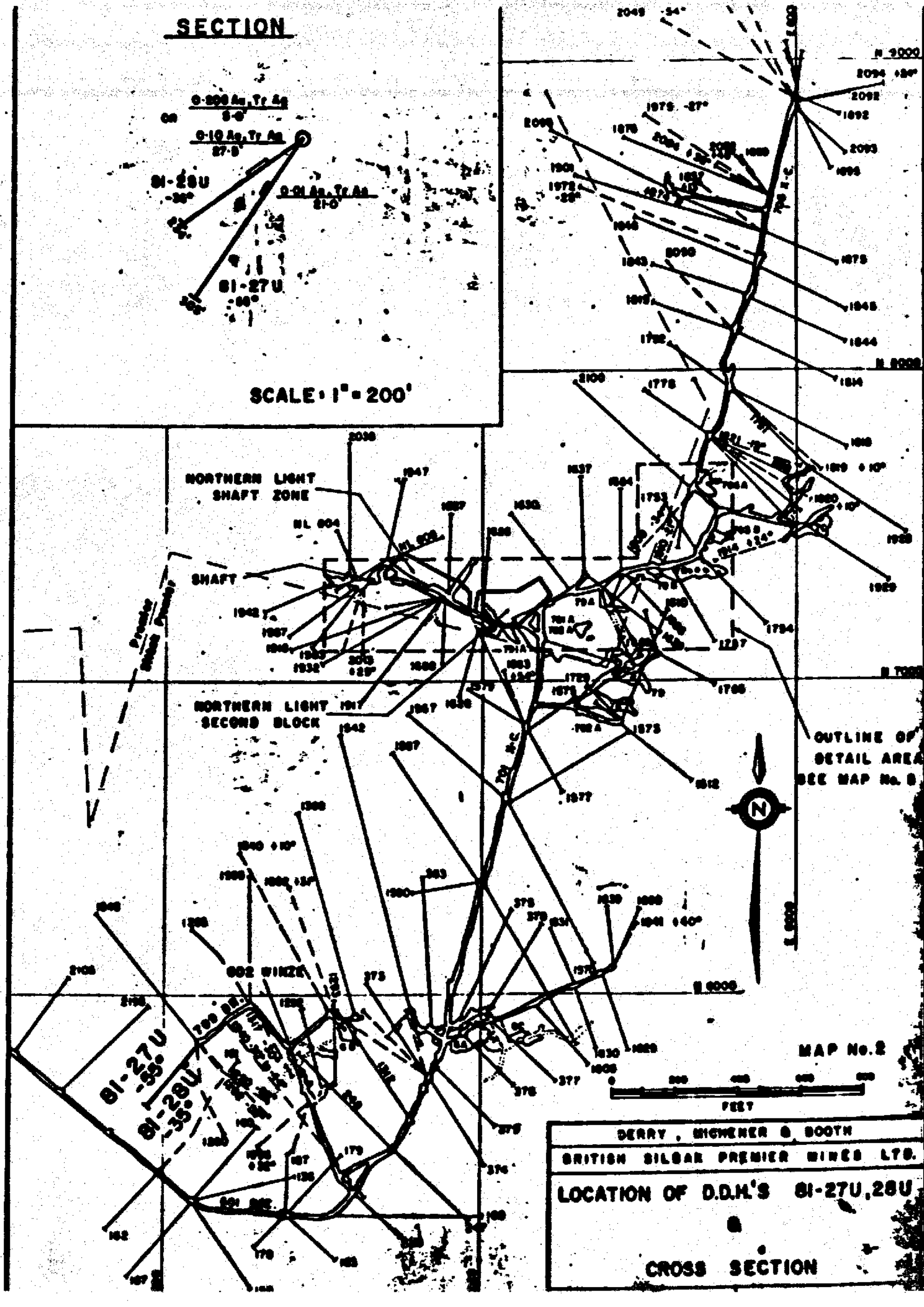
(2) The report contained herein is based upon my visit to the property and discussions with management, May 13 and 14, 1981.

(3) I have no interest, directly or indirectly, nor do I expect to receive any such interest, directly or indirectly, in the property of the company or any affiliate; nor do I beneficially own, directly or indirectly, any securities of the company or any affiliates of said company.

C. E. Michener, B.A., M.S., Ph.D., P.Eng.

Toronto, Ontario
May 26, 1981


BIG MISSOURI ROAD
EAST FORK CASCADE CREEK
E 500
SURFACE LOCATION
Upper Silver Zone
108.70 Oz. Ag. / 1.8'
OR
11.61 Oz. Ag. / 23.6'
Northern Light Break (Elevation 790')
N 8000
Premier Porphyry
Silicified, Mineralized Breccia Zone
81-26
81-25
81-24
81-23
81-22
Northern Light Break at 6th Level (Elevation 790')
787 Dr.
NORTHERN LIGHT SHAFT
782 N. Dr.
782 Dr.
783 Dr.
MAP No. 1
0 200 400
FEET
N 7000
DERRY, MICHENER & BOOTH
BRITISH SILBAK PREMIER MINES LTD.
1981 DIAMOND DRILLING OF NORTHERN LIGHT AREA FROM SURFACE
DATE: MAY 1981
BY: C. MICHENER



SECTION
81-28U
-30°
81-27U
-55°
SCALE: 1" = 200'
N 9000
N 8000
N 7000
N 6000
NORTHERN LIGHT
SHAFT ZONE
SHAFT
NORTHERN LIGHT
SECOND BLOCK
602 WINZE
OUTLINE OF
DETAIL AREA
SEE MAP No. 8
81-27U
-55°
81-28U
-35°
MAP No. 2
FEET
DERRY, MICHENER & BOOTH
BRITISH SILBAK PREMIER MINES LTD.
LOCATION OF D.D.H.'S 81-27U, 28U
&
CROSS SECTION

REPORT OF EXAMINATION

SILBAK PREMIER PROPERTY

STEWART, B.C.

For

CANADIAN SUPERIOR EXPLORATION LIMITED

VANCOUVER, B.C.

September, 1981

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INTRODUCTION

At the request of Mr. R.A. Dujardin, General Manager, Canadian Superior Exploration Limited, the Silbak Premier gold-silver property near Stewart, B.C. was visited by E.S. Holt of Holt Engineering Ltd. during the period August 31 to September 4, 1981.

Surface exposures in the vicinity of the main underground workings were examined, portions of the diamond drill core were studied and the old mine workings on the number six level were visited. Sufficient time was spent to obtain some personal knowledge of the geological and topographical environment and to acquire an understanding of the known metal distrubution and the type of mining involved.

Past production has generated a substantial volume of engineering data which has, to some extent, been summarized in a number of reports prepared on the property. The summary and conclusions set forth in this report are based on: an analysis of the geological and engineering reports provided to us, a cursory review of the engineering data available at the site and the examination of surface exposures, underground workings and diamond drill core mentioned above.

SUMMARY AND CONCLUSIONS

During the period 1918 to 1968 production from the Silbak Premier property amounted to more than 4,700,000 tons of ore grading 0.39 ounces of gold and 8.72 ounces of silver per ton, together with variable but significant amounts of lead, zinc, copper and cadmium. The property has been developed by more than 46 miles of underground workings covering a vertical range of 1,800 feet.

Exploration work has included more than 500,000 feet of diamond drilling in 2154 holes. Pertinent conclusions relating to the exploration potential of the Silbak Premier property are summarized herewith:

1. The property owned by British Silbak Premier Mines Ltd. is comprised of 87 crown-granted mineral claims covering 4.6 square miles of land in a district known to contain numerous precious metal concentrations.
2. The most prolific Au-Ag deposit encountered to date as well as a number of other mineral occurrences have been discovered and exploited on the Silbak Premier property.
3. The deposits occurred within metamorphosed Hazelton rocks near the eastern flank of the Texas Creek granodiorite as do most of the precious metal deposits of the region.
4. The genesis of the deposits is a poorly understood and highly speculative field of study. While most authors refer to them as replacement type or breccia-zone filling, some widely divergent hypotheses have been proposed. Structural controls appear to have had a major influence on the ore concentration at the Premier property.

5. Currently outlined reserves, including broken ore, have been estimated at:

Tons	Oz.Au	Oz.Ag	%Pb	%Zn
149,396	0.18	2.39	3.0	4.5

Modest additions of lower grade material have been assured by this year's underground drilling program.

6. This preliminary study of previous exploration work, combined with results of this year's underground drilling program, leads to the conclusion that the known ore zones have been essentially exhausted and the remaining remnants are widely scattered, marginal in grade and expensive to exploit. Based on current economic conditions, they do not represent an attractive exploration target.

7. The potential of the property lies in the possibility of locating an, as yet undiscovered, repetition of the original high-grade deposit. This will require a complete geologic reappraisal and a fresh look at the apparent ore controls.

8. The geologic work will be time consuming and any targets developed will, in all probability, be expensive to explore. The area in the vicinity of the underground workings has been extensively drilled, as have all of the obvious surface targets. You will therefore be seeking a concealed deposit which has eluded all previous operators despite concerted exploration efforts.

   The awesome nature of the exploration task is tempered considerably by the fact that substantial geologic and operating data is available; the property is a proven host for precious metal concentrations and the potential reward for locating a similar deposit is substantial ($21 million in dividends were paid during the period 1921 to 1947 while mining the original high-grade ore).

9. A minimum one year period will probably be necessary to carry out a meaningful geologic study, which may or may not lead to worthwhile drilling targets. The cost of the study would be in the order of $120,000.

10. If the geologic study can be carried out without the burden of an excessive work commitment or prohibitive option payments, then it

should be considered a sound exploration venture. Justification for the second phase drilling program will depend on the merit of any targets developed. A commitment at this time for expenditures beyond the geological study must be regarded as speculative and should, if possible, be avoided.

Respectfully submitted,
HOLT ENGINEERING LTD.

Edward S. Holt

GENERAL DESCRIPTIONS

The Silbak Premier property is located in the Salmon River Valley, 15 miles by road from the town of Stewart. The access road serves the Granduc mine and is a well maintained gravel road.

The communities of Stewart, British Columbia and adjacent Hyder, Alaska are currently served by regular scheduled daily air service from Prince Rupert. They can also be reached by road or ocean going vessels. Stewart has a population of approximately 1500 people and is the only service centre in the region. It is located at the head of the Portland Canal, one of the larger fjiords which pierce the Coast Range.

The property consists of 87 crown-granted mineral claims covering 4.6 square miles of land, with an elevation range from 600 to 4500 feet. The main topographic features of the area are: the Salmon River drainage basin extending northward from the head of Portland Canal, the Bear River Ridge paralleling it on the east and the massive Coast Range Mountains to the west.

The local area is precipitous and covered by coniferous forest or dense slide alder. Rock exposures are essentially limited to streams, steep ridges and road cuts or other man-made disturbance of the overburden.

The snow free season is from May to late September. Although temperatures are not severe, snowfall can be both heavy and persistent. The average annual snowfall at Stewart is 16.4 feet while the average mean temperature is 42° F.

HISTORY AND PAST PRODUCTION

The silbak Premier property represents the consolidation of the former Premier, B.C. Silver, Sebakwe and Premier Border claim groups and is currently controlled by British Silbak Premier Mines of Vancouver.

The history of the property is described by E. W. Grove (Bulletin #58,1971) as follows:

The Cascade Falls No. 4 (Lot 3590) and Cascade Falls No.8 (Lot 3591) claims, now known to cover the principal orebodies, were part of an eight-claim group discovered and staked by William Dillworth and the Bunting brothers in June, 1910. They were probably attracted by an oxidized capping which still forms a bare ridge west of the main glory-hole. Claims Cascade Nos.4 and 8 along with an adjoining group were taken over by O.B.Bush, who organized the Salmon-Bear River Mining Co. in 1910/1911 to develop them. During the next two seasons, short tunnels (Nos.1 and 2) and surface cuts were put in on low-grade showings, but nothing was done on adjacent quartz-pyrite-native silver mineralization. In 1914, surface work directed by W.J. Rolfe traced the silver showing 800 feet downhill to the west and discovered good grades in gold and silver along this length. Possibly as a result of the 1914 war, work was discontinued until H.R. Plate, representing a New York syndicate, commenced work on Nos.1,2 and 4 tunnels. In 1918, R.K.Neill, of Spokane, bonded the property from Pat Daly and commenced work on the No.1 tunnel, where Plate had stopped in apparently barren quartz. Within a few rounds Neill exposed ore which showed native silver and ruby silver, and high grade ore was then shipped to Tacoma.

In the fall of 1919 the American Smelting and Refining Company acquired a 52- percent interest in the property from Neill and his associates, R.W. Wood, A.B.Trites and W.R.Wilson, of Fernie, for one million dollars cash. Crude ore shipped during 1919 and 1920 from Premier averaged 4.24 ounces gold and 141 ounces of silver per ton, and milling began in 1921 at 200 tons per day. This was increased in 1926 to 400 tons and an average 430 tons per day was actually handled.

B.C. Silver Mines Ltd., which held two claim groups adjoining the Premier, was incorporated in 1919, began exploration in 1922, and after considerable exploration, in 1925 intersected ore 1,500 feet east of the Premier ore zone in the 3 level area. Sebakwe and District Mines Ltd., which gained control of the adjacent Bush property in 1926, started a tunnel from the east fork of Cascade Creek (now Cooper Creek) and intersected the mineralized zone at about 1,050 feet. Independent operation of the various mining companies and syndicates continued on the zone until 1936, when the Premier Gold Mining Co. Ltd., B.C. Silver Mines Ltd., and Sebakwe and District Mines Ltd. were consolidated to form Silbak Premier Mines Limited. The latter two groups were controlled by Selukwe Mining Company of London, which, upon merger, received a substantial interest in Silbak Premier Mines.

After many years of continuous profitable operation, low base-metal prices forced Silbak Premier to close in 1953. Development work was resumed in 1955 under the direction of Henry L. Hill and Associates and in 1956 the property was rehabilitated, but fire destroyed the mill and surface buildings at the No.4 level portal after only a few months' operation. At this time, underground work was concentrated on the 790,940 and 1060 levels. Low metal prices in 1957 again forced closure of the property except for geological studies.

In 1959, Silbak Premier granted a one-year lease on the upper levels of the mine to Bermah Mines Ltd. The lessees mined the upper part of a small high-grade ore lens found on the south side of the abandoned glory-hole. This oreshoot was discovered after waste rock had sloughed from the pit wall and exposed silver-gold mineralization. At the termination of the one-year lease, Silbak Premier commenced mining the lower part of the high-grade sulphide lens during parts of 1960,1961 and 1962. Production from this one lens amounted to roughly 2,736 tons *of ore containing 18,595 ounces of gold, 394,933 ounces of silver, 16,258 pounds of copper, 215,999 pounds of lead and 322,118 pounds of zinc. Stimulated by this plum of bonanza ore, the company reviewed the potential of the property, but work at the mine was severely hampered when November, 1961, the Salmon River section of the Stewart-Premier road was washed out by overflow of water from Summit Lake. The washed-out section of the road, entirely within Alaska, was largely rebuilt by Silbak Premier.*

In 1963 work was initiated on a loading-trestle-and ore-bin at the open pit and on the excavation of a mill-site at No.6 level portal. A new camp was also erected at No.6 level. Loading facilities at the open pit were completed and a new 75-ton mill and cyanide plant constructed and put into operation in 1964 to handle broken ore from the open pit.

In 1965, Bralorne Pioneer Mines Limited undertook a management agreement with Silbak Premier for the operation of the mine.

During construction, mineralization was exposed along the new Granduc road north of the No.6 portal, consisting of massive, crudely banded pyrite and sphalerite with interstitial galena and scattered microscopic tetrahedrite. The mineralization, which was not completely outlined, appears to consist of a 10 to 12 foot-wide, north-trending, steeply plunging lens confined to schistose volcanic breccia which lies as a small pendant within intrusive hornblende potash feldspar porphyry.

Bralorne Pioneer Mines Limited continued management of the property until November, 1967, and since then the property has been idle. In December 1969, a new five-year option was signed with The Granby Mining Company Limited.

During the period from 1918 to 1953 when continuous operations ceased, Premier Gold Mining Co. Ltd., B.C. Silver Mines Ltd., and the successor company, Silbak Premier Mines Limited, as well as the Premier Border group purchased in 1958, produced about 4,700,000 tons of ore from the deposit with gross earnings about $30,000,000. Of this, approximately $22,000,000 was paid out in dividends. Since 1953, the Silbak Premier Mines Limited glory-hole has produced another 26,000 tons of good ore.

A breakdown of the annual production statistics is provided by the table on the following page. A history of diminishing precious metal grades will be noted. The only exception was the discovery and subsequent mining of the high-grade lens in the footwall of the glory-hole during the period 1959 to 1968. This one lens produced 32,971 ounces of gold and 696,705 ounces of silver in 28,671 tons of ore, and has been the inspiration for most of the exploration work since that time.

During the past two field seasons, British Silbak Premier Mines have carried out fairly extensive exploration and drilling programs in a search for additional high grade ore. Their drill hole locations are shown on the plans in the packet. The results of their efforts to date have to be considered disappointing, in that high grade intersections have not been encountered and their more recent work has been directed toward extending the known marginal grade reserves.

PRODUCTION RECORD

Premier and Silbak Premier

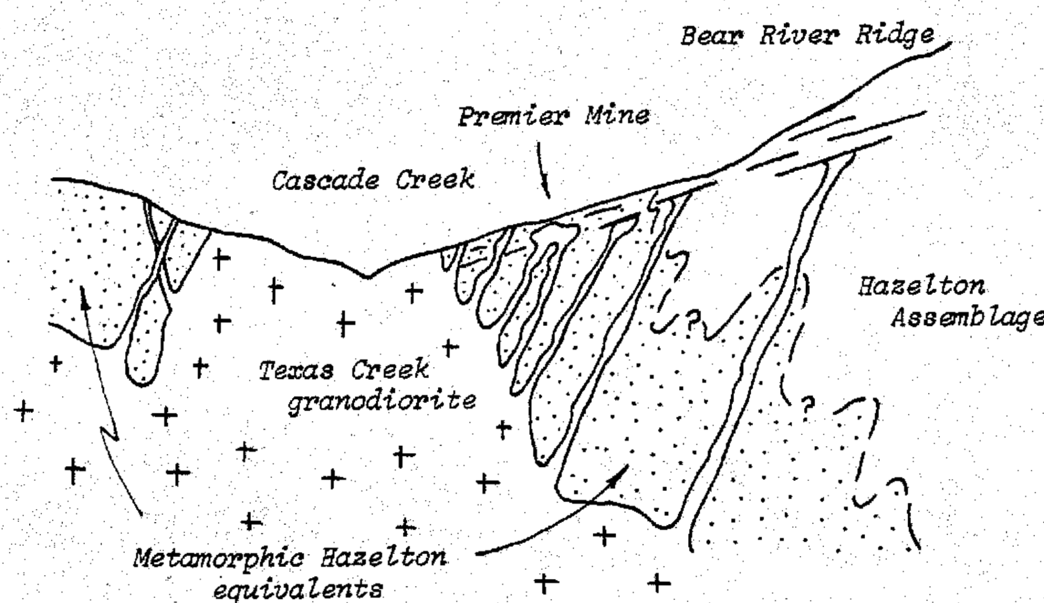
		Recovery per ton						
Year	Tons	Au. Oz.	Ag. Oz.	Pb. %	Zn. %	Cu. %	Cd. %	Dividends
1918	26	7.0	88.0	-	-	-	-	-
19	488	6.6	221.0	-	-	-	-	-
20	799	2.86	97.0	-	-	-	-	-
21	18,750	1.88	60.5	-	-	-	-	$ 400,000.
22	102,334	1.21	41.8	-	-	-	-	2,750,000
23	145,665	0.80	18.9	2.1	-	-	-	1,738,000
24	159,014	0.875	19.0	1.42	-	-	-	1,715,000
25	168,557	0.70	14.4	2.34	-	-	-	1,600,375
26	230,987	0.527	12.6	0.97	-	-	-	1,600,437
27	244,172	0.48	12.8	4.70	-	2.57	-	1,601,250
28	275,811	0.47	8.6	5.30	-	3.73	-	1,300,000
29	266,972	0.364	8.7	3.94	-	2.43	-	1,208,250
1930	256,836	0.338	9.9	2.40	-	0.98	-	1,203,281
31	242,317	0.328	6.25	2.42	-	0.76	-	601,828
32	221,718	0.343	7.03	2.45	-	0.78	-	691,535
33	185,421	0.268	5.43	-	-	-	-	650,985
34	153,950	0.17	4.30	(heads)	-	-	-	600,000
35	149,672	-	-	-	-	-	-	650,000
36	192,442	0.225	5.2	-	-	-	-	800,000
37	201,206	0.237	4.54	-	-	-	-	NIL
38	184,606	-	-	-	-	-	-	200,000
39	169,164	0.24	5.25	-	-	-	-	400,000
1940	171,504	0.216	3.58	-	-	-	-	400,000
41	170,504	-	-	-	-	-	-	400,000
42	140,567	0.259	-	-	-	-	-	400,000
43	93,003	0.238	3.58	-	-	-	-	325,000
44	68,496	-	-	-	-	-	-	125,000
45	65,801	-	-	-	-	-	-	100,000
46	34,804	0.234	1.10	1.68	-	-	-	25,000
47	59,343	0.22	1.49	2.25	-	-	-	NIL
48	41,360	0.207	1.46	1.97	1.36	-	.014	NIL
49	10,348	-	-	-	-	-	-	NIL
1950	79,167	0.205	1.69	2.0	-	-	-	NIL
51	67,844	0.101	1.95	2.63	3.87	-	.027	NIL
52	90,762	0.098	1.73	2.23	3.37	-	.025	50,000
53	40,322	0.123	1.94	2.70	3.48	-	.068	NIL
1954 to 1958 -- closed down				DIVIDENDS TOTAL				$21,535,941
1959	1,282	5.89	158.7	6.41	7.85	0.64	-	-
60	62	10.48	271.4	5.15	8.64	-	-	-
61	831	7.78	135.8	3.36	3.48	-	-	-
62	465	7.0	112.4	3.15	4.6	-	-	-
63	96	6.6	98.0	3.12	4.6	-	-	-
64	2,712	0.71	14.4	-	-	-	-	-
65	2,336	0.28	6.4	0.15	0.28	-	-	-
66	14,189	0.57	11.6	0.30	0.42	-	-	-
67	6,694	0.54	12.4	0.35	0.46	-	-	-
68	4	12.75	182.0	1.28	2.15	-	-	-
Avge	4,722,413	0.384	8.03	2.5	3.0	1.9		

Totals 4,722,413 tons ---1,814,723 oz. gold ----37,963,245 oz. silver

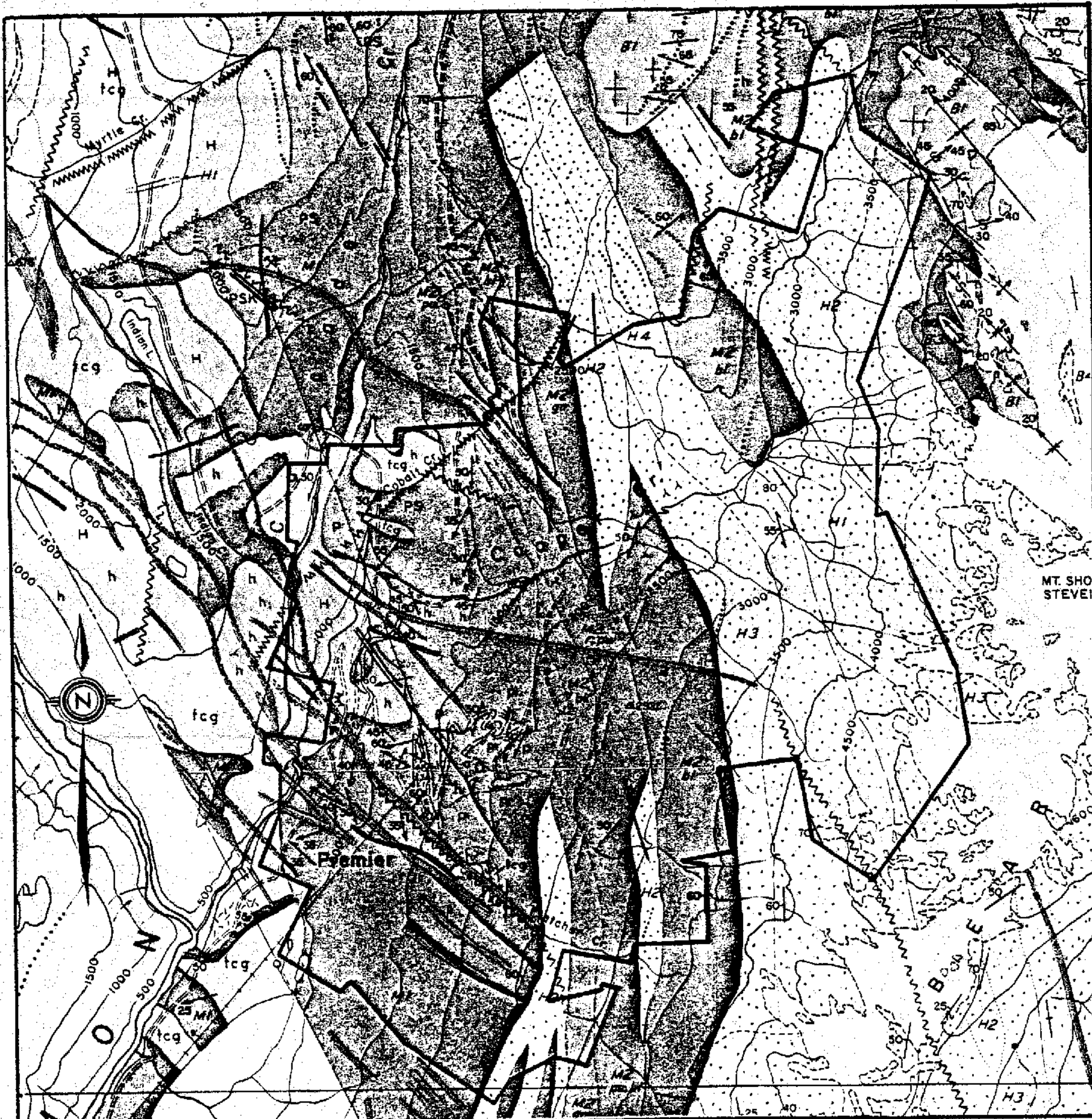
GEOLOGY

The Silbak Premier property is underlain by sediments and volcanics intruded by porphyritic hypabyssal rocks. The "Coast Crystalline Belt" lies immediately to the west and the "Bowser Formation" to the east.

The Silbak deposits are contained within a cataclastic zone developed within Hazelton green valcanic conglomerates and stippled tuffs which underlie the central part of the property. They are intruded and metamorphosed by the Texas Creek pluton which is thought to be an early phase of the Coast Range intrusives.



The main rocks in the mine area were originally volcanic conglomerates and other epiclastics and banded tuffs with some fine-grained, green to grey rocks which have been altered to mylonites. The local geology has been complicated



L E G E N D

	Unconsolidated
B	*Bowser Assemblage*
fcg	*Texas Creek Granodiorite*
H	*Hazelton Assemblage*
M	*Metamorphic Hazelton equivalent*
	Lamprophyre Dykes
	Granodiorite Porphyry
	Fault Zone

GEOLIGIC PLAN

SILBAK PREMIER PROPERTY

Scale 0 1 Mile

After E.W.Grove. 1971

by the intrusion of an irregular and ill-defined mass known as the Premier Prophyry. In composition, it is reported by Grove to be comparable to nearby border-alteration phases of the Texas Creek granodiorite. It is visually similar to some metamorphosed Hazelton rocks and most of the old mine descriptions and drill logs class pseudoporphyry types as Premier Porphyry. The extent and configuration of this intrusive body which is closely associated with the deposits is poorly understood.

E.W. Grove described the alteration and related ore deposits as follows:

> *Most of the country rocks, including the Premier Porphyry, have undergone alteration. These rocks are mainly green to grey, weakly foliated cataclasites and mylonites. The true nature of the rocks can be discerned beyond the mineralized area by their macroscopic and microscopic textures. Within the mineralized area the original mineral and rock particles are replaced by fine-grained, more or less equigranular quartz, sericite, carbonate, minor epidote and pyrite, and spotty magnetite. Extensive alteration has masked the original materials, producing a rather uniform, nondescript material termed "greenstone" in the older publications. Hornblende metacrysts which are present in most of the rocks outside the ore zone have been completely replaced in wallrocks adjacent to the quartz and quartz-sulphide veins, where the rocks consist of about 70 percent quartz, 15 percent sericite and up to 25 percent pyrite. Rarely, original quartz blebs are preserved in these rocks. Much of the pyrite in the altered wallrocks has a pyritohedral form in contrast to simple cubes found in the Premier Porphyry or the ore.*
>
> *In the mine area, variable chloritic alteration and silicification affect most of the country rocks. In the mineral zone the wallrocks - both Premier Porphyry and "greenstone" - have been extensively replaced by quartz, sericite and pyrite, producing an irregular alteration halo. The massive quartz-pyrite fissure-replacement system enclosing the oreshoots lies within the halo and can be examined both underground and on the surface.*
>
> *Mineralization in the Premier system consisted of an extensive quartz vein-*

replacement zone enclosing or partially enclosing a considerable number of sulphide-rich oreshoots from which the main gold-silver production was derived. Quartz represents the main gangue material, which also includes calcite, barite, minor adularia, and country rock. The oreshoots contain on an average 20 percent sulphides, but in the lenses of bonanza ore this amounted to as much as 80 percent, with the rest altered wallrock and quartz-calcite veins. Pyrite was the most abundant sulphide and occurs in most of the sub-ore gangue and surrounding wallrock as well. The other major sulphides in order of abundance were sphalerite, galena, chalcopyrite, and pyrrhotite, with small amounts of argentite, tetrahedrite (and freibergite), polybasite, pyrargyrite, stephanite, as well as electrum, native gold, native silver, and rare mercury.

The over-all nature of the ore zone is an elongate, irregular, quartz-carbonate-pyrite vein-replacement network localized along a system of complex intersecting shear fractures. This system has a known length of about 5,500 feet and has its maximum over-all width in the southerly Premier sector, which approaches 600 feet. Within this complex zone the individual oreshoots are found as isolated or overlapping en echelon flattened, pipe-like lenses. These have been illustrated on Figure 39 to show approximate realtionships and plunge directions which are uniformly steep to the west.

Geologic opinions regarding ore controls and ore genesis are by no means unanimous. Convincing evidence has been difficult to obtain, leaving the field relatively open to speculation. While most authors refer to the deposits as replacement type or breccia-zone filling, some widely divergent hypotheses have been proposed.

Structural controls appear to have had a major influence on the ore concentration at the Premier property but, unfortunately, detail regarding such structural control is also poorly understood. The main orebodies occur in a complex arcuate zone, concave to the north. Dips are generally to the NW and change from steep in the upper workings to moderate at depth.

Figure 39
GENERAL GEOLOGY OF THE SILBAK PREMIER MINES LTD. AREA
SHOWING ORE SHOOT PROJECTIONS

The mineralization observed on the number six level, which is the lower grade part of the deposit, occurred as irregular patches or lenses of sulphides within quartz-calcite gangue or as crude disseminations within alteration zones. Although the actual ore bodies are often small, irregularly shaped zones which could be easily missed by individual diamond drill holes, the overall zone of alteration enveloping the deposits are fairly consistent and constitute a much larger and more predictable target. Increased pyritization and silicification are the main visual features which indicate a proximity to ore.

ECONOMIC CONSIDERATIONS

A report dated August 1, 1980 by Derry, Michener & Booth reports Proven and Indicated reserves of:

	Tons	Oz.Au	Oz.Ag	%Pb	%Zn
Silbak Premier	75,250	0.28	2.80	1.8	2.7
Premier Border	74,146	0.07	1.98	4.25	6.36
Total	149,396	0.18	2.39	3.0	4.5

Underground drilling during 1981 has added modest tonnages of lower grade reserves below the #6 level in the Premier sector of the mine.

The existing reserves are derived primarily from low-grade remnants or extensions of the known deposits. Several factors contribute to the probability that they could not, by themselves, be profitably exploited at present or foreseeable precious metal prices:

1. They are widely scattered and will require substantial mine rehabilitation and considerable development to recover.
2. Most of the reserves are below the bottom working level and will require installation of a winze and the hoisting of muck.
3. The reserves appear to be irregular, poorly defined and relatively narrow. These characteristics necessitate high-cost, low-production mining.
4. Suitable facilities at the site are essentially lacking, necessitating substantial capital expenditure based on a limited reserve potential.

The original mine was developed as a high-grade, low-tonnage operation and has to be classed as a major success. For a small mine, it paid unusually high dividends during its initial 25 years of operation.

The location of the "Lessee's lens" in 1959 reveals a similar success story. In the latter case, 28,671 tons of ore located in the footwall of the glory-hole produced 32,971 ounces of gold and 696,705 ounces of silver. The potential reward for such a discovery is indicated by the following revenue calculation:

32,971 oz. Au @$500 =	$16,485,500
696,705 oz. Au @ $10 =	6,967,050
Total Potential Revenue	$23,452,550

A similar calculation for the main Premier vein system would show a gross revenue of over $1.3 billion from 4.67 million tons of ore.

The potential profits for locating such a deposit must be weighed against the geologic possibility of another similar deposit existing on the property, combined with the relatively high exploration costs involved in searching for such a target. While the Silbak Premier mine encountered substantial tonnage of good grade ore, which resulted in a highly profitable operation, most other operators in the area were less fortunate.

Favourable economic aspects regarding exploration of the Silbak Premier property include:

1. Relatively good access combined with a suitable service centre and terminal facilities,
2. Acceptable metallurgical results have been well established, and
3. Highly profitable ore has been exploited from the property in the past.

The principal drawback is that the "highly profitable ore" mentioned above is exhausted and the immediate mine area has been fairly extensively explored.

A sound exploration program will, therefore, involve the search for an, as yet undiscovered, deposit. The development, and subsequent testing of geologic concepts necessary to locate such a deposit will, in all probability, be both time consuming and expensive to persue.

EXPLORATION POTENTIAL

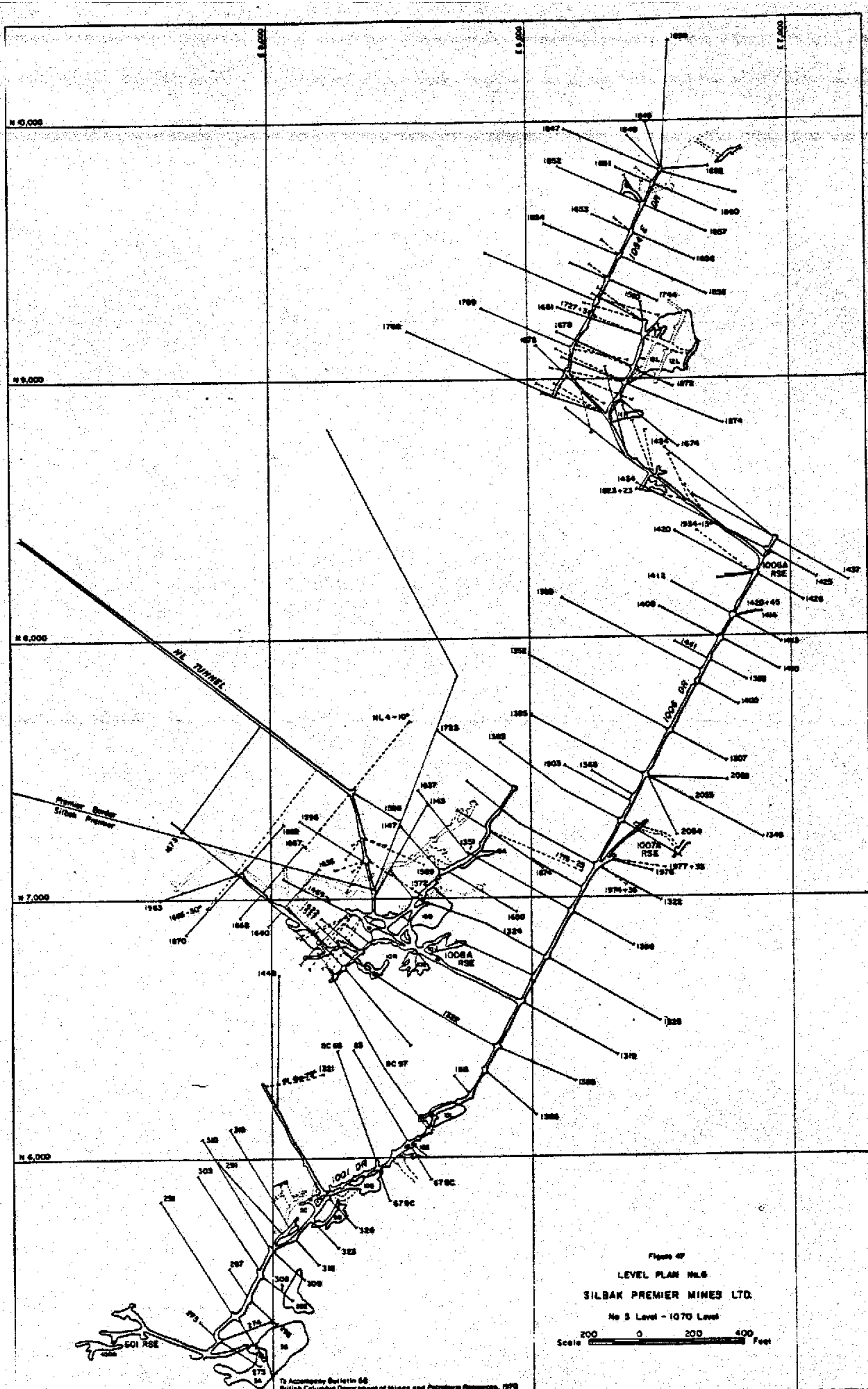
Further exploration possibilities seem limited both laterally and vertically in the past productive area of the mine.

The principal favourable aspect of the Silbak Premier property is the fact that it is a proven host of high-grade precious metal concentrations. The potential reward for locating a repetition or duplication of the exhausted deposits is enormous while the gologic potential for the existence of similar deposits seem reasonable.

The somewhat enthusiastic comments outlined above must be qualified by the fact that almost all of the easily accessible ground has been fairly extensively explored. The plans in the pocket indicate the extent of the surface diamond drilling while the drawing on the following page illustrates the drill hole coverage in the vicinity of the underground workings. All of the more obvious, and relatively inexpensive, exploration bets have essentially been tested by previous operators. While the unexplored portions of the property may prove to be equally favourable, exploration success will depend primarily on the development of sound geologic concepts which will direct onward efforts to areas conducive to metal concentration.

The target being sought will, in all probability, be entirely concealed and will have to be discovered by predicting the location of the geologic controls similar to those at the Premier.

At this time the assumption that other similar deposits could exist on the


N 10,000
N 9,000
N 8,000
N 7,000
N 6,000
NE TUNNEL
Premier Border
Silbak Premier
1004 E DR
1006 DR
1001 DR
1006A RSE
1007A RSE
1008A RSE
501 RSE
Figure 47
LEVEL PLAN No.6
SILBAK PREMIER MINES LTD.
No 5 Level - 1070 Level
Scale 200 0 200 400 Feet
To Accompany Bulletin 58
British Columbia Department of Mines and Petroleum Resources, 1970

property is based entirely on the following conditions:

1. that substantial portions of the claims are unexplored at depth,
2. that there is no known reason to preclude duplication of the necessary geologic environment,
3. that historically, the most productive area to search for new discoveries is in the immediate vicinity of known deposits, and
4. that very little effort to date has been directed toward a search for a repetition of favourable geologic conditions.

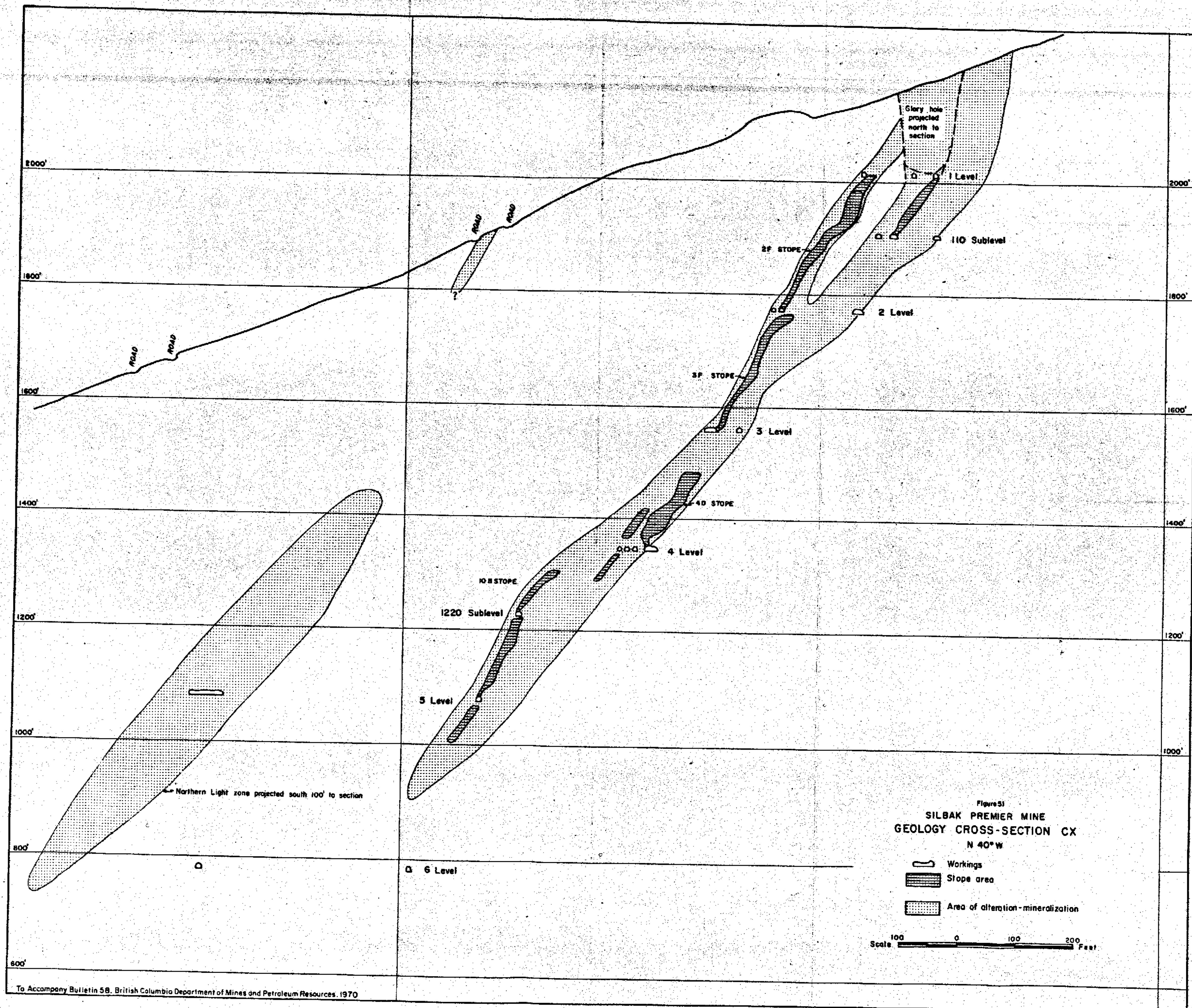
Several geologists have considered possible repetition of intersecting shear patterns in favourable Premier Porphyry or competent volcanics. However, very little physical work seems to have been done in this somewhat speculative field of exploration.

Although an abundance of data is available from previous work, some of the information will be difficult to correlate or confirm. All of the diamond drill core produced prior to 1980 is unusable while many of the underground workings are inaccessible.

Modern geophysical methods have not been used extensively and may hold some promise. A large halo of pyritization envelops the deposits while more massive sulphides occur with the precious metals.

The existence of readily recognizable alteration zones around the deposits should help considerably in the search for new discoveries. They significantly increase the size of the exploration target and will provide encouragement in areas which might otherwise be overlooked.

The limited size of the property, which is essentially surrounded by claims held by others, will tend to confine the scope of any geologic investigations.



Glory hole projected north to section
1 Level
110 Sublevel
2F STOPE
2 Level
3F STOPE
3 Level
4D STOPE
4 Level
10 B STOPE
1220 Sublevel
5 Level
6 Level
ROAD
Northern Light zone projected south 100' to section
2000'
1800'
1600'
1400'
1200'
1000'
800'
600'
Figure 51
SILBAK PREMIER MINE
GEOLOGY CROSS-SECTION CX
N 40° W
Workings
Stope area
Area of alteration-mineralization
Scale 100 0 100 200 Feet
To Accompany Bulletin 58, British Columbia Department of Mines and Petroleum Resources, 1970

Figure 51

The diamond drill hole data seen during the examination indicated that the precious metal values were generally concentrated within specific vein systems. Surrounding rock was essentially barren and did not indicate much promise for large tonnages of possible open pit ore. This aspect of the property was not studied in detail however, and should not be overlooked in any thorough investigation. Small tonnages of near surface ore, particularly in the vicinity of the glory hole seem probable.

RECOMMENDED PROGRAM

The larger ore bodies at the Silbak Premier property are known to have certain controls and are localized within a system by distinct structural features. Ongoing exploration efforts should be directed toward locating a repetition of the geologic conditions which produced the original high-grade, precious-metal deposit.

The work will entail detailed geologic investigations permitting the development of theories regarding ore controls and ore genesis. A thorough understanding of the local geologic setting will be required in order to predict the location of favourable conditions and apply any theories developed.

The general task involves a comprehensive geologic reappraisal of the property and a new look at the ore shoots and their apparent controls. The specific work required is much more difficult to predict, but will undoubtedly include the following:

1. Assembly of the available geologic information into a usable package,
2. Detailed geologic investigations both locally and regionally,
3. Development of a geologic model of the property,
4. The study of metal trends and relationships,
5. Petrographic studies relating to ore genesis and host rocks,
6. Literature search of comparable precious-metal deposits, and
7. Visits to similar occurrences where geologic conditions can be observed and theories discussed.

It should be emphasized that it will not be a staight forward task to determine ore controls and predict where the repetition of favourable features might occur. E.W. Grove described the structural setting as follows:

> *The structure of the area, if taken as part of the over-all tectonic framework, is relatively simply. Taken in detail, the structure is complex and the study of folding and lithologic relationships requires the recording of many factual observations and a broad regional knowledge.*

R.H. Seraphim, following a geologic investigation during the 1950's, concluded that favourable conditions were unpredictable and that further exploration based on this possibility was not warranted. While most geologic reports are considerably less pessimistic, no one considers the task simple. Certainly, the geology is complex, altered by its proximity to a major intrusive and further complicated by metasomatism and at least four phases of intermittent quartz-sulphide and dyke emplacement.

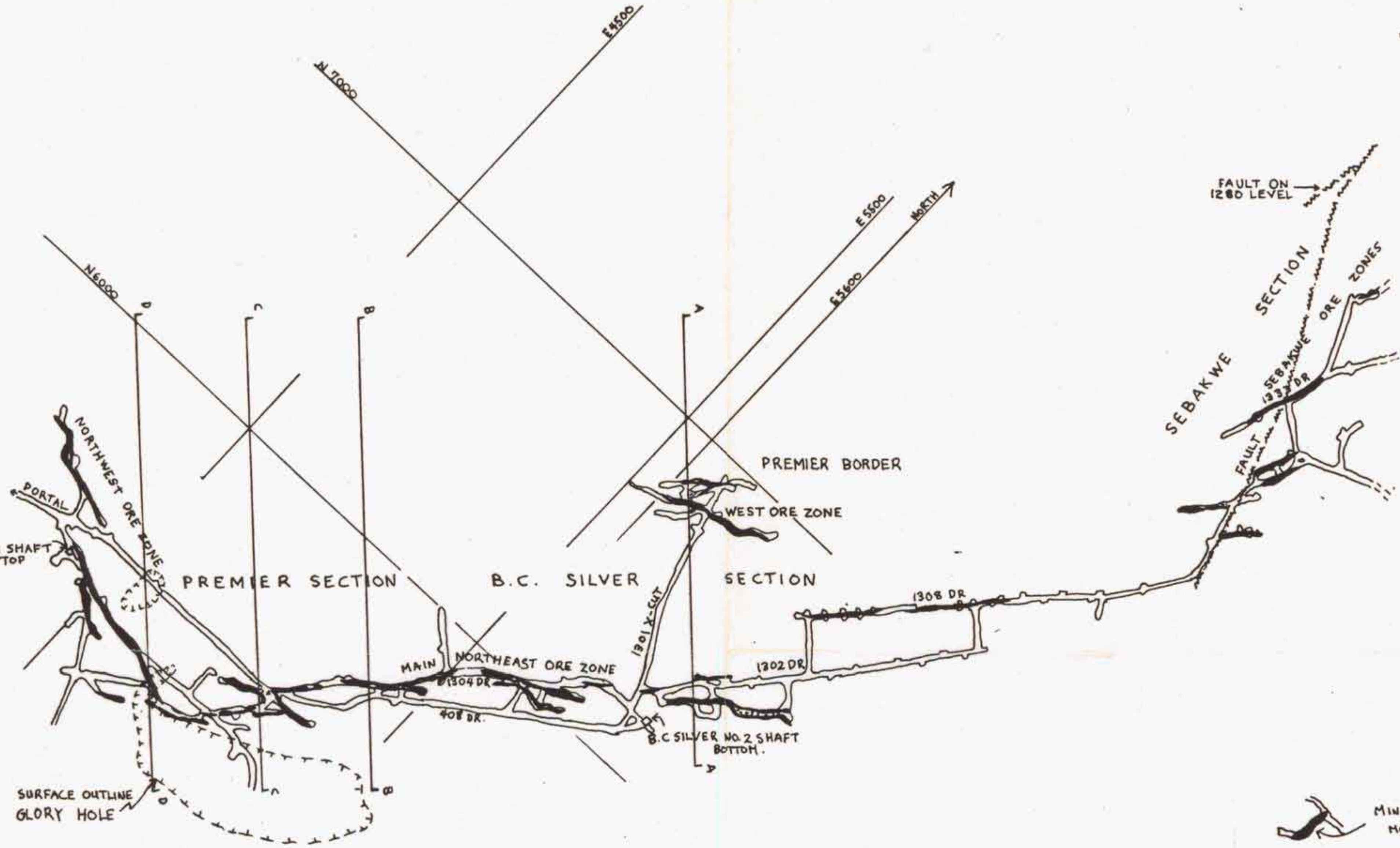
The search for a concealed deposit under these conditions is admittedly speculative, however we believe that the geologic program envisioned does have a reasonable chance of success and the potential value of the target being sought outweighs the risk involved.

While it may be possible to develop sound geologic targets and test their potential within a twelve month period, a less severe time constraint would significantly improve the possibility of success. Ideally, the program would be undertaken as a two year venture with the initial year devoted to the geologic study and the second year utilized for confirming hypotheses and, if warranted, geologic drilling and the testing of target areas.

Under these conditions, the first year's budget would be $100,000 to $150,000 while the second year's could range from $100,000 to $500,000, with the higher figure providing for 8,000 feet of drilling and related investigations.

As is the case with most exploration programs at this preliminary stage, justification for the second phase work, particularly the diamond drilling, is by no means assured.

Inadequate time restraints could severely hamper the project's potential while excessive payments or major financial commitments would be inappropriate for this type of high risk exploration.



MINERALIZED ZONES, MOSTLY CONTAINING MORE THAN ONE ORE BODY.

FIG. 7

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: SILBAK PREMIER MINE

LOCATION: STEWART, B.C.

TYPE OF MAP: PLAN OF 1350 LEVEL (4 LEVEL) SHOWING MINERALIZED ZONES AND LOCATION OF SERAPHIM SECTIONS

BASED ON: SERAPHIM (1979) REPORT

DATE OF WORK:

DATE: October 1981

DRAWN BY: T.C

110 55 0 110 220 m.

SCALE: 1:5500 approx.

FIG. 8
SILBAK PREMIER MINES LTD.
GENERALIZED SECTION 'A'
S45°E

SCALE 1:1200 MARCH, 1979

FIG. 9

SILBAK PREMIER MINES LTD.

GENERALIZED SECTION 'B'

S45°E

FIG. 10
SILBAK PREMIER MINES LTD.
GENERALIZED SECTION 'C'
S45°E
SCALE 1:1200 FEBRUARY, 1979

FIG. 11

SILBAK PREMIER MINES LTD.

GENERALIZED SECTION 'D'

S45E

SCALE 1:1200 FEBRUARY, 1979

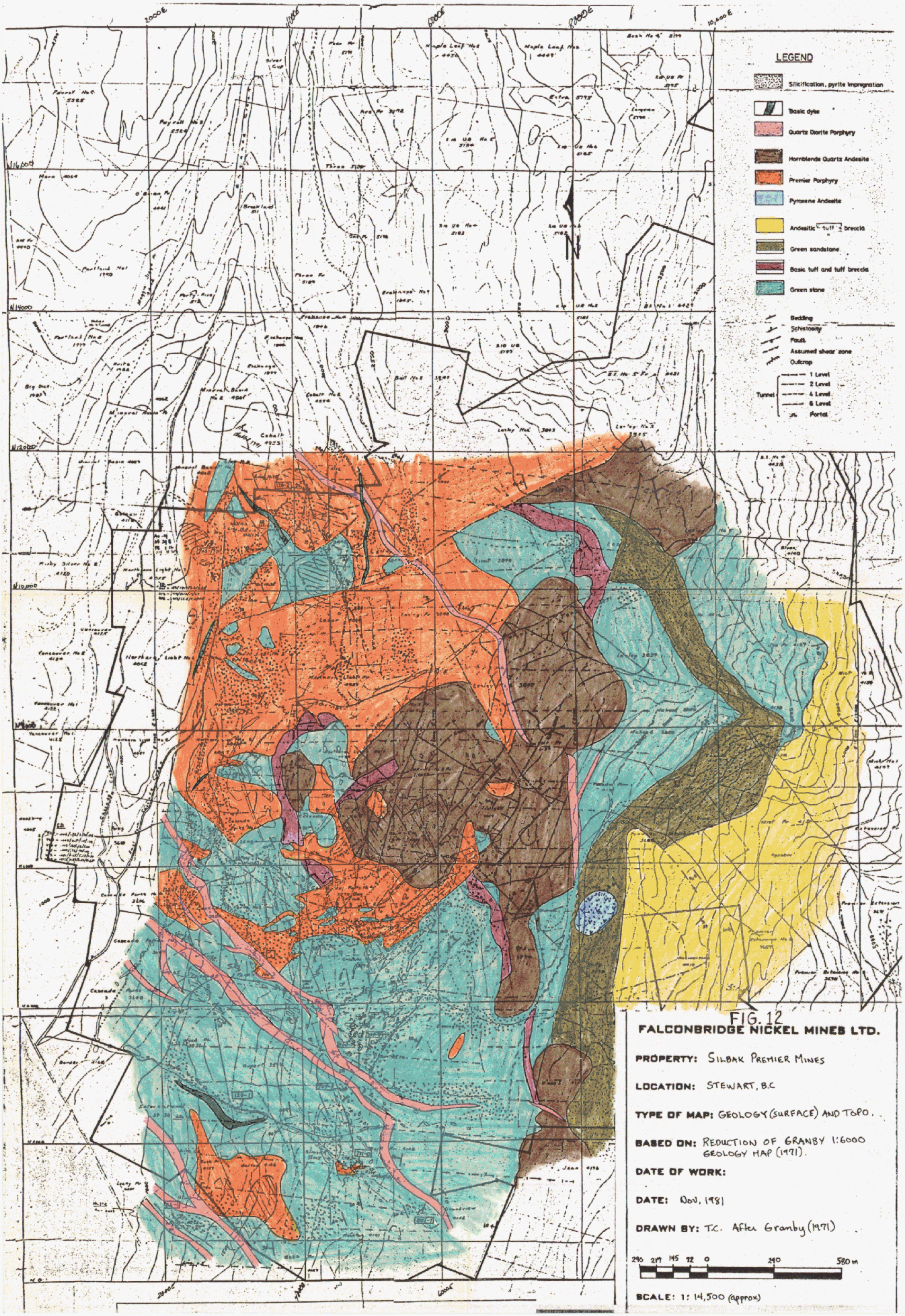

LEGEND
Silicification, pyrite impregnation
Basic dyke
Quartz Diorite Porphyry
Hornblende Quartz Andesite
Premier Porphyry
Pyroxene Andesite
Andesitic tuff breccia
Green sandstone
Basic tuff and tuff breccia
Green stone
Bedding
Schistosity
Fault
Assumed shear zone
Outcrop
Tunnel
1 Level
2 Level
4 Level
6 Level
Portal
FALCONBRIDGE NICKEL MINES LTD.
PROPERTY: SILBAK PREMIER MINES
LOCATION: STEWART, B.C
TYPE OF MAP: GEOLOGY (SURFACE) AND TOPO.
BASED ON: REDUCTION OF GRANBY 1:6000 GEOLOGY MAP (1971).
DATE OF WORK:
DATE: Nov, 1981
DRAWN BY: T.C. After Granby (1971)
290 217 145 72 0 290 580 m
SCALE: 1: 14,500 (approx)

FIG. 12

2 000 E
4 000 E
6 000 E
8 000 E
10 000 E
12 000 E
16 000 N
14 000 N
12 000 N
10 000 N
8 000 N
6 000 N
4 000 N
2 000 N
0
Cascade Creek
East Fork Cascade Creek
Soil Grid
LEGEND
Basic dyke
Quartz Diorite Porphyry
Hornblende Quartz Andesite
Premier Porphyry
Pyroxene Andesite
Andesitic tuff breccia
Green sandstone
Basic tuff and tuff breccia
Green stone
Siliceous tuff, silica-rich zones
Bedding
Schistosity
Fault
Outcrop
100 0 100 200 300 400 Metres
SCALE: 1:6 000
FALCONBRIDGE NICKEL MINES LIMITED
PROPERTY:
Silbak Premier Mine
LOCATION:
Stewart Area B.C.
TYPE OF MAP:
Geology - reinterpreted by T. Chandler
BASED ON: Geology Map - The Granby Mining Company Ltd and Fieldwork by M. Kiyokawa and D. Kretzchmar
DATE OF WORK: 1970-1980
MAP REF. NO.:
FIG. NO.: 13
DRAWN BY: G.T.
DATE: Sept. 1981
N.T.S. NO.: 104-B-1
103-81-2


2 000E
4 000E
6 000E
8 000E
10 000E
12 000E
14 000N
12 000N
10 000N
8 000N
6 000N
4 000N
2 000N
0
Glory Hole
Areas of proposed FNM detailed grids.
LEGEND
Areas of pyritization, silicification (Granby)
I. P. anomaly of interest (Granby)
I. P. anomaly Fossible interest (Granby)
Geochemical anomalous Area (Kretchmar)
1- Level
2- Level
4- Level
6- Level
100 0 100 200 300 400 Metres
SCALE: 1:6·000
FALCONBRIDGE NICKEL MINES LIMITED
PROPERTY:
Silbak Premier Mine
LOCATION
Stewart Area B.C.
TYPE OF MAP:
Overlay for Map 103-81-2
DATE OF WORK: 1970-1980
MAP REF. NO.:
FIG. NO.:
DRAWN BY: G.T.
DATE: Sept. 1981
N.T.S. NO.: 104-B-1
14

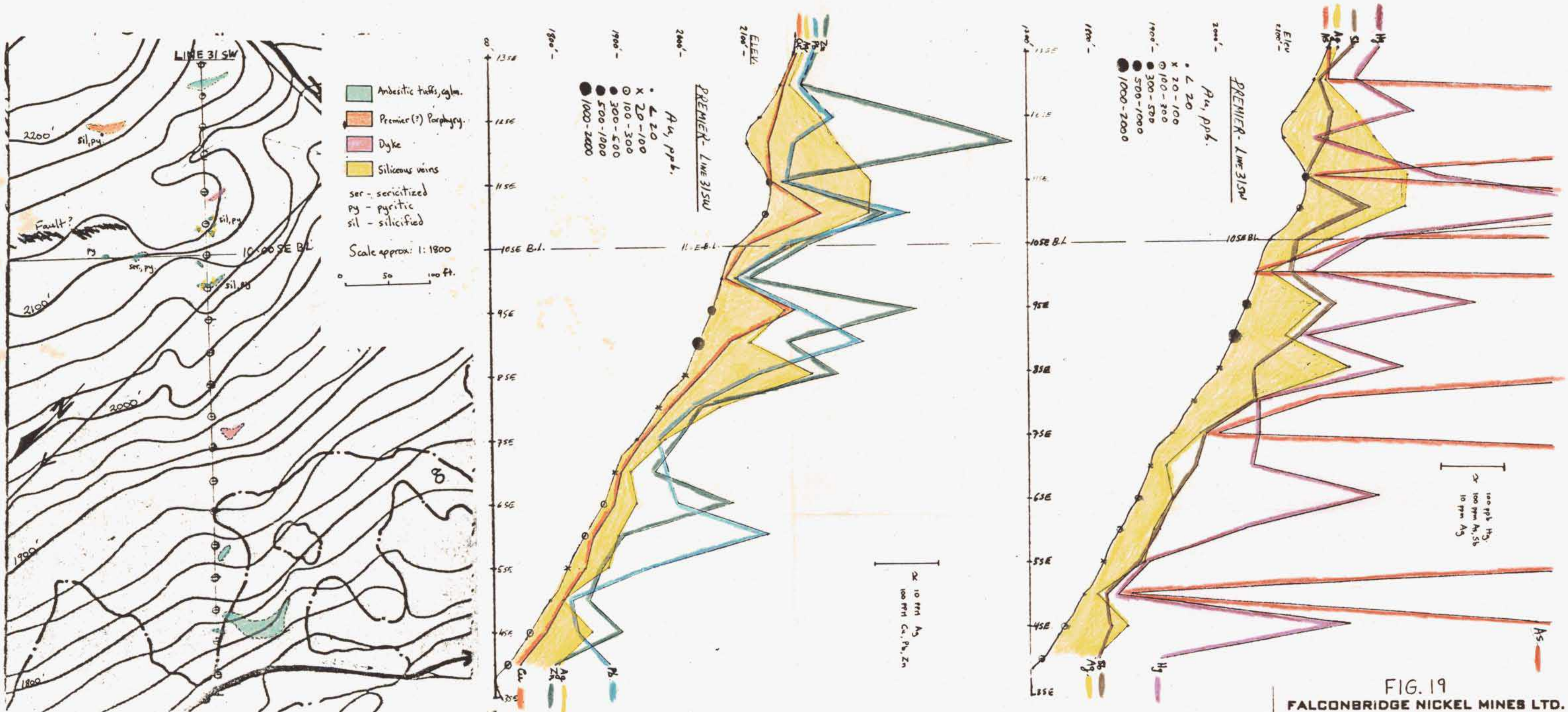


FIG. 19

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: BRITISH SILBAK PREMIER MINES LTD

LOCATION: STEWART. B.C

TYPE OF MAP: SOIL GEOCHEM. PROFILE LINE 31 SW

BASED ON: Fieldwork S.Z., T.C.

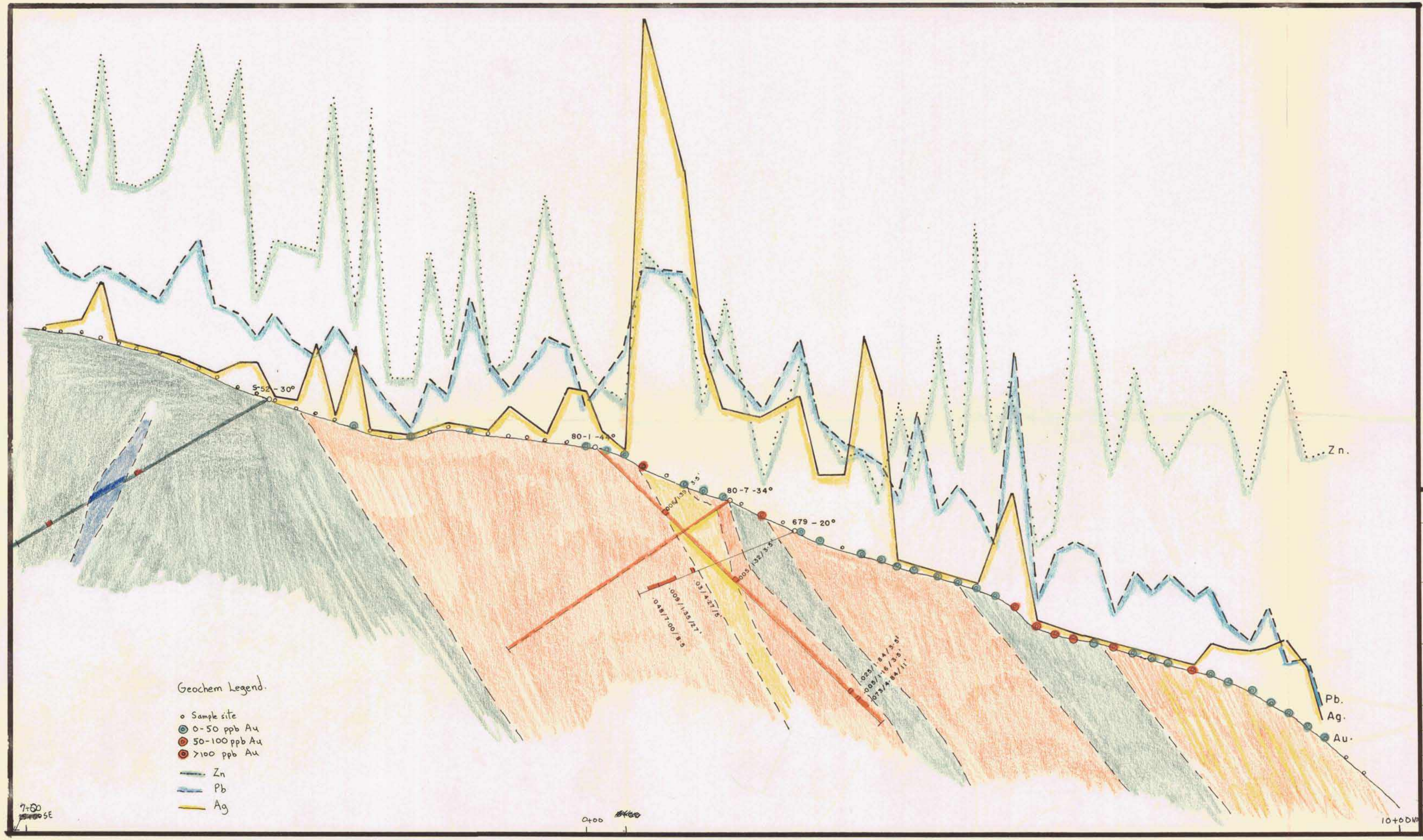
DATE OF WORK: Sept 1981

DATE: Oct. 1981

DRAWN BY: S.Z., T.C.

36m. 27 18 9 0 36 72 m.

SCALE: 1 : 1800 (approx.)



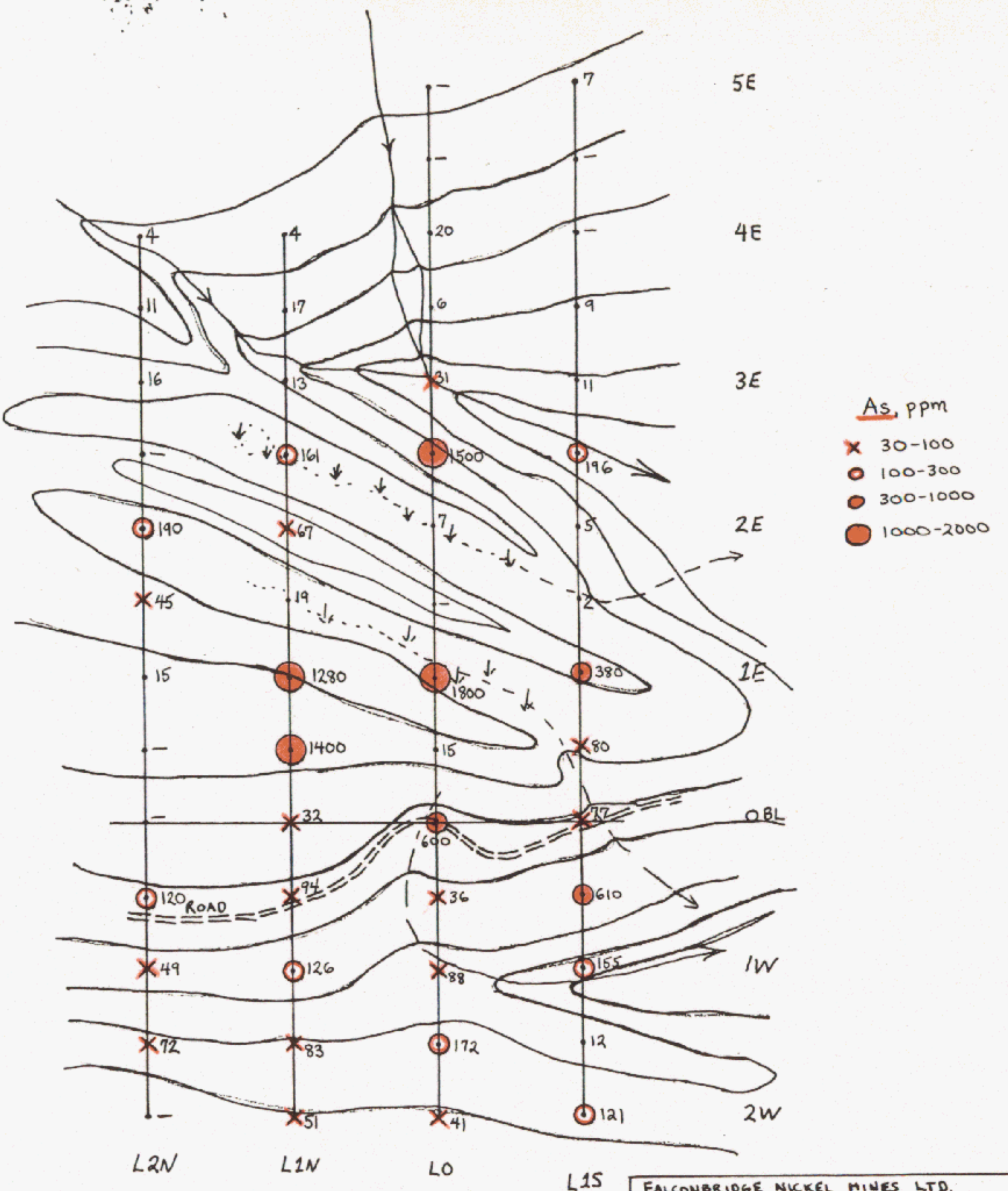
LEGEND

- Premier Porphyry
- Green stone
- Purple Tuff
- Silicified zones

24 0 24 48 60 Metres

SCALE: 1:1.200

FALCONBRIDGE NICKEL MINES LIMITED		
PROPERTY: Silbak Premier Mine		
LOCATION: Stewart Area B.C.		
TYPE OF MAP: Geochem Topo Profile Kretzchmar Geochem Grid line 1SW ~~0+00~~ 7+00 SE to ~~10+00SE~~ 10+00 NW, looking SW		
WORKING PLACE:		
BASED ON:		
DATE OF WORK: 1980	MAP REF. NO.:	FIG. NO.: 20
DRAWN BY: T.C. G.T		
DATE: Sept. 1981	N.T.S. NO.: 104-B-1	



Schematic Topo only.

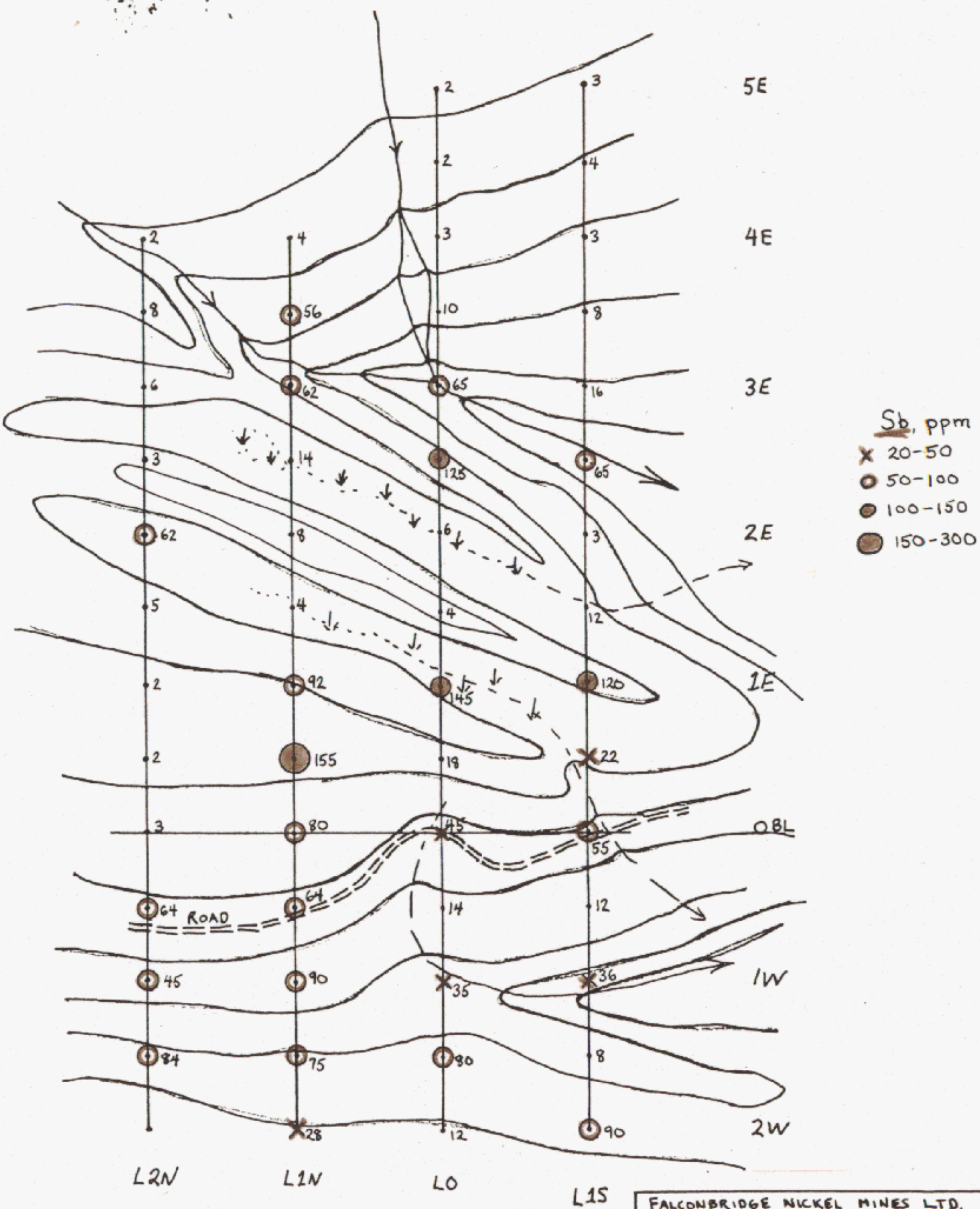
FALCONBRIDGE NICKEL MINES LTD.

ORIENTATION SOIL GEOCHEM. SURVEY.
NORTHERN AREA - BIG MISSOURI RD.
PREMIER MINE - STEWART B.C.

Based on fieldwork by S.Z, T.C Sept 1981.

Scale: 1:1200 (1" = 100 ft.)

FIG. 21



Schematic Topo only.

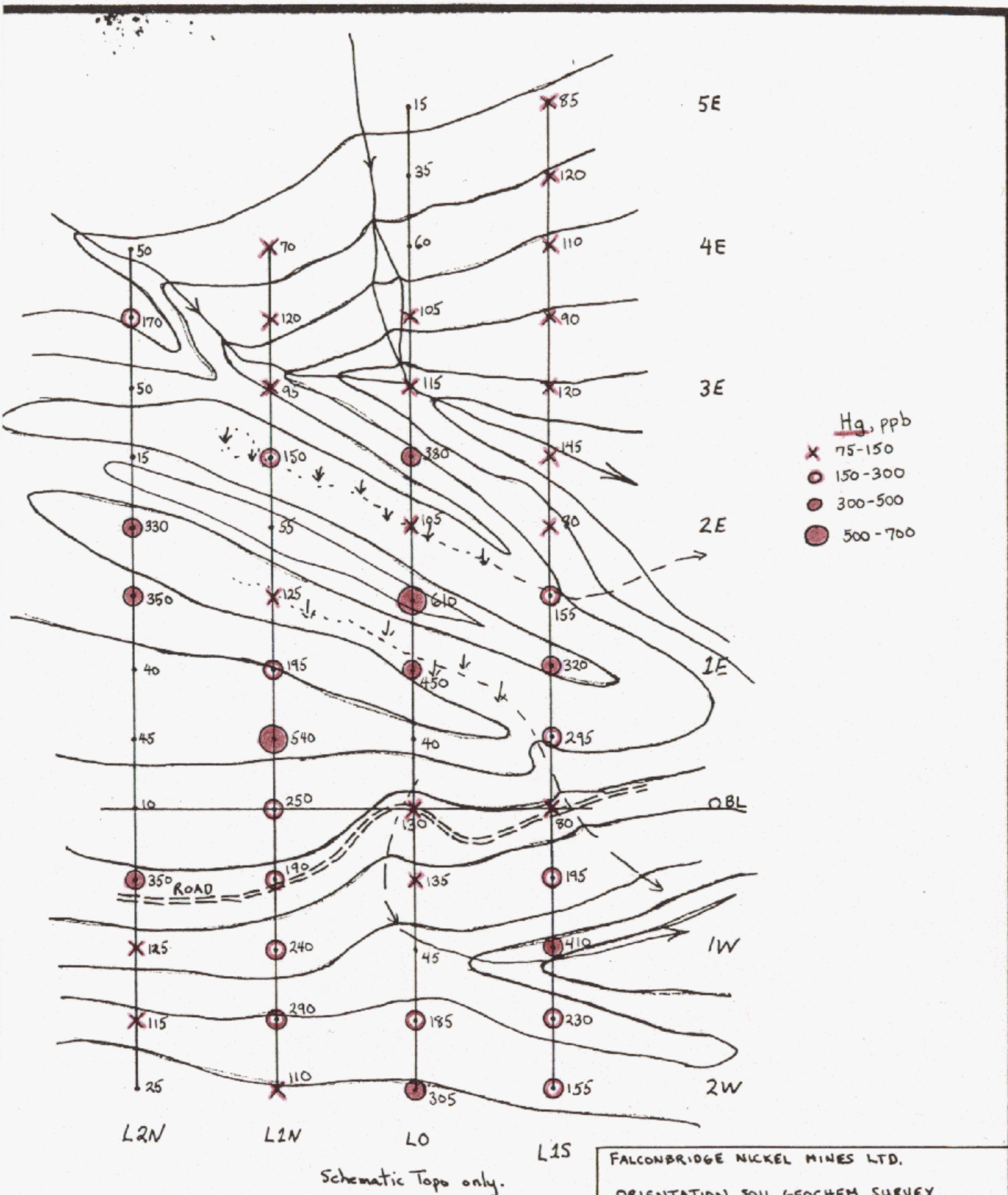
FALCONBRIDGE NICKEL MINES LTD.

ORIENTATION SOIL GEOCHEM. SURVEY
NORTHERN AREA - BIG MISSOURI RD.
PREMIER MINE - STEWART B.C.

Based on fieldwork by S.Z, T.C Sept 1981.

Scale: 1:1200 (1" = 100 ft.).

FIG. 22



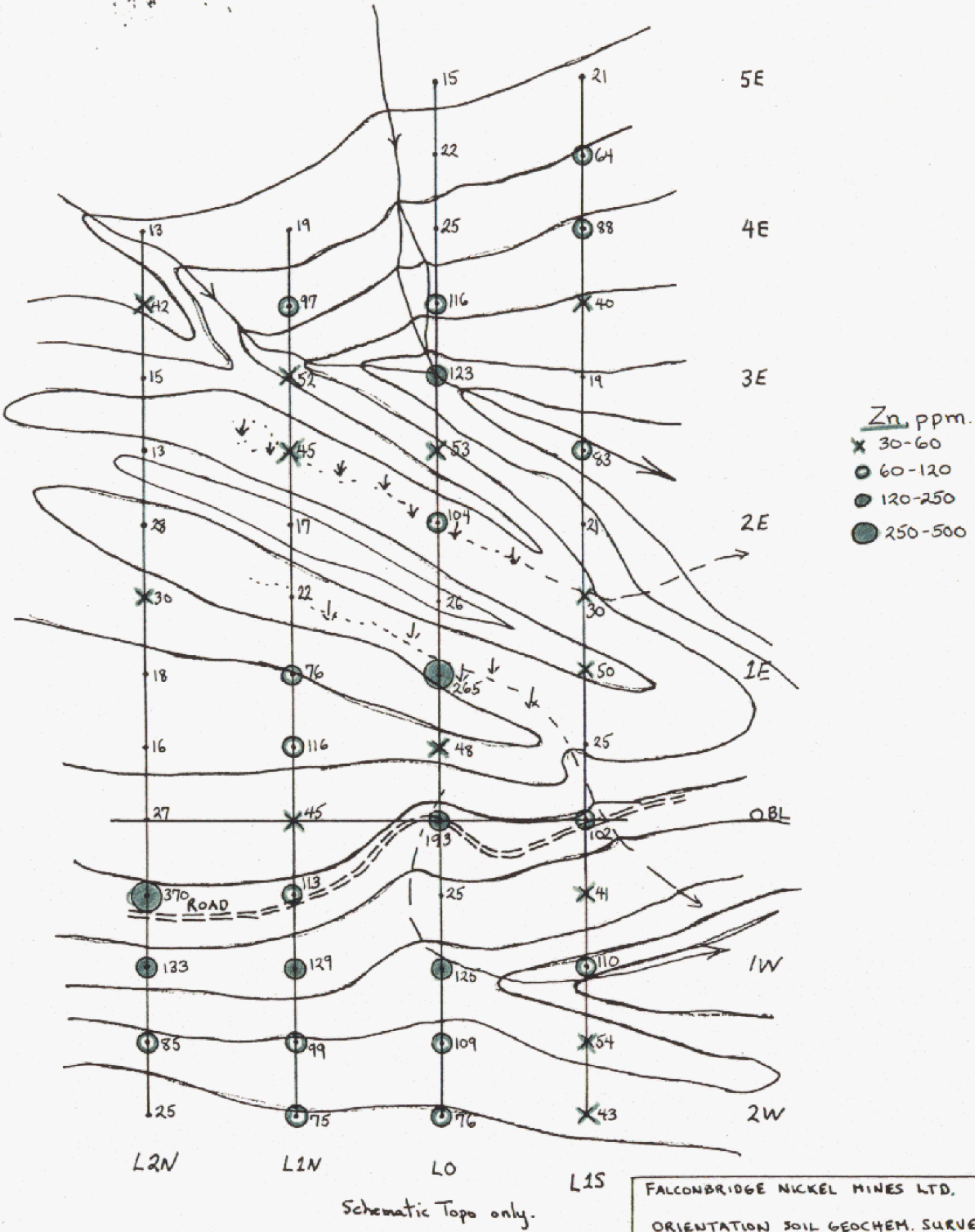
FALCONBRIDGE NICKEL MINES LTD.

ORIENTATION SOIL GEOCHEM. SURVEY.
NORTHERN AREA - BIG MISSOURI RD.
PREMIER MINE - STEWART B.C.

Based on fieldwork by S.Z, T.C Sept 1981.

Scale: 1:1200 (1" = 100 ft.)

FIG. 23



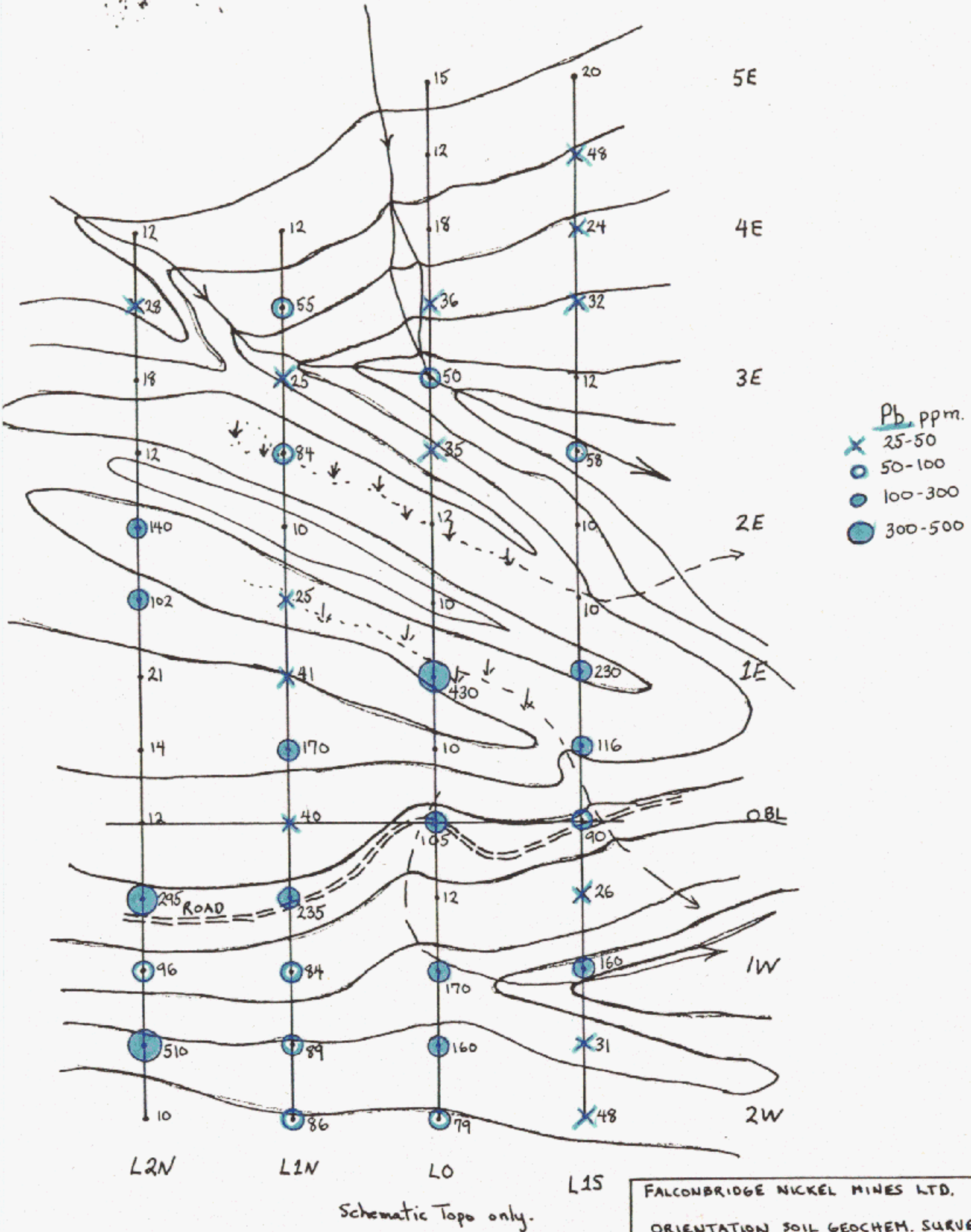
FALCONBRIDGE NICKEL MINES LTD.

ORIENTATION SOIL GEOCHEM. SURVEY.
NORTHERN AREA - BIG MISSOURI RD.
PREMIER MINE - STEWART B.C.

Based on fieldwork by S.Z, T.C Sept 1981.

Scale: 1:1200 (1" = 100 ft.).

FIG. 24



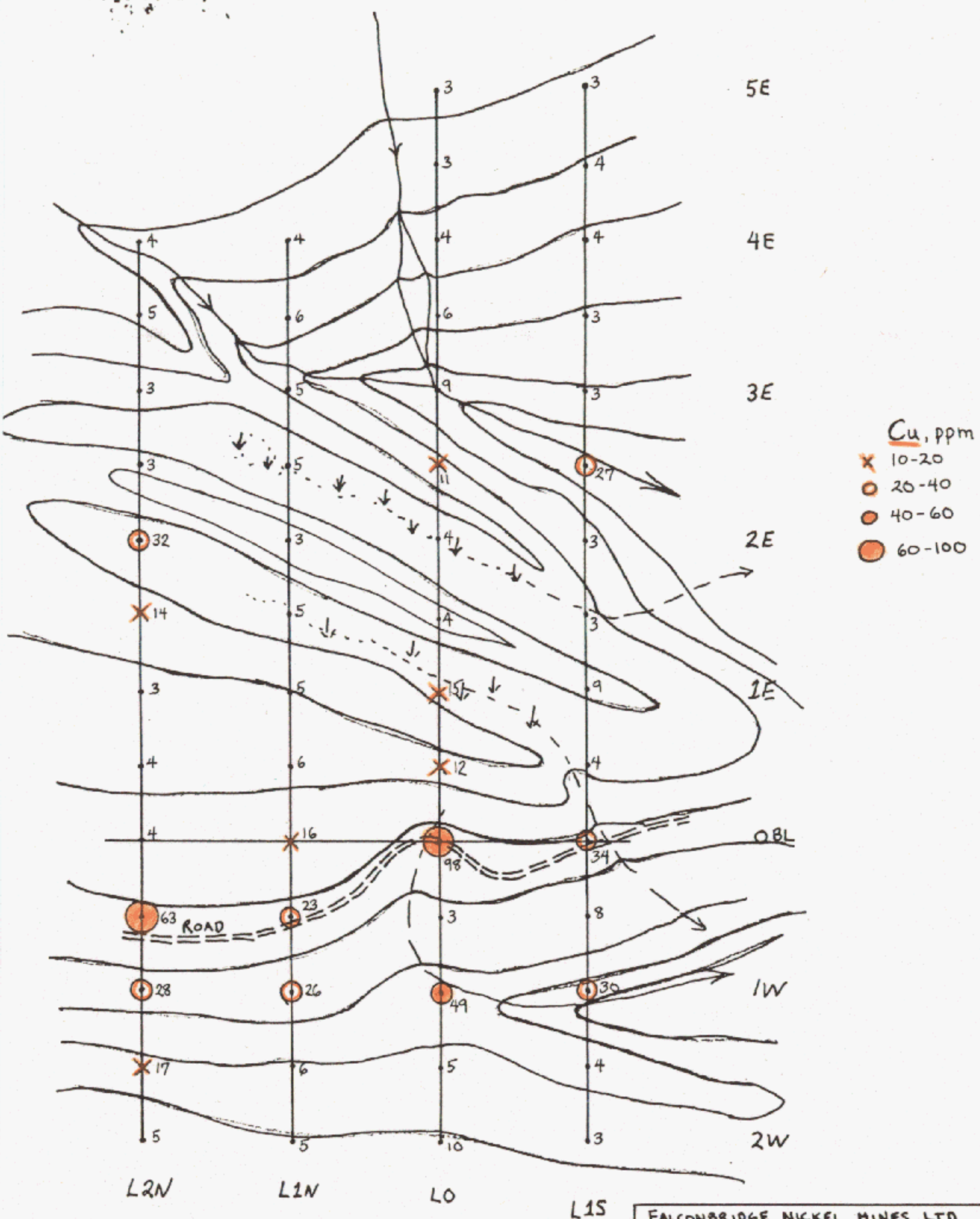
FALCONBRIDGE NICKEL MINES LTD.

ORIENTATION SOIL GEOCHEM. SURVEY.
NORTHERN AREA - BIG MISSOURI RD.
PREMIER MINE - STEWART B.C.

Based on fieldwork by S.Z, T.C Sept 1981.

Scale: 1:1200 (1" = 100 ft.).

FIG. 25



Schematic Topo only.

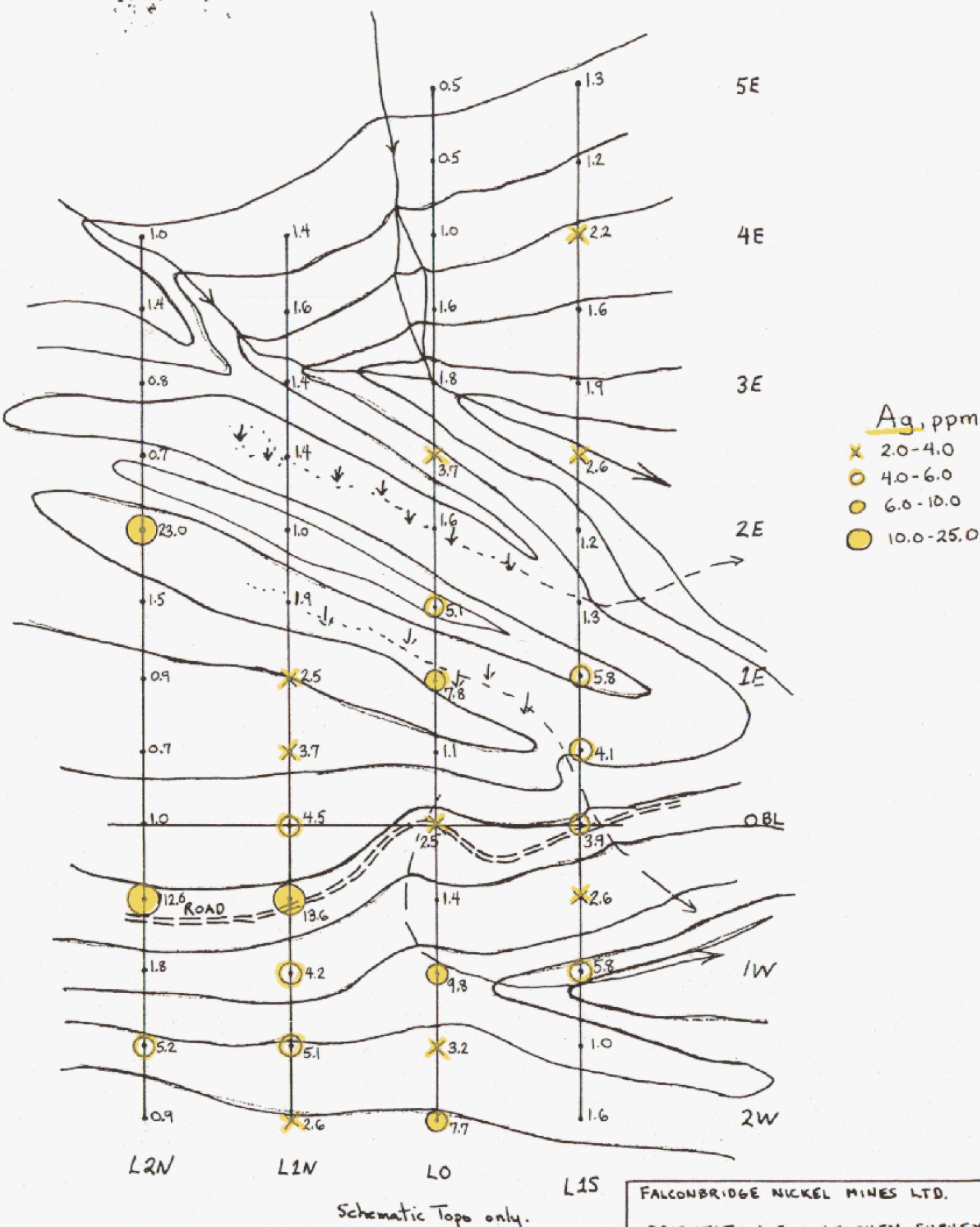
FALCONBRIDGE NICKEL MINES LTD.

ORIENTATION SOIL GEOCHEM. SURVEY.
NORTHERN AREA - BIG MISSOURI RD.
PREMIER MINE - STEWART B.C.

Based on fieldwork by S.Z, T.C Sept 1981.

Scale: 1:1200 (1" = 100 ft.)

FIG. 26



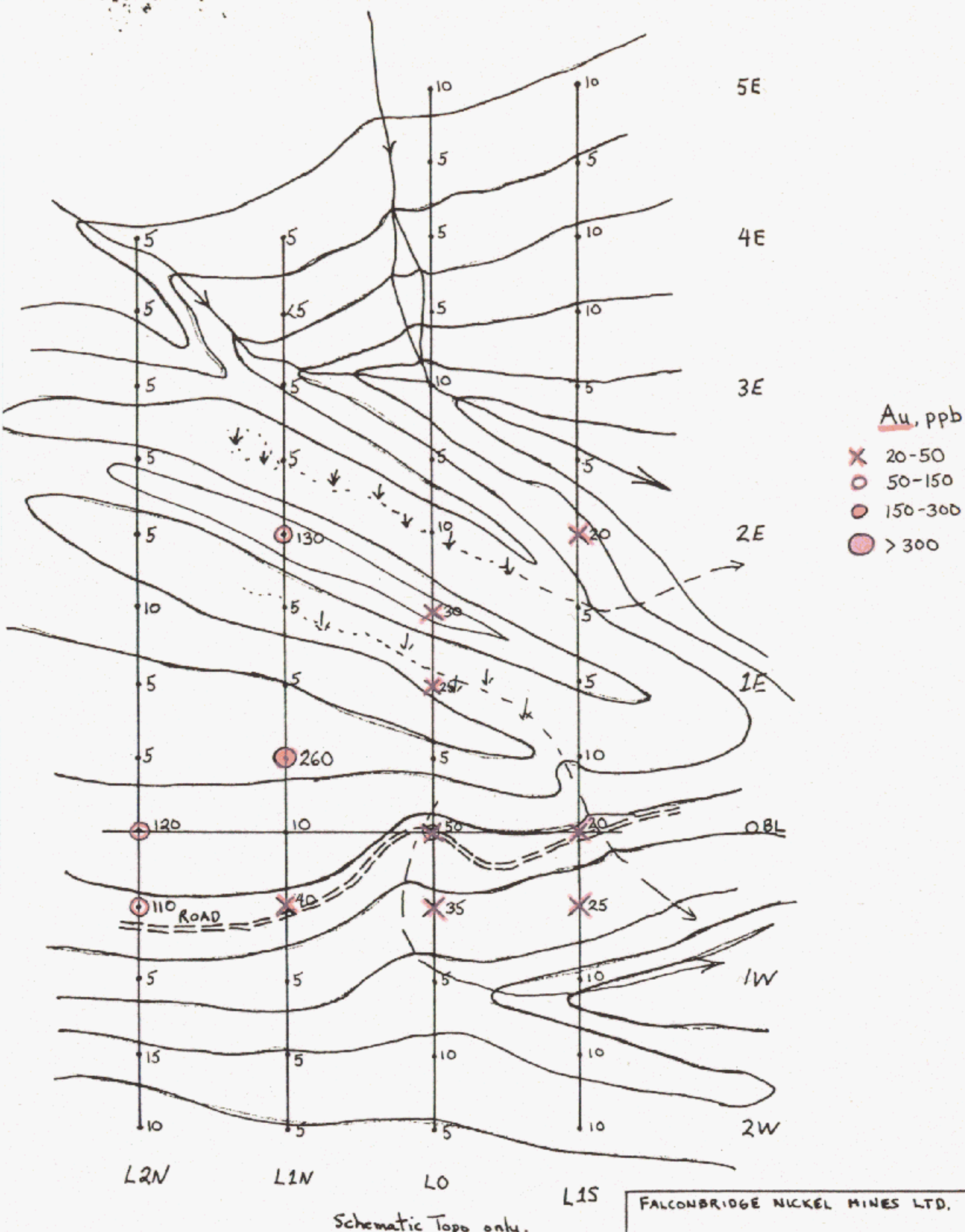
FALCONBRIDGE NICKEL MINES LTD.

ORIENTATION SOIL GEOCHEM. SURVEY.
NORTHERN AREA - BIG MISSOURI RD.
PREMIER MINE - STEWART B.C.

Based on fieldwork by S.Z, T.C Sept 1981.

Scale: 1:1200 (1" = 100 ft.).

FIG. 27



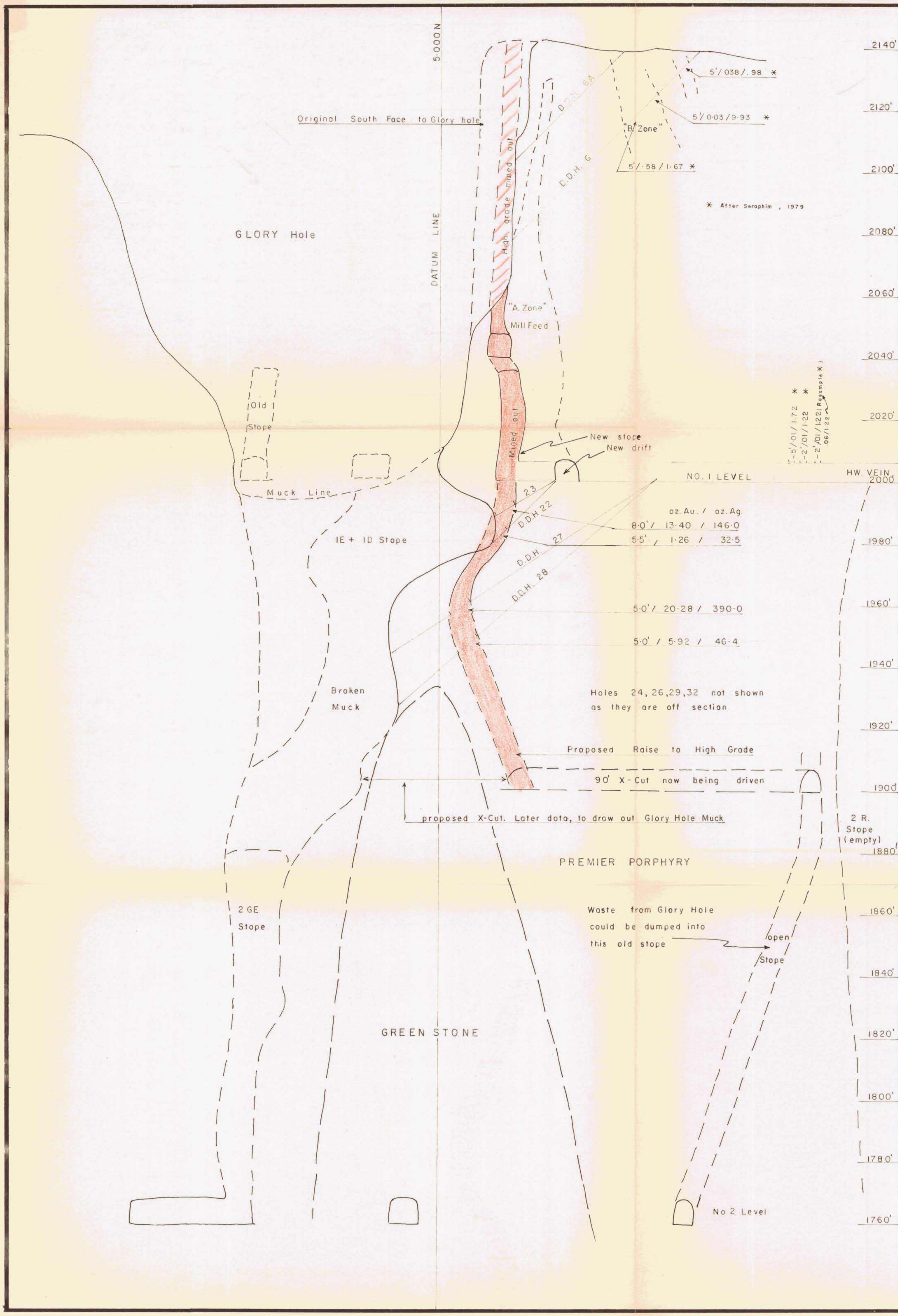
FALCONBRIDGE NICKEL MINES LTD.

ORIENTATION SOIL GEOCHEM. SURVEY.
NORTHERN AREA - BIG MISSOURI RD.
PREMIER MINE - STEWART B.C.

Based on fieldwork by S.Z, T.C Sept 1981.

Scale: 1:1200 (1" = 100 ft.).

FIG. 28

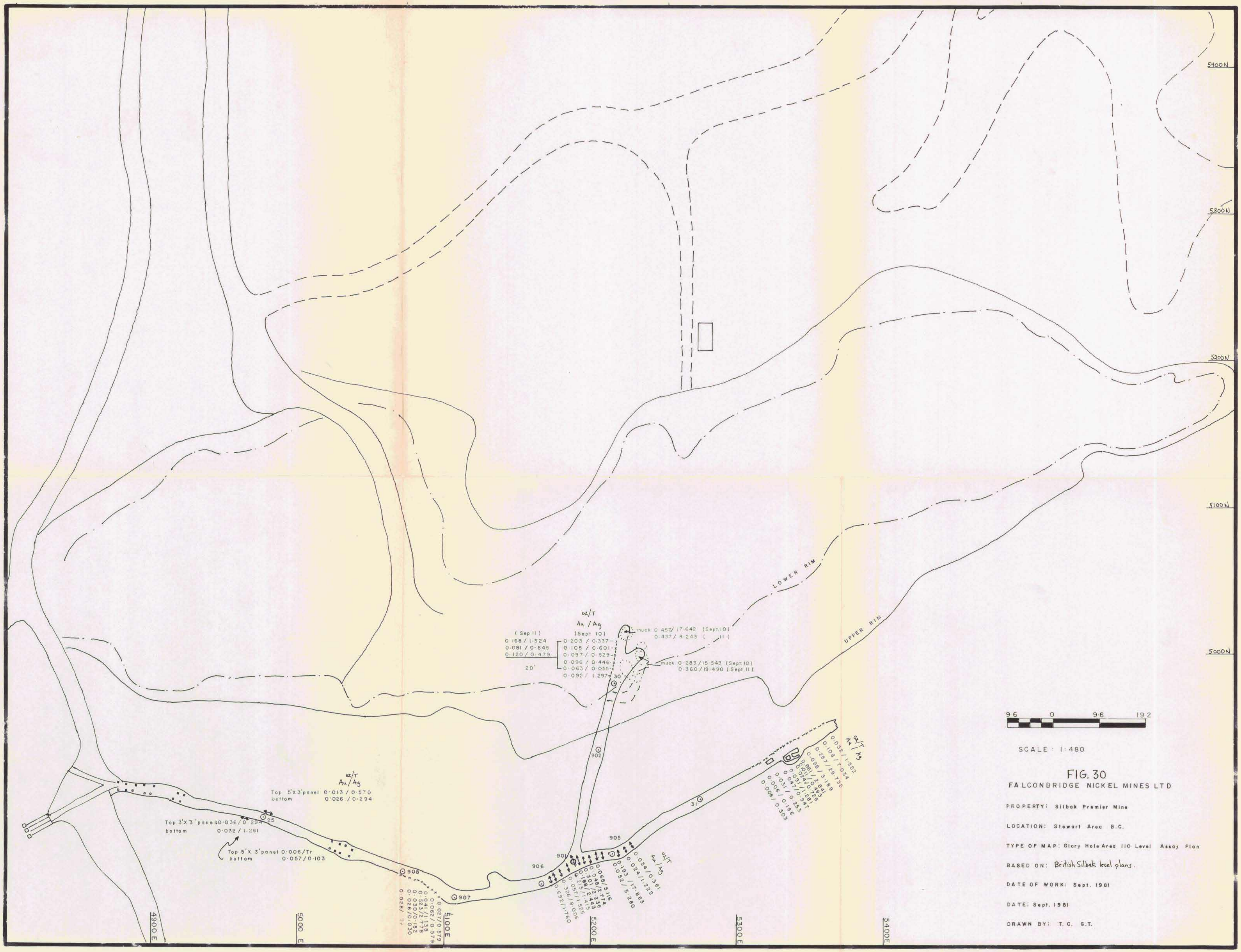


MAP REF. NO.:
N.T.S.:

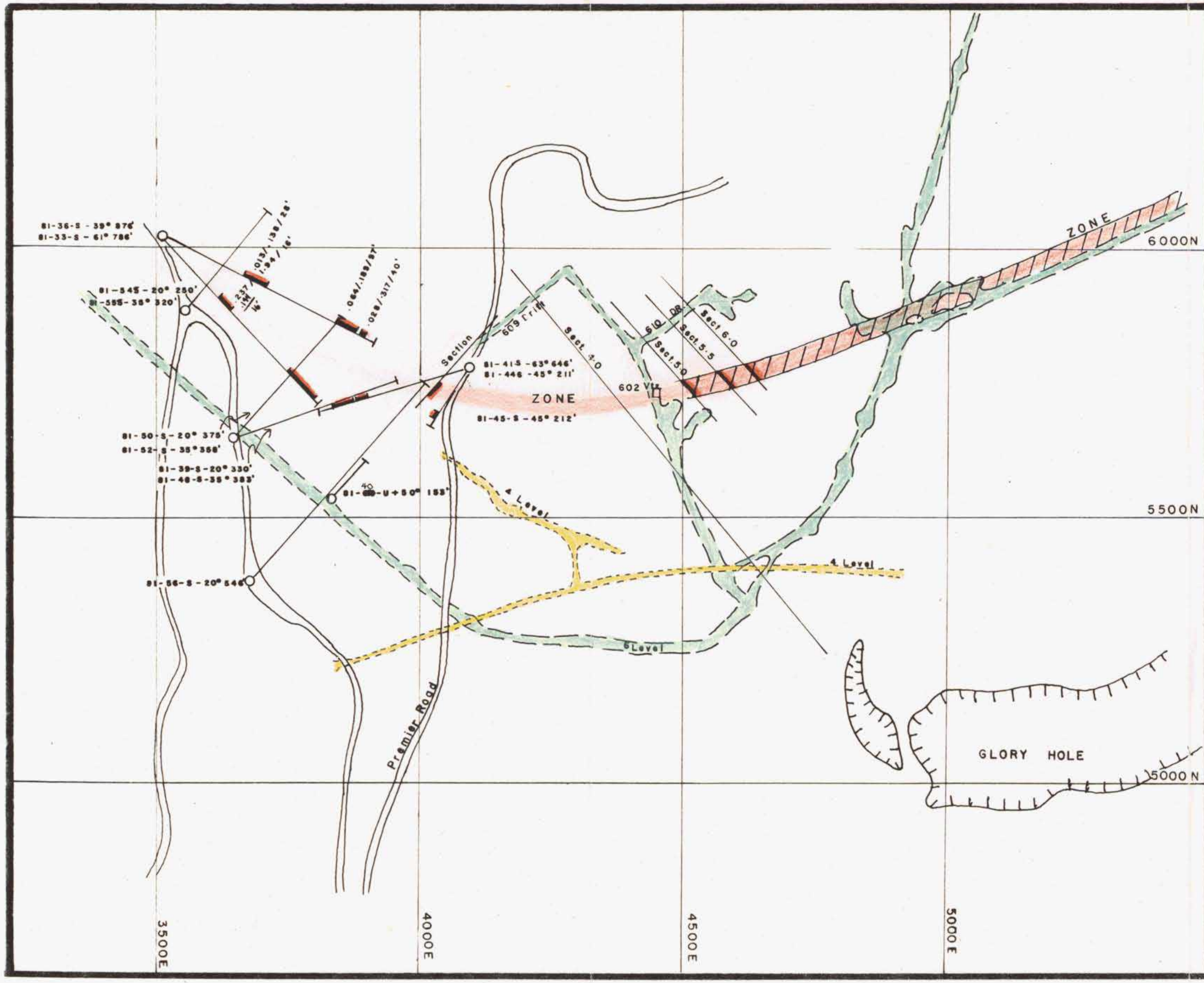
4.8 0 4.8 9.6 14.4 Metres

SCALE: 1:240

FALCONBRIDGE NICKEL MINES LIMITED		
PROPERTY: Silbak Premier Mine		
LOCATION: Stewart Area B.C.		
TYPE OF MAP: Section thru High Grade (Looking East) Geology by Means Revised Aug. 12 & Oct. 22 1961		
WORKING PLACE:		
BASED ON:		
DATE OF WORK: 1961	MAP REF. NO.:	FIG. NO.:
DRAWN BY: T.C. G.T		29
DATE: Sept. 1981	N.T.S. NO.: 104-B-1	



5400N
5300N
5200N
5100N
5000N
4900 E
5000 E
5100E
5200 E
5300 E
5400E
LOWER RIM
UPPER RIM
oz/T
Au / Ag
(Sep 11)
0·168 / 1·324
0·081 / 0·845
0·120 / 0·479
20'
(Sept 10)
0·203 / 0·337
0·105 / 0·601
0·097 / 0·529
0·096 / 0·446
0·063 / 0·055
0·092 / 1·297
30'
muck 0·457/ 17·642 (Sept.10)
0·437 / 8·243 (11)
muck 0·283 / 15·543 (Sept.10)
0·360 / 19·490 (Sept 11)
902
oz/T
Au / Ag
Top 5'X 3' panel 0·013 / 0·570
bottom 0·026 / 0·294
25
Top 3'X 3' panel 0·036 / 0·294
bottom 0·032 / 1·261
Top 5'X 3' panel 0·006 / Tr
bottom 0·057 / 0·103
908
907
0·027/0·579
0·062/0·579
0·041/1·138
0·523/2·778
0·030/0·182
0·026/0·030
0·028/ Tr
906
901
905
0·068/5·116
0·048/2·774
0·301/2·236
0·188/2·443
0·215/1·415
0·057/1·525
0·326/8·006
0·692/1·760
oz/T
Au / Ag
0·034/0·361
0·024/1·222
0·193/17·863
0·052/5·280
31
oz/T
Au / Ag
0·032/1·322
0·108/7·034
0·257/29·732
0·098/3·189
0·061/2·841
0·011/0·493
0·024/0·726
0·091/1·281
0·047/0·947
0·031/0·253
0·006/0·186
0·008/0·303
9·6 0 9·6 19·2
SCALE : 1:480
FIG. 30
FALCONBRIDGE NICKEL MINES LTD
PROPERTY: Silbak Premier Mine
LOCATION: Stewart Area B.C.
TYPE OF MAP: Glory Hole Area 110 Level Assay Plan
BASED ON: British Silbak level plans.
DATE OF WORK: Sept. 1981
DATE: Sept. 1981
DRAWN BY: T. C. G.T.



SCALE: 1:2·400

FALCONBRIDGE NICKEL MINES LIMITED

PROPERTY:

Silbak Premier Mine

LOCATION:

Stewart Area B.C.

TYPE OF MAP:

Northwest Extension of Premier zone
Location of Surface D.D. Holes and Underground
Sections, 6 th. Level Workings, 4th. Level portion

WORKING PLACE:

BASED ON:

DATE OF WORK:	MAP REF. NO.:	FIG. NO.:
DRAWN BY: T. C. G.T.		31
DATE: Sept. 1981	N.T.S. NO.: 104-B-1	

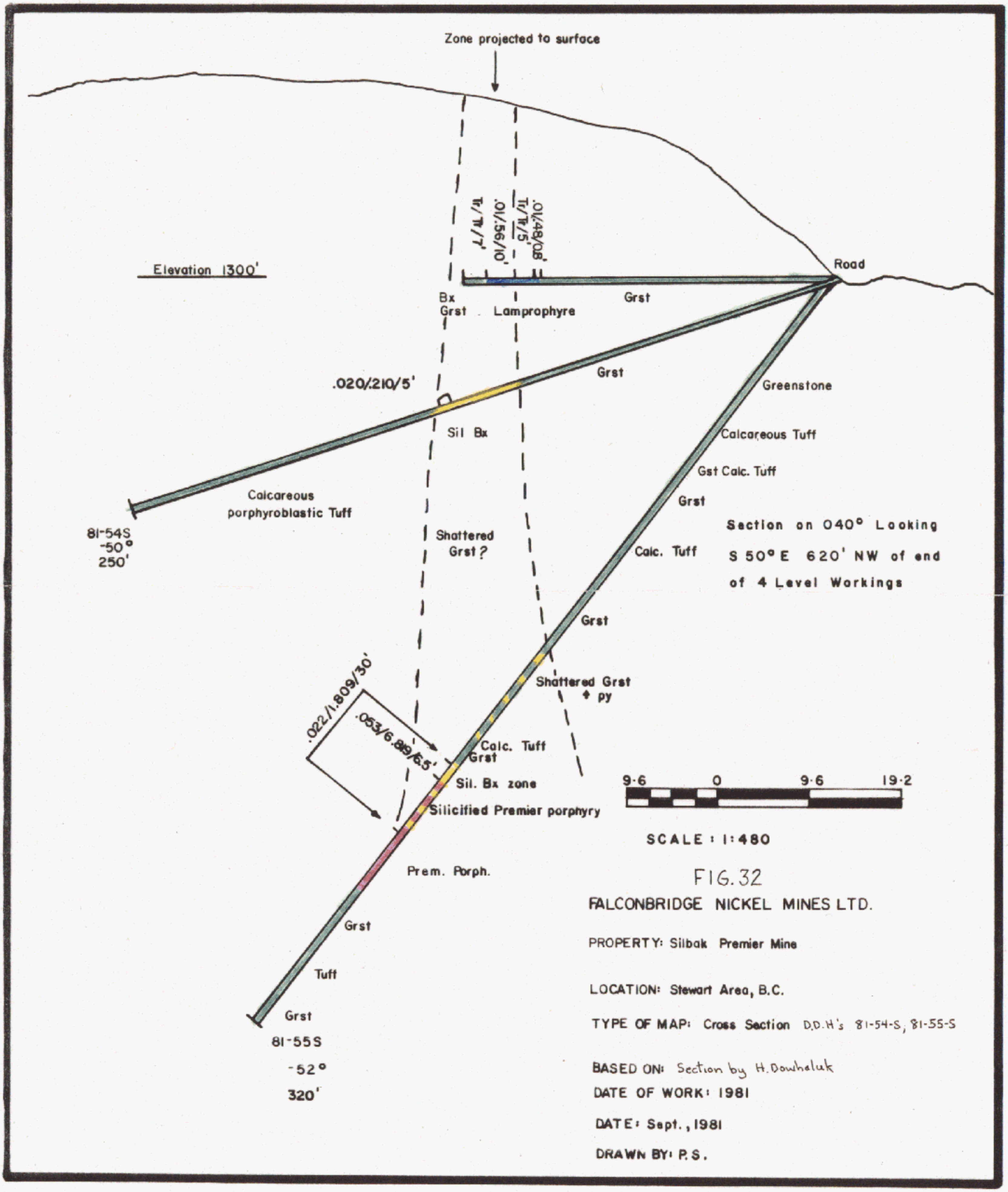


FIG. 32

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: Silbak Premier Mine

LOCATION: Stewart Area, B.C.

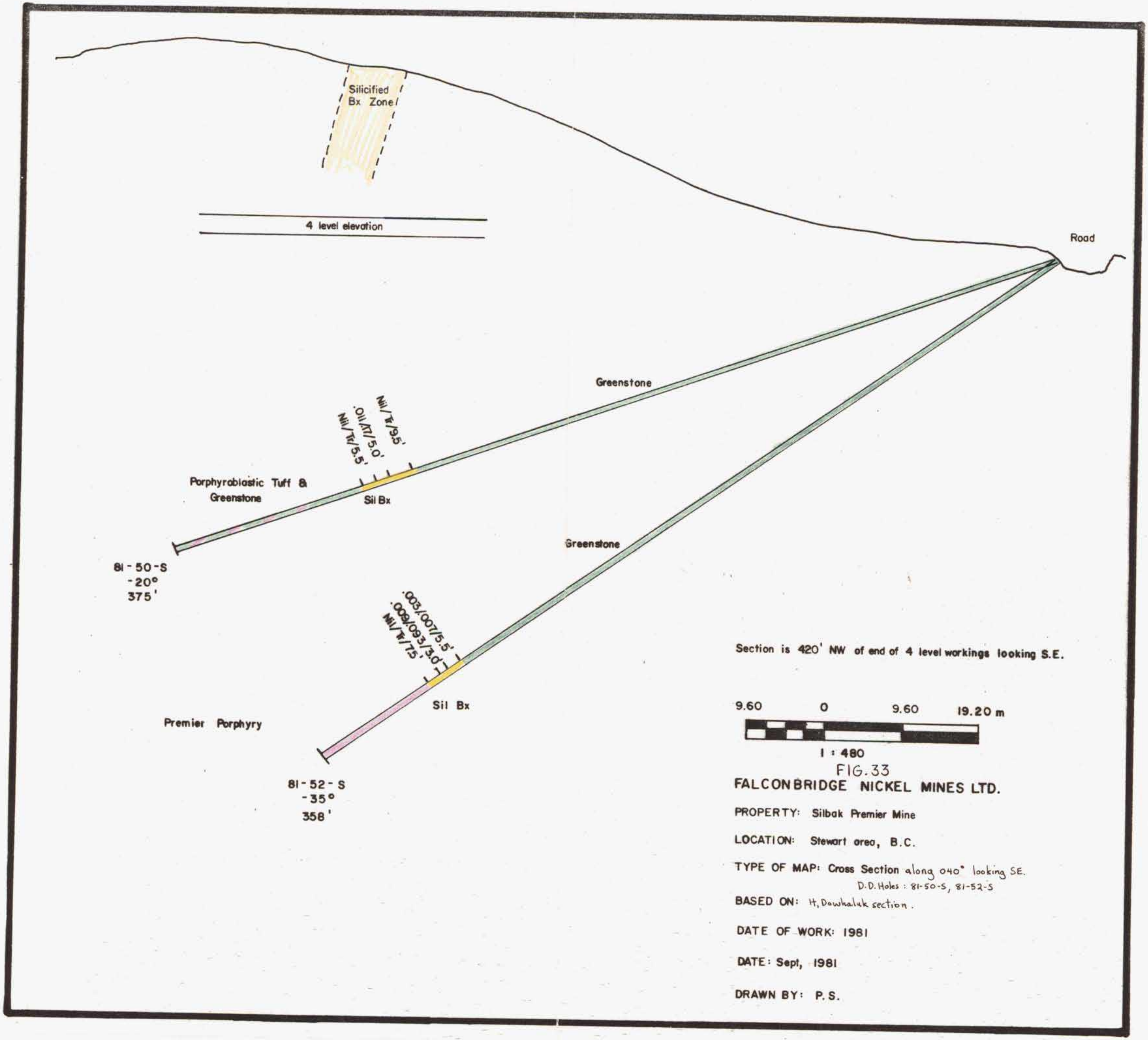
TYPE OF MAP: Cross Section D.D.H's 81-54-S, 81-55-S

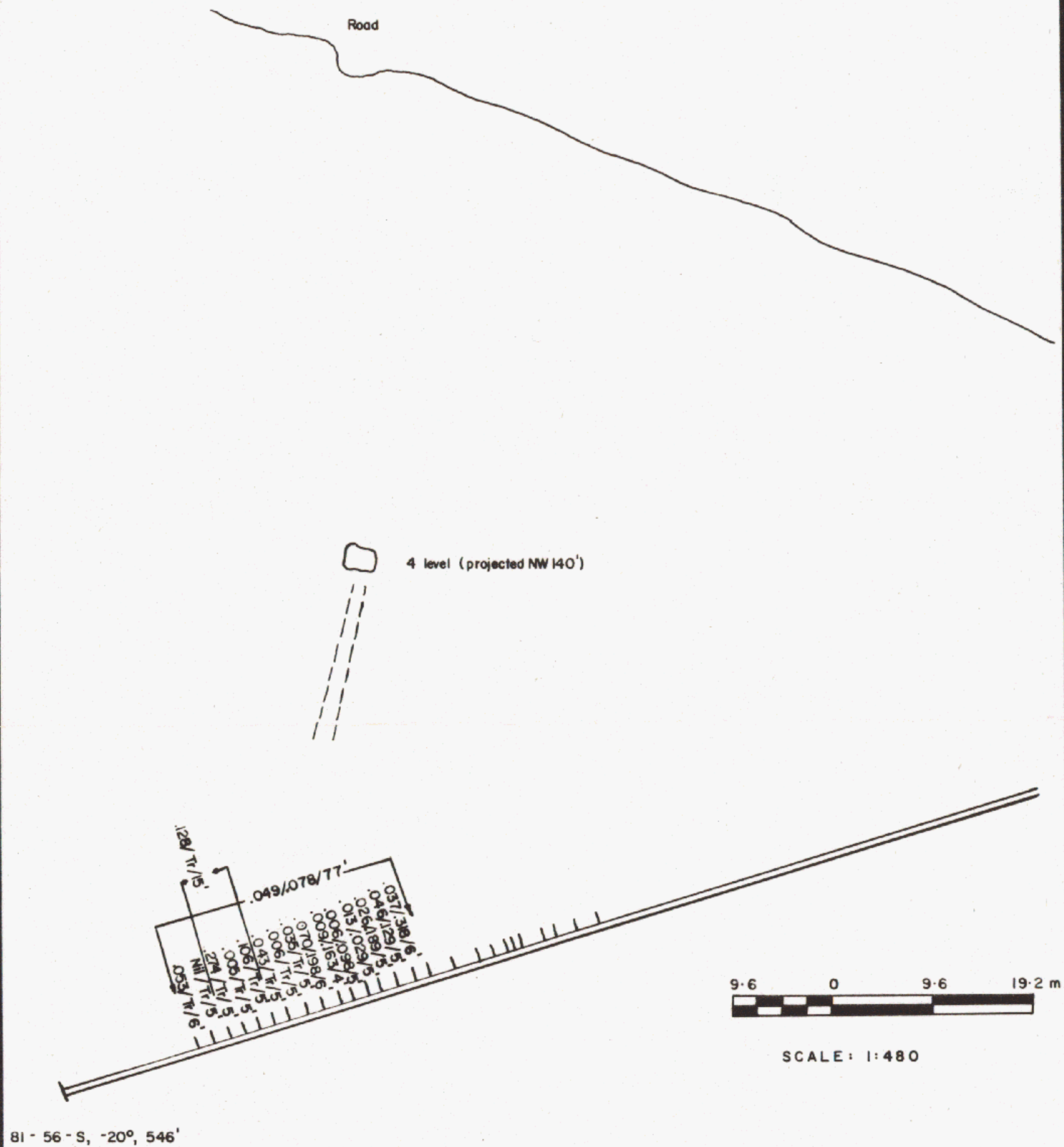
BASED ON: Section by H. Dowhaluk

DATE OF WORK: 1981

DATE: Sept., 1981

DRAWN BY: P.S.


Silicified
Bx Zone
4 level elevation
Road
Greenstone
Nil/Tr/9.5'
.011/.17/5.0'
Nil/Tr/5.5'
Porphyroblastic Tuff &
Greenstone
Sil Bx
81-50-S
-20°
375'
Greenstone
.003/.007/5.5'
.009/.093/3.0'
Nil/Tr/7.5'
Sil Bx
Premier Porphyry
81-52-S
-35°
358'
Section is 420' NW of end of 4 level workings looking S.E.
9.60
0
9.60
19.20 m
1 : 480
FIG. 33
FALCONBRIDGE NICKEL MINES LTD.
PROPERTY: Silbak Premier Mine
LOCATION: Stewart area, B.C.
TYPE OF MAP: Cross Section along 040° looking SE.
D.D. Holes : 81-50-S, 81-52-S
BASED ON: H. Dowhaluk section.
DATE OF WORK: 1981
DATE: Sept, 1981
DRAWN BY: P.S.



Section on 040°
Looking S 50° E
140' NW of 4 Level
Working

FIG. 34

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: Silbak Premier Mine

LOCATION: Stewart area, B.C.

TYPE OF MAP: Cross Section DDH. 81-56-S

BASED ON: Section by H. Dowhaluk

DATE OF WORK: 1981

DATE: Sept, 1981

DRAWN BY: T.C. P.S.

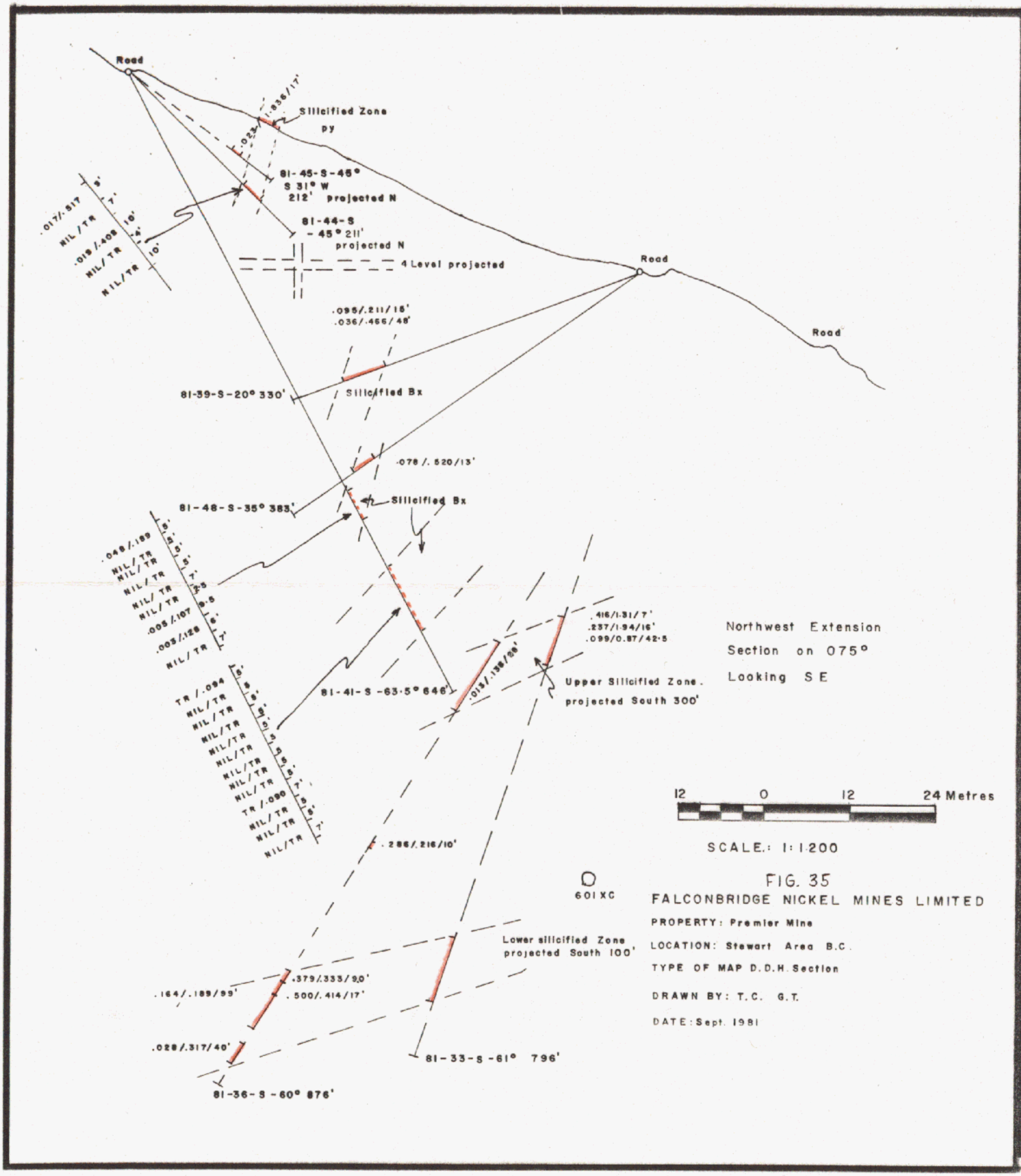


FIG. 35
FALCONBRIDGE NICKEL MINES LIMITED
PROPERTY: Premier Mine
LOCATION: Stewart Area B.C.
TYPE OF MAP D.D.H. Section
DRAWN BY: T.C. G.T.
DATE: Sept. 1981

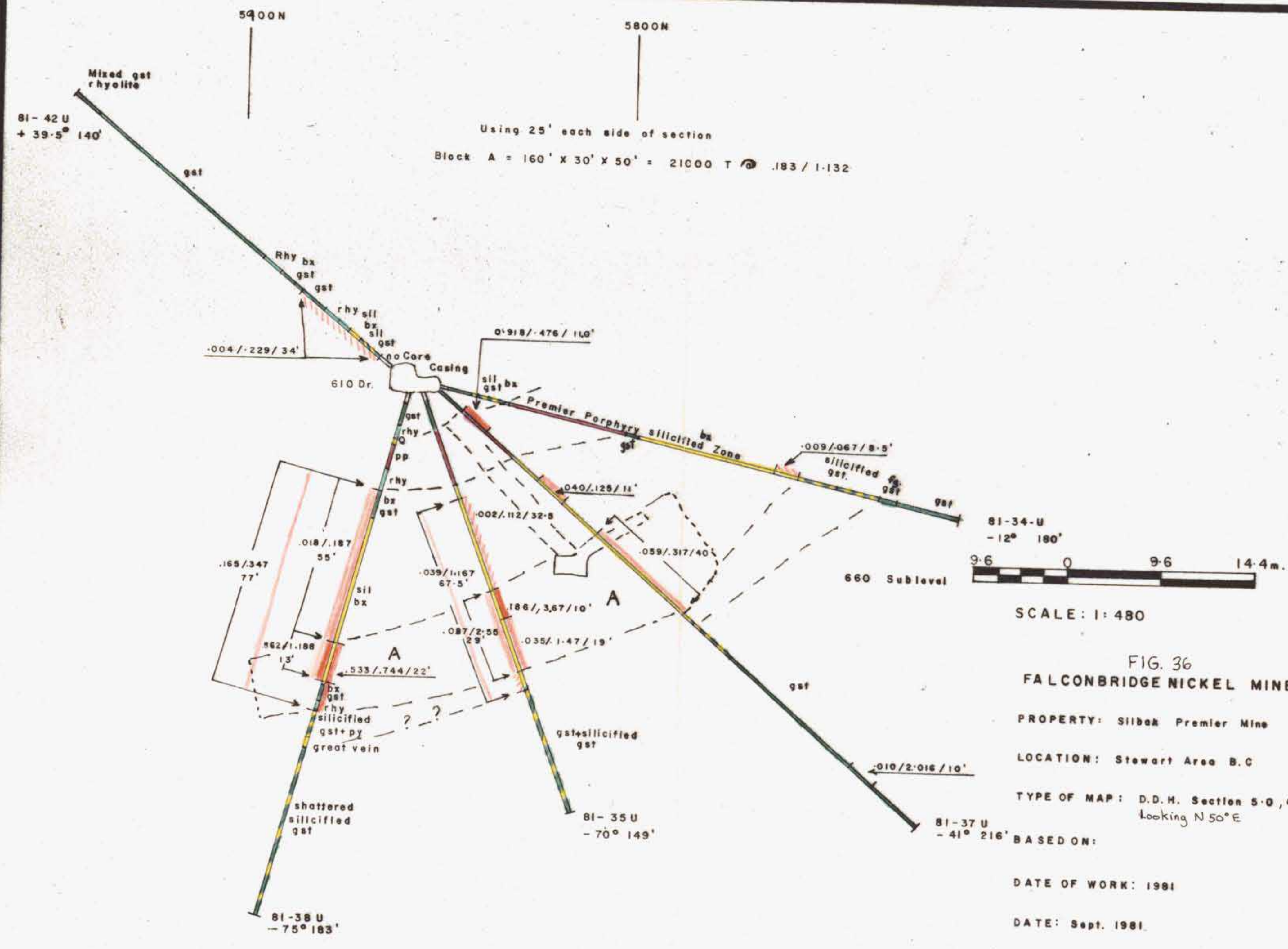


FIG. 36

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: Silbak Premier Mine

LOCATION: Stewart Area B.C

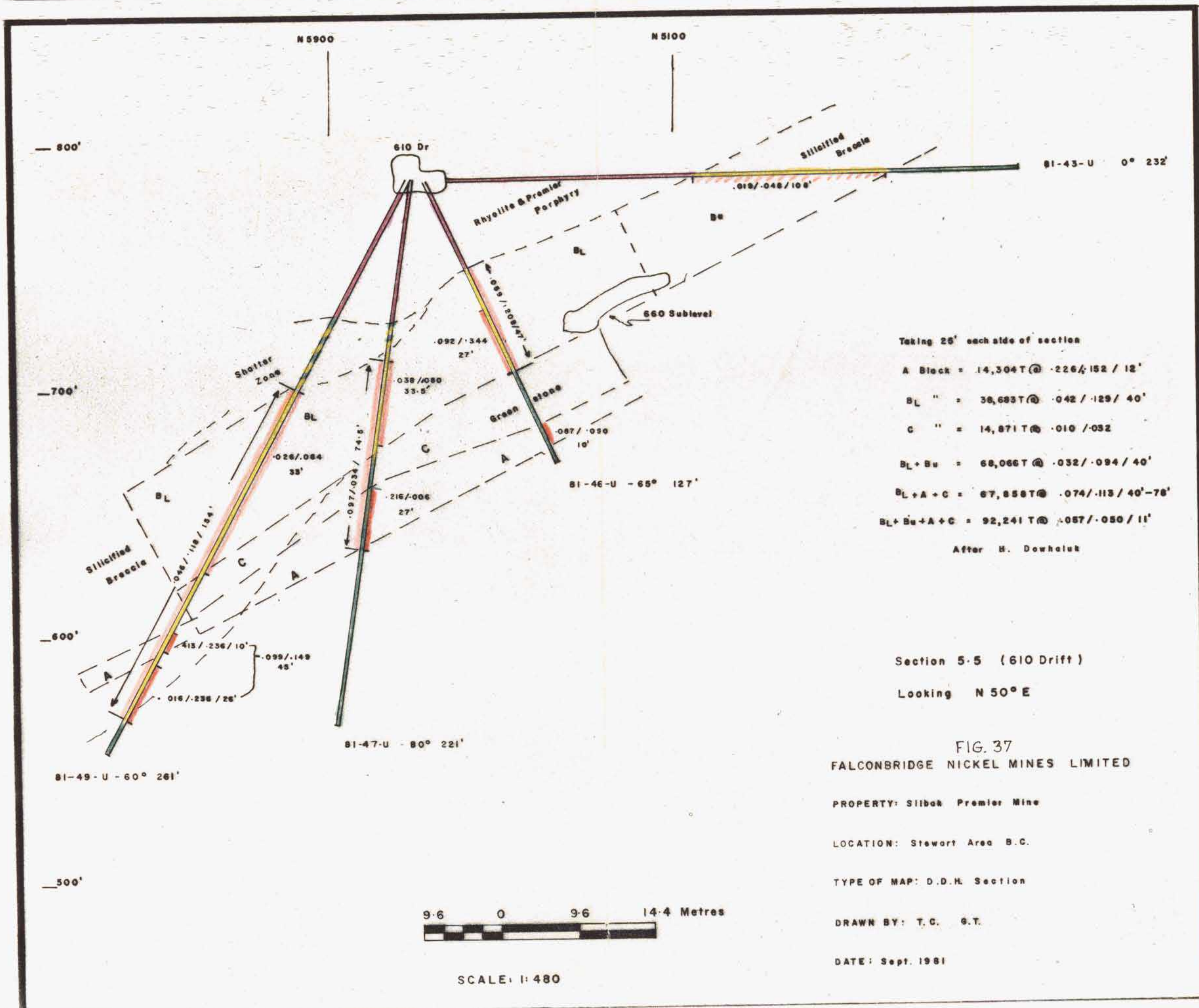
TYPE OF MAP: D.D.H. Section 5.0, 610 Drift Looking N 50° E

BASED ON:

DATE OF WORK: 1981

DATE: Sept. 1981

DRAWN BY: T. C. G. T.



Taking 25' each side of section

A Block = 14,304 T @ .226/.152 / 12'

BL " = 38,683 T @ .042 / .129 / 40'

C " = 14,871 T @ .010 / .032

BL + Bu = 68,066 T @ .032 / .094 / 40'

BL + A + C = 67,858 T @ .074 / .113 / 40'-78'

BL + Bu + A + C = 92,241 T @ .057 / .050 / 11'

After H. Dowhaluk

Section 5.5 (610 Drift)

Looking N 50° E

FIG. 37

FALCONBRIDGE NICKEL MINES LIMITED

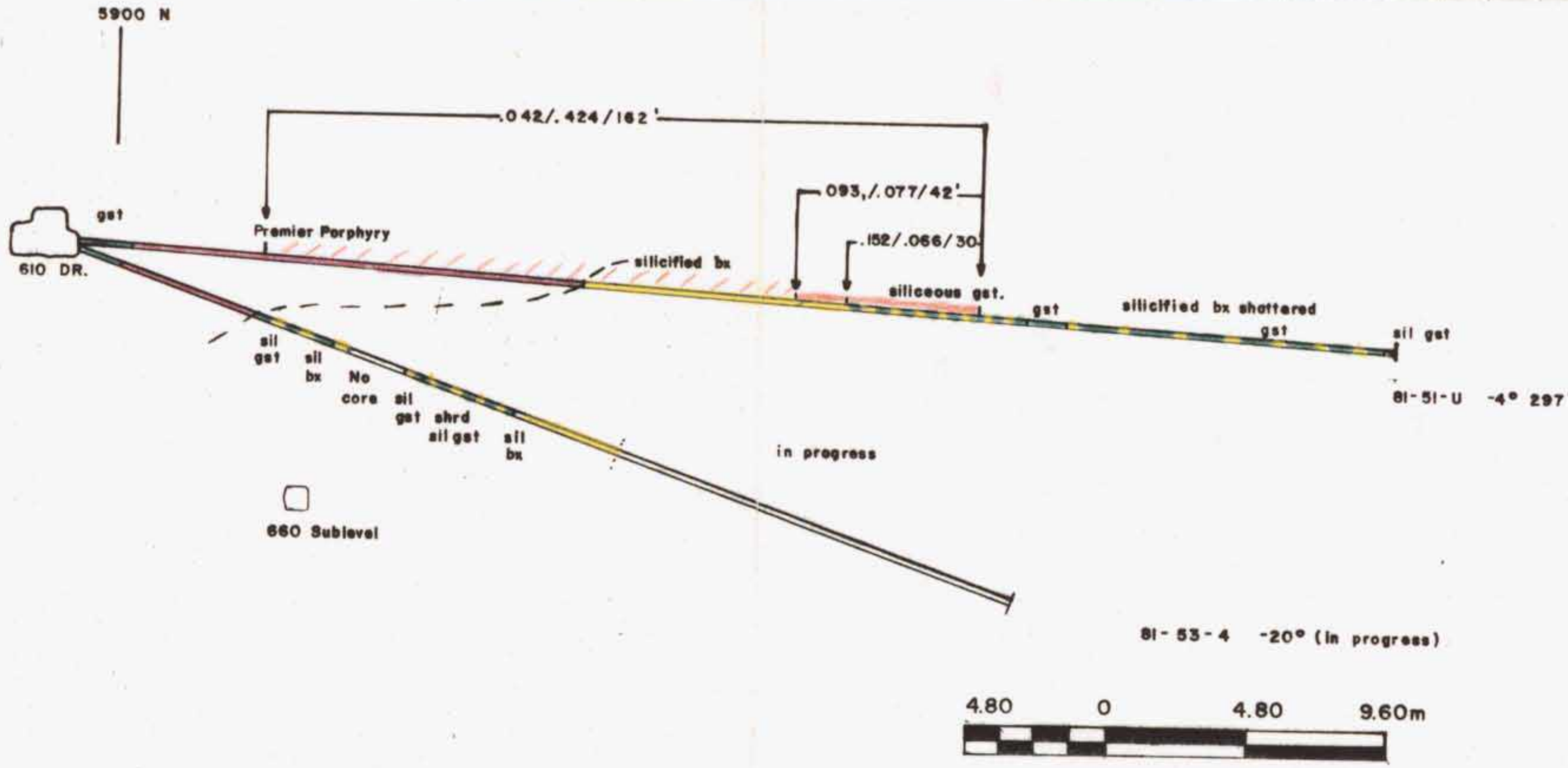
PROPERTY: Silbak Premier Mine

LOCATION: Stewart Area B.C.

TYPE OF MAP: D.D.H. Section

DRAWN BY: T.C. G.T.

DATE: Sept. 1981



SCALE: 1:480

FIG. 38

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: Silbak Premier Mine

LOCATION: Stewart Area, B.C.

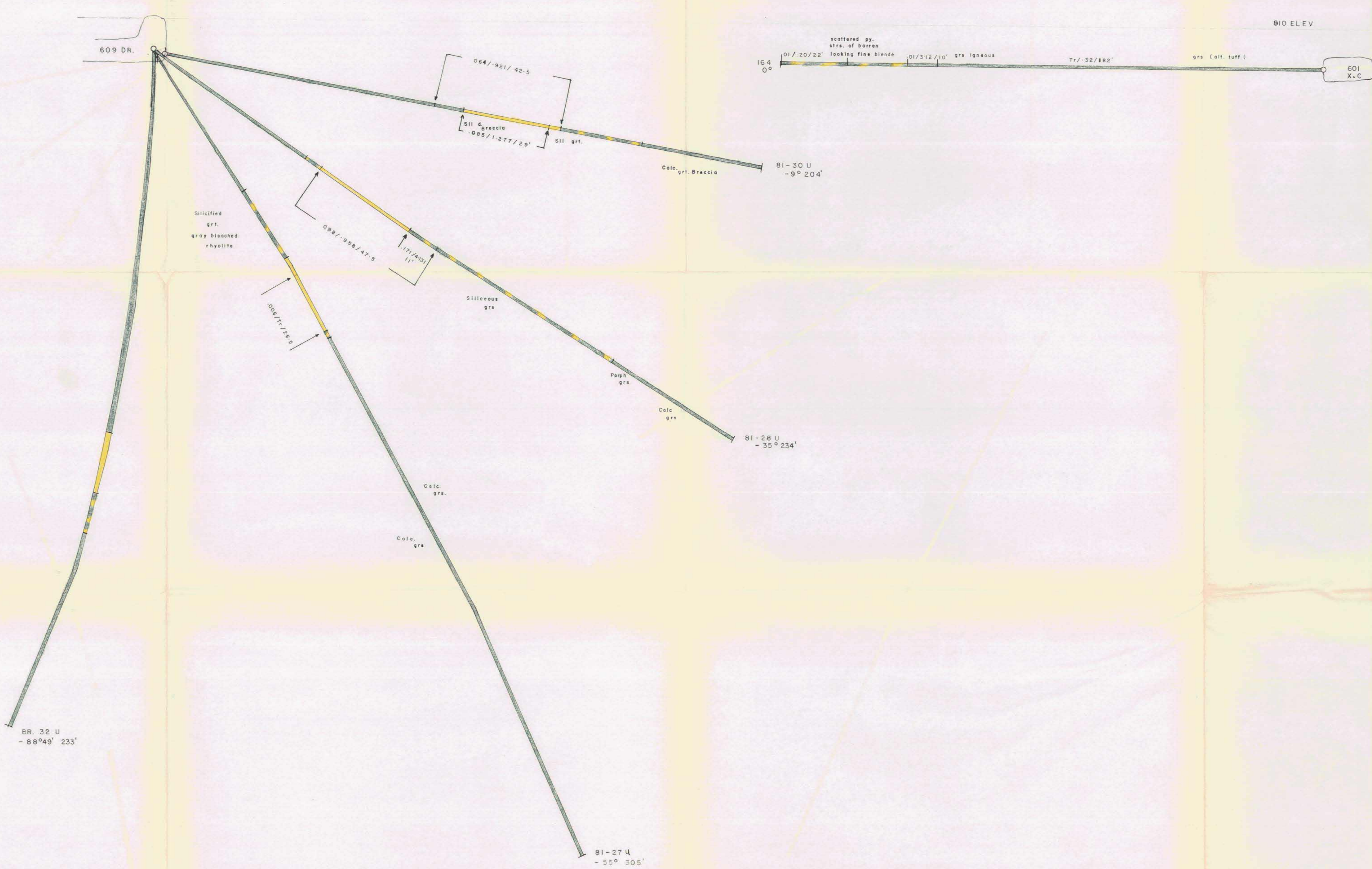
TYPE OF MAP: I Section 6.0 610 Drift Looking N 50°E

BASED ON: Fieldwork by H. Dawhaluk

DATE OF WORK:

DATE: Sept. 1981

DRAWN BY: T.C. P.S.

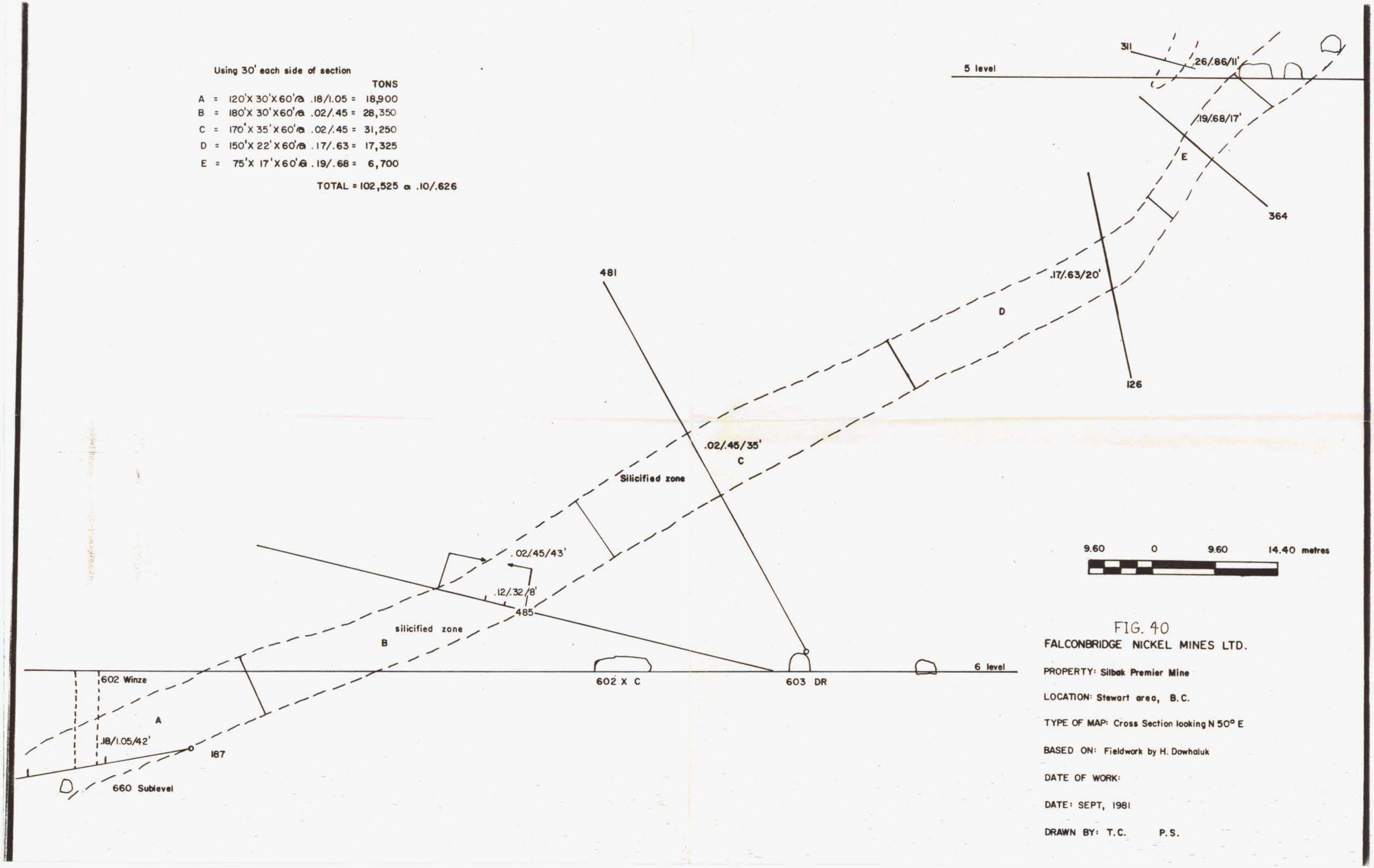


4·80 0 4·80 9·60 14·40 m.

SCALE: 1: 240

MAP REF. NO.:
N.T.S.:

FALCONBRIDGE NICKEL MINES LIMITED		
PROPERTY: Silbak Premier Mine		
LOCATION: Stewart Area B.C.		
TYPE OF MAP: D.D.H. Cross Section		
WORKING PLACE: 609 Drift		
BASED ON:		
DATE OF WORK: 1981	MAP REF. NO.:	FIG. NO.: 39
DRAWN BY: T.C. G.T.		
DATE: Sept. 1981	N.T.S. NO.: 104-B-1	



Using 30' each side of section

		TONS
A	= 120'X 30'X 60' @ .18/1.05 =	18,900
B	= 180'X 30'X 60' @ .02/.45 =	28,350
C	= 170'X 35'X 60' @ .02/.45 =	31,250
D	= 150'X 22'X 60' @ .17/.63 =	17,325
E	= 75'X 17'X 60' @ .19/.68 =	6,700

TOTAL = 102,525 @ .10/.626

FIG. 40

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: Silbak Premier Mine

LOCATION: Stewart area, B.C.

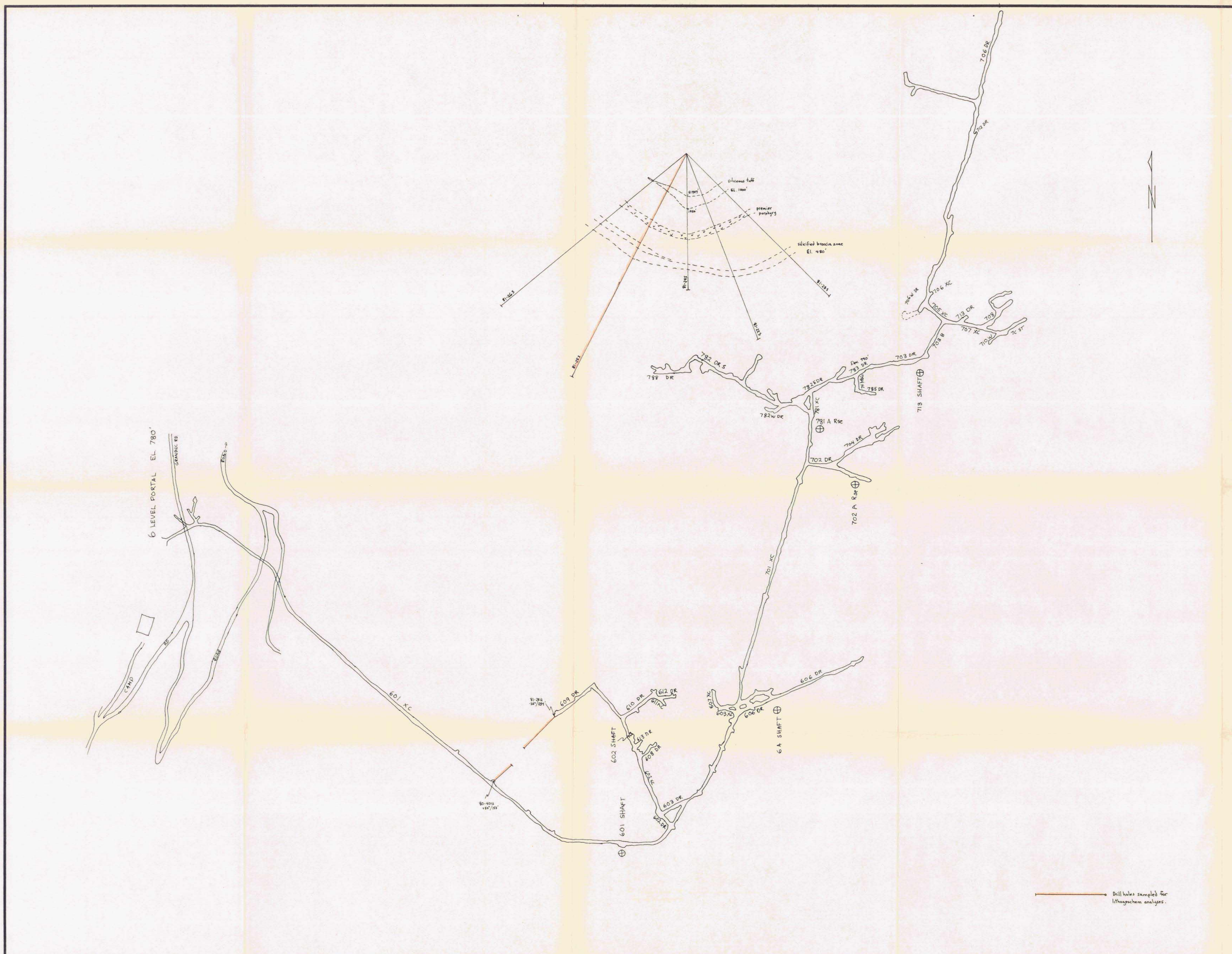
TYPE OF MAP: Cross Section looking N 50° E

BASED ON: Fieldwork by H. Dowhaluk

DATE OF WORK:

DATE: SEPT, 1981

DRAWN BY: T.C. P.S.



SCALE: 1 INCH TO 200 ft. (approx.)

FALCONBRIDGE NICKEL MINES LIMITED		
PROPERTY: BRITISH SILBAK PREMIER MINES		
LOCATION: STEWART BC.		
TYPE OF MAP: UNCONTROLLED COPY OF 6 Level Plan and Surface Drill-Holes of Derry, Michener & Booth 1980-81 program		
WORKING PLACE:		
BASED ON: Xerox copy		
DATE OF WORK: 3/9/81	MAP REF. NO.:	FIG. NO.: 41
DRAWN BY: T.C.		
DATE:	N.T.S. NO.:	

MAP REF. NO.:
N.T.S.:

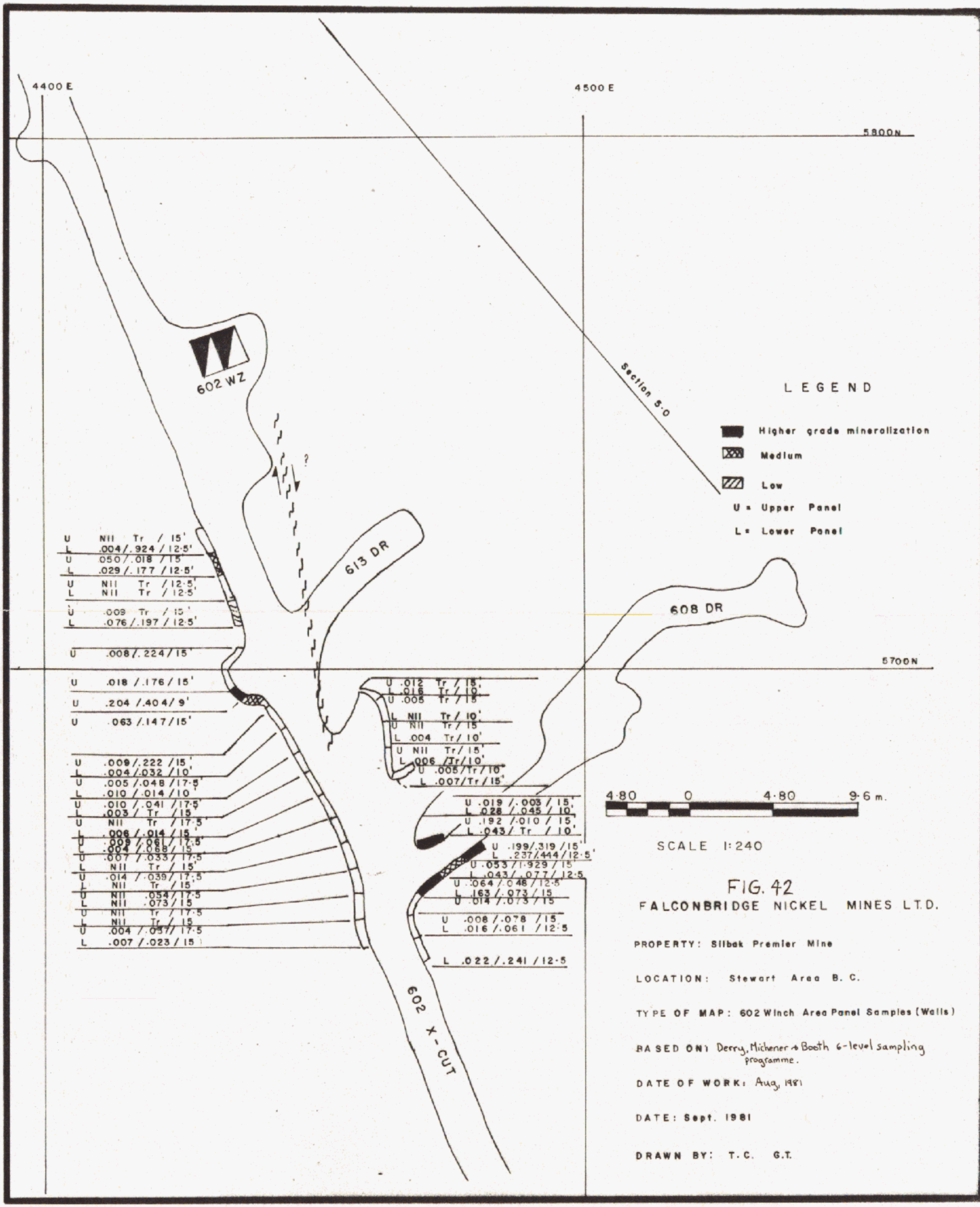


FIG. 42

FALCONBRIDGE NICKEL MINES LTD.

PROPERTY: Silbak Premier Mine

LOCATION: Stewart Area B. C.

TYPE OF MAP: 602 Winch Area Panel Samples (Walls)

BASED ON: Derry, Michener + Booth 6-level sampling programme.

DATE OF WORK: Aug. 1981

DATE: Sept. 1981

DRAWN BY: T.C. G.T.