

REPORT ON GEOLOGICAL, GEOCHEMICAL

AND GEOPHYSICAL SURVEYS

DONE ON

COOPER CREEK PROPERTY

(PERTH - PYRITE. CROWN GRANTS

AND GOAT 1 TO 3 CLAIMS)

NTS: 82K/3E

Longitude: $117^{\circ} 10' W$

Latitude: $50^{\circ} 09' 30'' N$

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

8019
NO.

PART 383

IN THE SLOCAN MINING DISTRICT

IN THE PROVINCE OF BRITISH COLUMBIA

NEAR LARDEAU, B.C.

OWNER AND OPERATOR: AQUITAINE COMPNAY OF CANADA LTD.

AUTHOR: H. SALAT

1980-02-14

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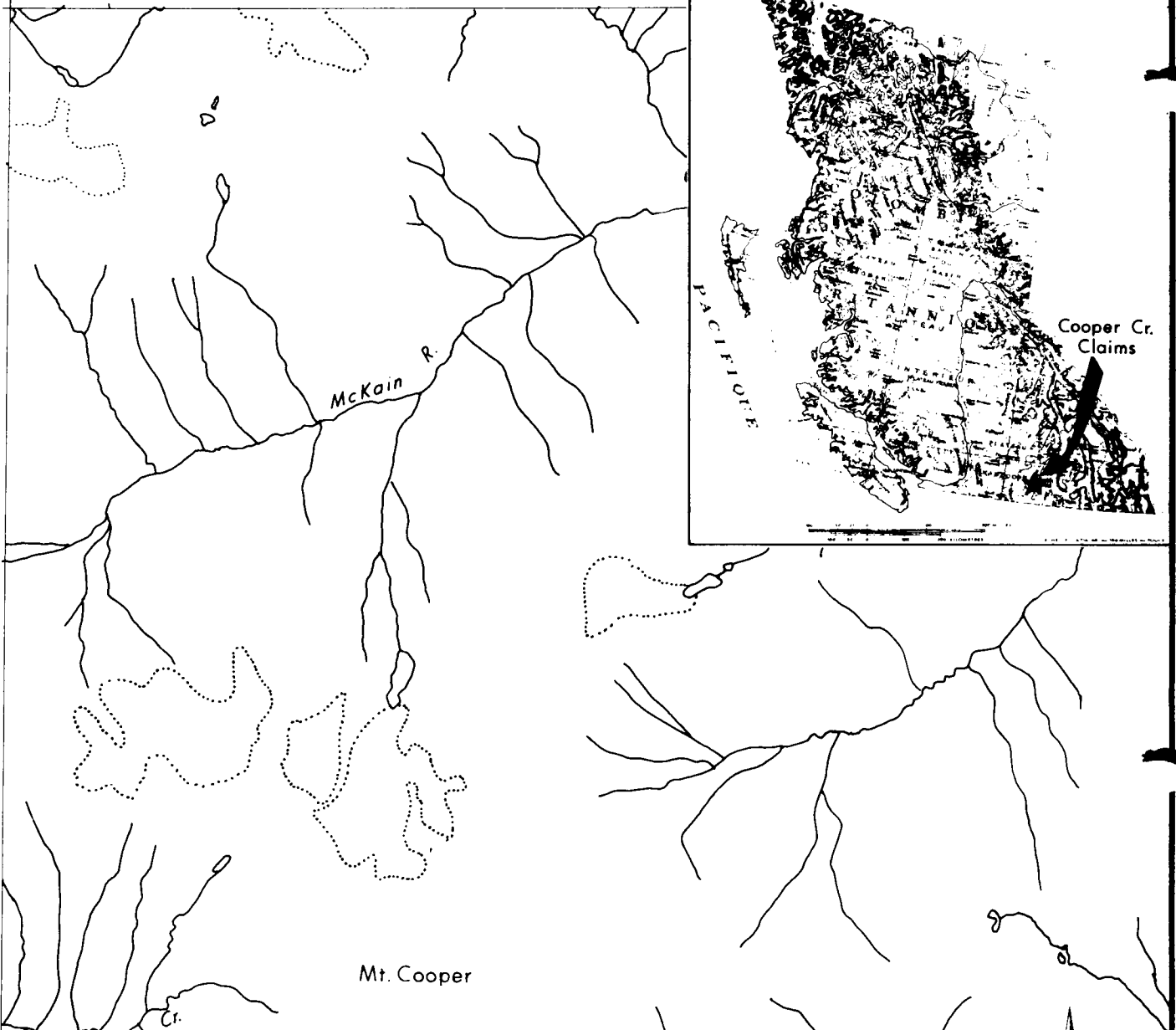
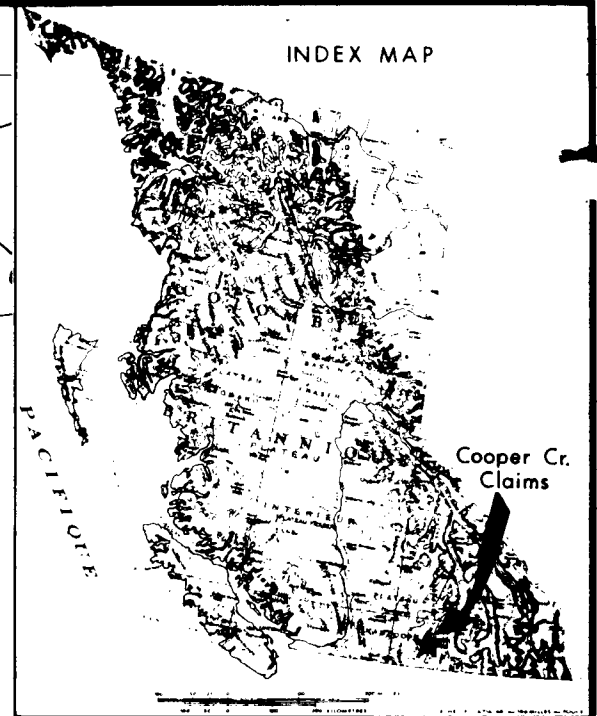
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SUMMARY

On the Pyrite and Perth Crown Grants and adjacent Goat 1 to 3 Claims, Aquitaine Company of Canada has conducted, in the course of the 1979 field season, investigation to explore the geology and extension of the original Cu-Zn-Pb-Ag "vein" showing outcropping on the side of a small canyon, called here Adit Creek.

Due to the roughness of the terrain, zones of avalanches and vegetation outgrowth, progress has been extremely slow to complete line-cutting, soil geochemistry and Mag-EM geophysics. Although the results were not up to expectations, the geological environment of Permo-Triassic volcanic regimes, proximity to an intrusive granitic stock related to the Cretaceous Kuskanax Batholith plus a series of Cu and An soil geochemical anomalies, suggest the property still has potential and should be drilled.

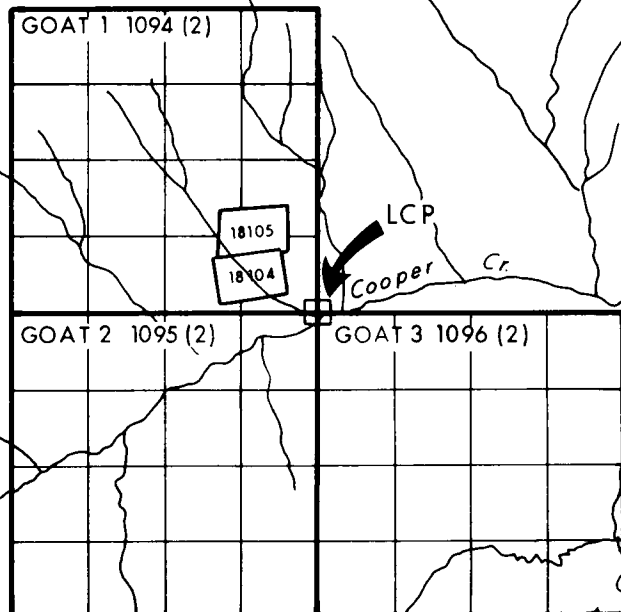
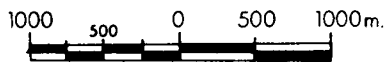
117° 15'
50° 15'



Mt. Cooper

Russland Cr.

Mt. Stubbs



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LOCATION MAP
COOPER CREEK CLAIMS
NTS 82K/3E

Fig 1

Date: Feb. 1980 Interp.: H.S. Scale: 1:50,000

I INTRODUCTION

The Cooper Creek property is composed of two reverted Crown grants and three claims containing 48 units. These record numbers are as follows:

PERTH C.G.	Record No. 18105
PYRITE C.G.	Record No. 18104
GOAT 1 (16 units)	Record No. 1094
GOAT 2 (16 units)	Record No. 1095
GOAT 3 (16 units)	Record No. 1096

Originally the Crown grants PERTH and PYRITE belonged to Mr. Otto and Mr. Ottokar Janout of Whiterock, B.C. and were optioned in 1978 to Aquitaine Company of Canada which successively staked the GOAT 1 to 3 claims to broaden the area surrounding the Crown grants and its mineralized occurrence.

The Perth and Pyrite and old claims staked and worked in the 1905 - 1910 era over a rusty gossaneous cliff. Prospection discovered there some massive bands, very rich in chalcopyrite, spalerite and a bit of galena and two adits were driven by hand through the wall of the cliff at 15 metre intervals. The first representation work reported by the B.C. Department of Mines dates back to 1907 when 6 men spent five months on the property (BCDM report 1907, p. 96 and GSC Summary Report 1908, p. 86-87). The lower adit went for 25 metres but was stopped without intersecting downdip mineralization; the upper one, though, cut through 2 metres (6 feet) of massive sulfide and stopped 4 metres from the entrance. Behind, on the treed slope, as the mineralized zone was again exposed, two small trenches were dug, many old handsteels and one anvil were found in one of them.

Past history of this prospect is little known. The more recent report on the property is provided by Canadian Superior Exploration Ltd. who spent a few days in 1976 carrying out some very inconclusive work, and dropped the claims. In light of the geology and occurrences, much further work was warranted to appraise the property.

II LOCATION, ACCESS, PHYSIOGRAPHY

The mineral occurrence sits on the northern side of Cooper Creek on the edge of a canyon cut by a small tributary flowing right out off the steep face of Mount Cooper. The two Crown grants that cover the showing are 15 km straight west of Lardeau, on Kootenay Lake; Cooper Creek itself flows eastward and joins the Duncan River 3.5 km north of the tip of Kootenay Lake (Air photos B.C. 5386, No. 157-158).

The closest road to the property is a forestry gravel road winding up on the side of Meadow Mountain, 10 km away. Otherwise, no other access is possible except for use of a helicopter which can land only by Cooper Creek on a gravel bar. Although the old timers who did work on the showing must have come up along a pack trail with horses, there is no evidence left of its existence.

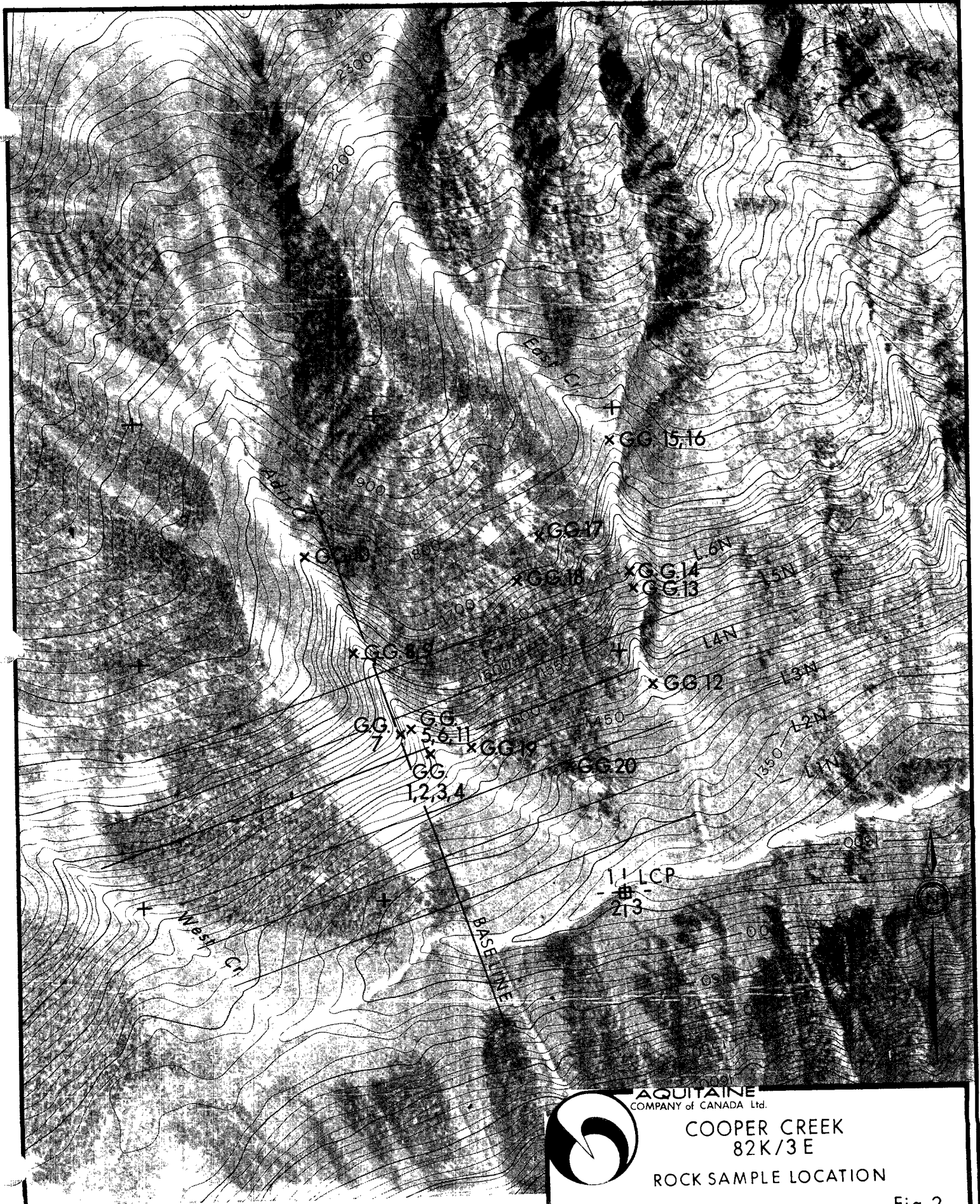
The topography is extremely rugged and typical of the Selkirk Mountains with ice covered peaks over 3000 metres in elevation (Mt. Cooper is 3089 m asl), cut by deep narrow valleys occupied by torrentuous stream. However, spruce and cedar timber, some of it being of prime nature, climbs up well above the 2000 metre mark, but unfortunately the forest is often interrupted by wide snow avalanche zones with fallen trees and new regrowth of shrubs and willows. Most of these avalanche strips are almost impassable to traversing.

Along the side of Cooper Creek, very little fauna was observed besides some mountain goats on the higher cliffs, one grizzly bear and a few rabbits.

III GEOLOGY

a) General Geology

According to GSC map of Lardeau, West half (GSC Open File 288, 1975) by J.O. Wheeler and P.B. Read, Cooper Creek flows through Permo-Triassic volcanic rocks assigned to the Kaslo Group; they consist of "meta-andesite



AQUITAINE
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COOPER CREEK
82K/3 E
ROCK SAMPLE LOCATION

Fig. 2

DATE May '80

SCALE 1:10,000

100m

flows, tuff, breccia; minor meta-dacite, rare tuffaceous phyllite". These massive volcanic flows, beautifully exemplified at the headwater of the creek just west and parallel to South Cooper Creek by green pillowed andesite with minor pyroclastic, contrast with the brown weathering well layered underlying sediment of the Milford Group to the east.

To the west, the volcanics are overlapped by the thick pile of black pyritic shale of the Slocan group well known for its numerous Pb-Ag mines and prospects. All the assemblages are intruded by small plugs related to the Cretaceous McKian Creek stock, a satellite of the huge Kuskanex batholith to the north.




b) Property Geology

Due to difficult traversing of the rugged cliffs and across forest and bush, the detailed survey was done along the creeks by Mr. G. Garratt of Garratt Geoservices, Calgary, (see attached report) and by the author also along creek sides and canyon and along grid lines.

A thin section study helped to sort out the peculiar facies encountered within the volcano-sedimentary suite. The rocks can be arranged in two distinct sequences as indicated on the geological map. One is composed of chloritic quartz schists more or less massive or schistose with some feldspars and plagioclase; they are little differentiated and are thought to represent andesitic rocks.

On the other hand, the more acidic assemblage includes mainly rhyolitic tuff, chert, quartzose schist, calcareous pelites and tuffaceous siltstone. These tuffs and siltstone make up most of the property, especially the western portion but also include many short interlayering episodes of chloritic meta-andesite, usually close to the mineralized showing, which appears to be near the base of the sequence. Away, toward top, the rocks are more and more cherty looking.



-  LEUCO GRANITES AND APLITE DYKES
-  META RHYOLITE, TUFFS SEDIMENTS
-  META ANDESITE AND TUFFS



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COOPER CREEK
82K/3 E
GEOLOGY

Fig 3

DATE May 1980

SCALE 1:10,000

100m

To the north and northwest, the volcano-sedimentary units are intruded by a leucogranite which is probably the continuation of the stock mapped just south of Mount Cooper on GSC map OF 288. This leucogranite contain very little femic mineral (brown and green hornblende) and is relayed within the volcanics and sediments by quite a few aplitic dykes of identical composition. Two major dykes have been mapped, one of which appears very close and cutting across the mineralization occurrence (see Plate III).

c) Metamorphism, Structure, Alteration

The rocks of the Kaslo Group in the area have undergone regional metamorphism of green schist facies as indicated by large development of chlorite. The volcanic rock usually see their biotite retromorphosed into chlorite and plagioclase disappearing, but locally biotite seems to survive and co-exist with chlorite, indicating the proximity to the biotite facies.

On top of the regional metamorphism, as one moves toward the granitic stock, hornfels start to appear, first with abundant silicification and re-crystallization of the more acidic tuff and schist. The meta-andesite have their biotite turning into hornblende and right against the lenco-granite are transformed into large crystal horblendite or diorite.

The same gradation is less obvious in the quartzose schist but is real with some horizons very rich in sillimanite, biotite and garnet. This contact zone seems to extend at the most 200 to 250 metres away from the granite stock borders.

All the beds on the property are regularly dipping 65° westward to vertical with a strike at $N 150^{\circ} E$ to $N 165^{\circ} E$. They appear tightly isoclinally folded and where lithofacies permits it, foliation is concordant in the bedding. This is well marked by some "sericitic" quartz unit which shows good foliation associated with tight minor folding with fold axis at $N 160^{\circ} E$ plunging to 45° to the south. Some sediments on the other side of the creek from the adits, have a west dip at 35° indicating either proximity to axial zone of upright fold on a secondary kink fold. Although

no tops can be recognized, there is no reason from the regional geology to assume these beds are not in normal position, as they are regularly succeeded to the west, by younger Slocan sediments.

Very little alteration is visible along adit creek except right at the massive sulfide mineralization contact where a complete leaching of rock occurs especially in the felsic units. Most of the rhyolitic tuffs are transformed into "felsite", white, sugary, crumbling rock with a talcose surface. Right inside, one does see minute specks of pyrite. Also near the upper adit where an aplite dyke is cross cutting at very low angle, the intrusive is also affected and turned into a "sericitic felsite with minor magnetite".

Further away, the meta-andesite are not affected and on the east side (footwall) of the trenches, only stringers of pyrite and chalcopyrite are well apparent and oxidized at the rock surface.

However, similar "felsite" lateration is well developed on Line 5N 150 metres east of baseline. There, heavy pyrite and sericite replaces a larger portion of the rock and seems to be associated with the geochemical anomaly, (see next paragraph). This type of alteration is also common in the mineralized trenches.

d) Mineralization

It consists basically of two horizons of massive sulfides (pyrrhotite, pyrite, chalcopyrite, spalerite, minor galena). The main horizon is quite continuous also irregular in shape and contact with its host rock as well illustrated near the upper adit (see Plate III). There, the adit, cut through 1.5 to 2 m of massive sulfide and along the cliff it swells and pinches out at least in terms of valuable minerals. From the start of the cliff face toward the valley, and up the creek northward, this horizon can be followed over 250 metres.

117° 15'

117° 10'

50° 10'

50° 10'

COOPER MNT.
△

△ STUBBS MNT

COOPER PASS

△ McHARDY MNT.

△ MARTEN MNT

LEGEND

125 - Sample Number
●
26, 14, 40
Cu, Pb, Zn



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COOPER CREEK
82K/3E

STREAM SEDIMENTS
GEOCHEMISTRY

Fig 4

DATE May '80

SCALE 1:50,000

117° 15'

117° 10'



There, north of the bend into the creek above the first waterfall (see Plates II & V), another thin horizon parallels it for approximately 50 metres; it is only 20 to 30 cm thick and probably of the same grade. Here we will report data obtained from Canadian Superior Exploration Ltd.

Upper adit: 8' chip sample: 5.35% Cu, .09% Pb, 1.86% Zn, 1.85 oz Ag.

Probably on strike with the main horizon, two old trenches had exposed mineralization; but Trench 1 (located 3 metres east of the baseline, at the level of 245 metres from station 0 on same baseline), has slouched down and covered by vegetation. Consequently no good exposure is observed: the rusty brown rocks yet outcropping is weakly mineralized in chalcopyrite and pyrite into a quartz-biotite schist (Sample SM 79.18). On the other hand Trench 2 (5 metres east of baseline, 6 metres uphill from station 11 or 225 metres horizontally from station 0 on baseline), in line with Trench 1, is 2 x 4 metres and displays a massive sulfide horizon very rich in chalcopyrite and sphalerite; this horizon, nearly vertical is 60 cm wide at the base and 90 cm at top and is separated from another barren massive pyrite horizon (30 cm wide) by a well sericitized quartzose altered layer. The host rock, consists of a fine pyroclastic rhyolitic tuff (fragments up to 5 mm of rhuolite and also andesite).

Outside the heavy sulfide zone, and especially in the footwall (east side of the trench) the pyroclastic contains many small lenses of pyrite and chalcopyrite elongated with the schistosity bedding of the rock.

This pyroclastic unit, is to correlate with a small lens of dacitic coarser breccia found just 10 metres north of the main mineralized horizon above the waterfalls. Along with the fact, that the mineralization is found at the base of the more acidic sequence of volcanic and sedimentary intervals along with some resurging andesitic episodes, which upholds a volcanogenic origin for the Cu-Zn-Pb occurrence, the presence of dacitic breccia and pyroclastics points toward an even better fit to this model, (probable Kuroko type). The variability in facies and disruptive nature

of breccia indicate favorable environments and increases potential for economical deposit.

IV Geochemistry

In order to keep a good ground control, an orthophoto at the scale of 1:10,000 was ordered to Burnett Resource Surveys of Calgary. Controlled air photo was restituted along with 5 metre to 10 metre contour lines depending on steepness of the ground.

In the field, 6 lines were cut, approximately every 100 metres and extended in an east-west direction between the two creeks or both sides of the Adit Creek, over a length of 800 to 1200 metres. A lot of difficulties were encountered due to the roughness of the terrain, plagued with many ravines and canyons and a great number of enormous windfalls strewn helter skelter on the steep side of the mountain; the sheer size of these trunks made it impossible to saw off with a regular chain saw and on top of that the avalanche area had an incredible mat of dwarf spruce trees, and flexible willow and alder bush, whipping back at anyone trying to cut or trample them.

Anyway, in wake of the geophysical crew, soil sampling was carried out. A total of 165 samples were collected in a 10 x 20 cm brown water resistant kraft paper bags and sent for analysis to Loring Laboratories of Calgary where they were assayed for Cu, Pb, An and Ag.

Also a few stream sediments were taken on Adit Creek, Cooper Creek and the main southern tributary, 2 km east of Adit Creek, referred here as Pillow Creek. It is obvious that the Adit Creek is very anomalous in terms of Cu and less with respect to Pb and Zn (see CC-79-1 to 7).

Results of soil sampling are plotted on maps for Cu and Zn which are the only significant metals on the property. Copper, which is much less hydromorphically leached out, indicates two anomalous zones: one which is

expectedly in direct correlation with the outcropping mineralization around the trenches and "adit" cliff the anomaly shows a typical wash out pattern downslope (see Figure 6 & 7).

The other Cu anomaly lies between Line 4N and 5N, 100 to 200 m west of the baseline. From the previous observation, no major displacement is expected and it indicates some very potential mineralization as values are even better than the first anomaly. Ground observation of rock exposures have not discovered any good mineral occurrence but this is an area where alteration is encountered with increasing amount of pyritization. Source for this anomaly is to search toward its northern tip between Line 5N and 6N as there has been only mechanical displacement downslope.

On the other hand, zinc is more widespread due to its more mobile geochemical behavior. There is no correlative Zn anomaly in vicinity of the trenches and occurrences along Adit Creek. However, we observe a strong correlation with the Cu anomaly of Line 4N - 5N, west of baseline; there three downsloping Zn anomalies are contoured, showing the leaching effect in the brown forested soils. Again this anomaly has not been transported and has developed on residual soils. In fact this zone is between the lodgement till left out by the alpine glaciers, and the upper benches developed by maximum thickness of glaciers. Since glaciers have retreated, this zone wasn't covered and normal soil development has taken place except for mechanical downslope destruction by frost action (scree development). The short time over which new soil was created, accounts for the relatively small amplitude of the geochemical anomalies.

At lower elevation, starting between Line 3N and 4N, scree is present as well as some glacial till. This could explain a certain amount of transport and the Zn anomaly on Line 4N - 3N, 250 metres east of baseline could be related to the mineralization along Adit Creek, whereas mechanical dispersion and ready availability of the mobile zonc ions were not allowed enough for zind ions to be retained by soils around the trench area.

In any case, soil geochemistry indicates that the source of the best Cu and Zn anomalies are located westward from the exposed mineralized occurrence, somewhere between Line 4N and 6N.

V CONCLUSION AND RECOMMENDATIONS

Due to the extremely difficult nature of the terrain, exploration and geological observation has not been up to what could be expected, and a lot of time and effort had to be put into the different surveys. However sensible results have been achieved which can be summed up in a favorable geological setting of acid volcanics (felsics) associated with tuffs and quartzose sediments; also interlayered with small andesitic episodes, the felsic sequence relays the more consequent intermediate andesitic pile observed eastward and south around Pillow Creek and South Cooper Creek where the more felsic units seem to be very minor. Worth consideration, is the recognition of breccia and felsic pyroclastic near or directly associated with exposed mineralization. One should not neglect the possible enhancement effect of contact metamorphism along granitic rims on previously concentrated economic minerals.

Geochemistry points toward a possible new mineralized area although geophysics has given only poor indication. However other tools, such as Induced polarization, could be better adapted to the situation.

On the basis of these data, diamond drilling of at least two to three holes should be recommended, although difficult set-ups are recognized and should be overcome. Their site location would be:

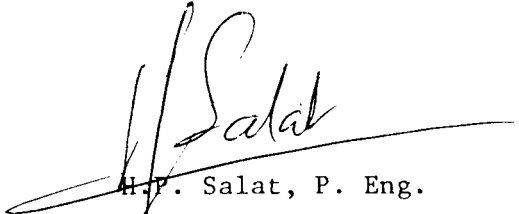
- Line 3N + 50 m; 100 m west of Baseline; azimuth N 120° E at -45°.
- Line 3N + 85 m; 75 m west of Baseline; azimuth N 120° E at -45°.
- Line 5N + 75 m; 225 m west of Baseline; azimuth N 120° E at -45°.

Each hole would be 150 m long; the first two holes are designed to test down dip from present mineralization along with its slight and fickle geophysical expression (see accompanying report by Mr. G. Hendrickson). The last one should recognize the geological environment associated with

the Cu-Zn anomaly between Line 5N and 6N.

An effort should be made to have the grid line re-cut and opened correctly to facilitate traversing and at the same time have two or three more lines cut and sampled along with refining the geological mapping.

/hms


H.P. Salat, P. Eng.



Expiry Date January 8, 1981

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82K W 1/2. GSC Open File 288

APPENDIX I

THIN SECTION STUDY OF SOME SELECTED SAMPLES
FROM COOPER CREEK PROPERTY

Sample Name

- GG-2 Very fine grained texture (30 - 60 μ), thinly laminated due to alignment of biotite (10 to 15%) and chlorite (10%); in between mainly quartz (70%) and sanidine (5 to 15%). Some apatite and a few calcite veinings.
Rhyolitic tuff
- GG-3 Schistose, biotite metamorphosed to chlorite (80 to 85%) some muscovite. 15% very fine grained quartz. 5% opaque mineral (pyrite?).
Quartz-chlorite schist
- GG-4 Very, very fine texture, very finely bedded and laminated; 75% of chlorite-biotite the remaining being 3/4 quartz and 1/4 sanidine.
Waterlain dacitic tuff
- GG-5 Microgranular texture with porphyroblast of microcline (30%), plagioclase and a matrix of fine broken pieces of quartz (40%). Small pieces of chloritized biotite.
Microgranite
- GG-5B Coarse, porphyritic and cataclastic. Microcline (35%); very large porphyroblast of plagioclase (An 20) representing about 30% of section. Matrix of quartz (25%) and some rare muscovite (5 to 10%).
Granite

- GG-6 Very fine texture (30 - 90 u) good sorting. All aligned biotite (10 to 20%); rest is quartz (75%) and sanidine (5 to 15%) plus a few grains of opaque mineral (pyrite)
Meta-rhyolitic tuff
- GG-7 Microgranular texture, large porphyroblast of microcline and plagioclase (An 10) and a few quartz. The matrix consists of cataclastic quartz and a few orthoclase. A few perthitic structures. Few to rare biotite and muscovite. Composition is identical to GG-5B.
Microgrrnitic aplite
- GG-8 Schistose, very fine grained (62 μ) biotite (20%). Some developed second generation muscovite. 80% mainly rounded quartz. Maybe some vague sanidine.
Schistose siltstone (or tuff)
- GG-9 Laminated, graded, bedded and cross bedded, but schistose biotite rich beds (biotite 40%), each laminae is 3 to 5 mm. Some sanidine but mainly quartz grains (60%).
Schistose siltstone
- GG-10 Huge laths of green hornblende, some being chloritized (mainly small laths of chlorite) 30%. Some chlorite still contains remains of biotite. Very large lath of orthose (20%), with vague outlines. A few plagioclase, not well defined (5 to 10%), quartz (1 to 5%).
Hornblende hornfels (diorite)
- GG-11 Bedded, chloritic laminae with very fine quartz and rare sanidine. Quartz (70%) is sub-rounded to well rounded, in well sorted beds with a few needles of chlorite. There are some neo-formed sheaves of chlorite.
Tuffaceous (?) chloritic siltstone

- GG-12 Vaguely schistose, large chlorite (80%), some are clearly neo-formed large laths of chlorite. Some orthoclase and plagioclase grains visible. often cataclastic, 10 to 15%. Very rare quartz.
Chlorite-schist (meta-andesite)
- GG-13 Mainly chlorite 70 to 75%, invaded by quartz and newly formed chlorite (large laths); the new quartz is partly re-crystallized. Remains of orthoclase and plagioclase. A few grains of sphene.
Hornfelsed meta-andesite
- GG-14 Thinly laminated schistose; graded-bedded, very fine grained quartz. Fine grained pyrite distributed along 2nd order sedimentary structures of cross-bedding and minor fractures. Quartz 85%, chlorite 15%.
Schistose pyritic siltstone
- GG-15 Similar to GG-10 with large laths of chlorite-hornblende pseudomorph. Hornblende is developing on and in chlorite laths or re-arranged chlorite, indicating proximity of contact metamorphism. Some clear quartz appearing. The normal matrix of small chlorite-feldspar quartz grains is eroded and replaced by large crystals of quartz, orthoclase and some plagioclase.
Hornfelsed meta-andesite
- GG-16 Idiomorphic, interlocking grains of microcline (50%), clear quartz (25%) and 5 to 10% plagioclase (An 10-15) and a few grains of green and brown hornblende. Some porphyroblasts of microcline.
Leuco-granite

- GG-19 Schistose, thinly laminated, very small biotite with many small pyrite grains aligned along cross-bedding structures like in GG-14 (Biotite here has replaced chlorite).
Schistose pyritic siltstone
- GG-20 Schistose, chlorite-quartz schist in the process of being metamorphosed with large crystal development of green hornblende, orthoclase and clear quartz similar to GG-10 and GG-15.
Hornblende hornfels
- L.A. 1 Schistose, many grains of pyrite, development of corroding (Lower Adit) quartz. Orthoclase and a few plagioclase. Many chlorite interlaced with hornblende.
Meta-andesite
- L.A. 2 Very fine grained (75 to 80%) rounded to sub-rounded (Lower Adit) quartz and a few feldspars - 10% (orthoclase). Many small grains of pyrite. 10 to 15% of very tiny pieces of biotite all aligned into schistosity.
Schistose rhyolitic tuff
- L5 + 350 W Tiny laths of chlorite and muscovite in two orthogonal directions (10%). Orthoclase (20%); the rest is quartz.
Rhyolite
- L6 + 15W Some composition as L5 + 350W but schistose biotite (20%). Rest is quartz and orthoclase.
Rhyolite
- SM-79-18 Schistose, many opaque minerals (pyrite, chalcopyrite) aligned along bed planes, some being quite an accumulation. Mainly quartz 60% and biotite, with a small interval of green hornblende and a few ill-defined feldspar and quartz (a small andesitic episode).
Quartz-biotite schist

- SM-79-18 Schistose, many opaque minerals (pyrite, chalcopyrite) aligned along bed planes, some being quite an accumulation. Mainly quartz 60% and biotite, with a small interval of green hornblende and a few ill-defined feldspar and quartz (a small andesitic episode).
Quartz-biotite schist
- SM-79-19
(Trench 2) Fragments (up to 5 mm in diameter) of rhyolite mostly but a few are more chloritic and hornblende rich (andesitic). Matrix is mainly siliceous with some large re-crystallized quartz. Lot of opaque minerals (pyrite, chalcopyrite).
Rhyolitic pyroclastic
- SM-79-20
(Line 4N-10W) Scattered although schistose tiny grains of biotite representing 25 to 35% of section. In between, small grains of quartz 70 to 75%. Scattered, aligned blebs of tiny garnet grains.
Quartz-biotite schist
- SM-79-21
(Line 4N-7W) Blobs (.3 to .5 cm in diameter) of pyritized matrix tuffaceous siltstone engulfed in identical but lighter (no pyrite) surrounding tuff with well outlined tiny crystal of muscovite, quartz and orthoclase.
Spotted rhyolitic ash-fall
- SM-79-22
(Line 4N-4W) Schistose, chloritic, disrupted by development of large feldspar (orthoclase) and a few plagioclase.
Meta-andesitic tuff
- SM-79-23
(Line 4N-1 + 10W) Very fine grained (62 μ) biotite, quartz and orthoclase. Stylolitic joints underlined by pyrite.
Rhyolitic tuff

- SM-79-24 Identical to SM-79-23
(Line 5N-2 + 20W) Rhyolitic tuff
- SM-79-25 Schistose, thinly bedded with biotite crystal and a
(Line SN-4W) few quartz grains. In between laminae, quartz grains
 and very vague tiny feldspar grains.
Quartz-biotite schist (a pelite)
- SM-79-26 Schistose with some aggregates of garnet. Many
(Line 5N-5W) scattered (although aligned) tiny grains of biotite
 20%. The remainder is quartz interlocking grains and
 a few orthoclase. One interval contains argillaceous
 material and fibrous sillimanite.
Quartz-biotite-sillimanite schist
- SM-79-27 Schistose, several laminae of large interlocking grains
(Line 5N-6 + 10W) of quartz with thin laminae of very tiny interlocking
 grains of quartz and orthoclase. Some laminae of quartz
 and aligned biotite. Many opaque minerals (pyrite)
 and a few aggregates of garnet.
 Strong silicification with large quartz corroding and
 eating up small grains.
Schistose quartzite with exhalative chert
- SM-79-28 Identical to SM-69-27 but silicification is more obvious.
(Line 5N-7W) Compact fibres of sillimanite are concentrated in some
 laminae, with some biotite grading into hornblende. Some
 feldspar grains and many big well developed grains of
 garnet.
Hornfelsed biotite quartzite
- SM-79-29 Schistose, bedded, quartz and laminae full of argillic
(Line 5N-8+10W) material (slightly crystalline but yet a lot of opaque
 "clay"), possible sillimanite. Some muscovite.
Quartzose schist

SM-79-30
(Line 5N-9+20W)

Very fine grained interlocking quartz (95%) and 5% muscovite.

Chert

SM-79-31
(Line TN-12W)

Many opaque minerals (pyrite) aligned along cross-bedding structure and minor joints. A lot of tiny chlorite with some muscovite and thin bed of biotite with some garnet, 75% quartz.

Cherty quartz-biotite, schist

SM-79-32
(Line 5N-14W)

Quartz rich (70%) in some largely crystalline beds, in others very tiny (chert) with 5% muscovite and 1 to 5% zoisite. Some blobs of garnet. A lot of sulfide (pyrite).

Hornfelsed quartzite

APPENDIX II

STATEMENT OF EXPENDITURES

STATEMENT OF EXPENDITURES

LABOR

Field Time

H. Salat	Geologist (June 28-30, July 5-13, Oct 19-23) 17 days @ \$195.00	\$ 3,315.00
G. Hendrickson	Geophysicist (June 24-30) 7 days @ \$195.00	1,365.00
W. Heshka	Prospector Geologist (June 24, July 9, October 15-21, 22), 24 days @ \$120.00	2,880.00
Al Mason	Helper (June 26, 27), 2 days @ \$50/day	100.00
Abram Davis	Helper (June 26, 27), 2 days @ \$50/day	100.00

Office - Report

H. Salat	7 days at \$195.00	1,365.00
G. Hendrickson	3 days at \$195.00	585.00

Total 9,710.00

Line cutting and sampling contracted out
to Zimex Exploration Ltd. 9,186.61

Geological consulting - Garratt Geoservices (Inv. July 3) 1,443.66

Total 10,630.27

TRANSPORTATION

Air Transport

Okanagan Helicopters - Inv. #H-08343, H-08414, H-08450, part of H-08555, H-10849	10,847.69
P.W.A. - Inv. #67517, 27340	61.72

Total 10,909.41

Truck Rental

Bowmac Truck Rentals, Inv. # part of 41909, 41910	461.49
Rentway Trucks - Inv. #24351	308.62
Western Trucks - Inv. #F-579	441.80

Total 1,211.91

FOOD AND LODGING AND FIELD EXPENSES

Peebles Motor Inn - Inv. 2901, 2902, 2964, 3034, 3173, 3175, 3286, 3289, 5028, 5065, 5100	1,050.80
H. Salat's expenses (food, gas and equipment)	1,039.90
W. Heshka's field expenses (food, gas and supplies)	428.06
Mountain Equipment Co-op - Inv. #29479-3	75.00
	<hr/>
Total	2,593.76

LABORATORIES AND ASSAYS

Loring Lab - Inv. # 17587, 17907, 18072, 18110	1,174.80
Vancouver Petrographics Inv. #1802, 1837	233.00
	<hr/>
Total	1,407.80

REPRODUCTION AND MAP

Orthophoto - Burnett Resources Survey, Inv. 6648, 6547	1,076.25
Carter Mapping Inv. # 53144	22.50
	<hr/>
Total	1,108.75

Supervision and administration at 10% 3,756.19

TOTAL \$ 41,318.09

GARRATT GEOSERVICES

4516 VEGAS ROAD N W
CALGARY, ALBERTA, CANADA
T3A 0N1
TELEPHONE (403) 288-8791

Glen L. Garratt, P. Geol.

July 13/79

Mr. H. Sobat
Aquitaine Company of Canada Ltd.

Dear Hugh:

The following are details of my fees and expenses incurred on the Copper Creek and Kuskonong Projects during the period June 25 to July 10, inclusive.

Copper Creek Project:

Salary: June 25-27 and July 7, 8 - 7 days @ \$200 per day \$1,225.00

Food:	June 25 - Kaska supper	\$ 8.00	
	June 26 " " breakfast	6.00	
	June 26 " " supper	12.00	
	June 27 " " " "	10.00	
	June 27 " " breakfast	6.00	
	June 28 " " " "	6.00	
	June 28 " " supper	7.00	
	June 29 " " breakfast	6.00	
	July 7 - Nelson supper	6.00	
	July 8 " " " "	3.00	
		\$ 71.00	71.20

Accommodation: Kaska Motel 75.60

Miscellaneous: 2 topographic maps Nelson 1.56

\$ 1,373.36

ZIMEX EXPLORATION LTD.
MINERAL EXPLORATION SERVICES

TELEPHONE 403-242-3081

3008-27 ST. S.W.
CALGARY, ALBERTA
T3E 2G7

October 24, 1979

Aquitaine Company of Canada Ltd.
2000 Aquitaine Tower
540 - 5th Avenue S.W.
CALGARY, Alberta
T2P 0M4

Attention: Mr. H.P. Salat
Mineral Division

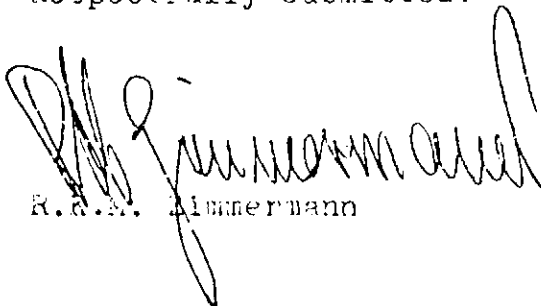
STATEMENT OF ACCOUNT

re: Copper Creek Project
October 16 - October 22, 1979 incl.

One-man exploration crew for 7 days at \$ 300.00 per day	\$ 2,100.00
Transportation (1 ton truck at 25 cents per kilometre) 1493 kilometres	\$ 374.50

TOTAL:	\$ 2,474.50

Respectfully submitted:

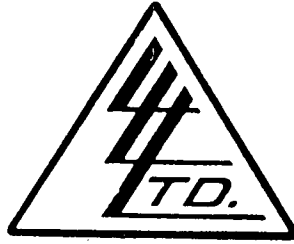

R.R.A. Zimmermann

NO. 45-9
DATE 10/24/79
BY [Signature]
FOR [Signature]
10/24/79

APPENDIX III

ASSAYS

To: ACQUITAINE COMPANY LTD.
 2000 Aquitaine Tower
 540-5th Avenue S.W.
 Calgary, Alberta T2P 0M4
 ATTN: H. Salat



File No. 17587
 Date August 24, 1979
 Samples Stream
 Project: Cooper Creek

Certificate of
 ASSAY of
LORING LABORATORIES LTD.

Page # 1

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
<u>"STREAM SAMPLES"</u>				
L1-7E Str.	61	17	58	0.5
L1-8E Str.	79	27	71	0.5
Pillow Creek East	30	36	58	0.2
Pillow Creek West	29	27	60	0.7
Pillow Creek Main	33	34	77	0.3
Pillow Creek Downstream 1	29	24	49	0.1
Pillow Creek Downstream 2	30	23	49	0.4
CC-79-1	101	23	87	0.4
CC-79-2	141	27	89	0.3
CC-79-3	-*	-*	-*	-*
CC-79-4	140	32	87	0.2
CC-79-5	143	26	89	0.2
CC-79-6	127	19	77	0.2
CC-79-7	149	27	77	0.1

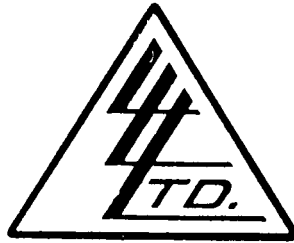
(-*)=To Follow.

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulps Retained one month
 unless specific arrangements
 made in advance.

E. M. J. Aae
 Licensed Assayer of British Columbia

To: AQUITAINE COMPANY LTD.
 2000 Aquitaine Tower
 540-5th Avenue S.W.
 Calgary, Alberta T2P 0M4
 ATTN: H. Salat



File No. 17587
 Date August 24, 1979
 Samples Soils
 Project: Cooper Creek

Certificate of
ASSAY

LORING LABORATORIES LTD.

Cooper

Creek

Page # 2

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
<u>"SOIL SAMPLES"</u>				
L6-06W	21	39	78	0.8
07W	5	41	62	0.5
08W	7	28	109	0.3
09W	7	28	145	0.1
10W	15	25	152	0.6
11W	5	13	34	0.4
12W	14	27	104	0.1
13W	8	22	46	0.1
14W	12	16	48	0.2
15W	64	21	103	0.3
16W	116	33	64	0.5
17W	53	30	31	0.6
18W	37	28	96	0.5
19W	39	27	144	0.8
20W	43	31	122	0.8
L5S-01W	41	22	95	0.7
L5-01W	35	22	95	1.1
02W	44	23	102	0.7
03W	31	21	68	0.5
04W	41	25	189	0.6
05W	112	46	131	0.5
06W	135	480	560	0.7
07W	520	70	113	1.1
L5-09W	300	56	460	0.6
10W	187	49	580	0.6
11W	103	81	370	0.3
12W	69	72	340	0.3
13W	65	46	300	0.5
14W	63	68	310	0.4

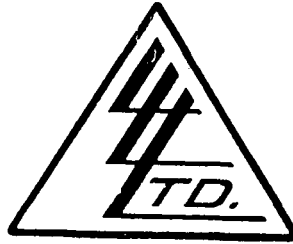
I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulp Retained one month
 unless specific arrangements
 made in advance.

E. M. Isaac

Licensed Assayer of British Columbia

To: AQUITAINE COMPANY LTD.
 2000 Aquitaine Tower
 540-5th Avenue S.W.
 Calgary, Alberta T2P 0M4
 ATTN: H. Salat



File No. 17587
 Date August 24, 1979
 Samples Soils
 Project: Cooper Creek

Certificate of
 ASSAY of
 LORING LABORATORIES LTD.

Page # 3

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
L5-15W	54	52	320	0.4
16W	29	52	360	0.5
17W	38	48	240	0.7
18W	14	59	760	0.6
19W	7	16	70	0.4
20W	7	35	270	0.6
21W	7	32	185	0.5
L4-00	53	18	88	0.7
L4-02W	40	23	158	0.8
03W	32	18	260	0.7
04W	34	26	192	0.6
05W	48	24	145	0.5
06W	23	17	44	0.4
L4-07WA	101	44	310	0.5
07WB	135	260	380	0.3
L4-09W	165	40	260	0.5
10W	240	67	450	0.5
11W	102	48	510	0.7
12W	88	56	310	0.6
13W	20	42	145	0.4
14W	53	46	310	0.4
15W	29	42	290	0.3
16W	16	30	123	0.3
17W	12	38	280	0.3
18W	8	25	130	0.3
19W	16	45	193	0.3
20W	19	52	400	0.6
L3-11W	70	46	340	0.7
12W	12	18	69	0.4
13W	36	50	185	0.4
14W	38	32	230	0.2

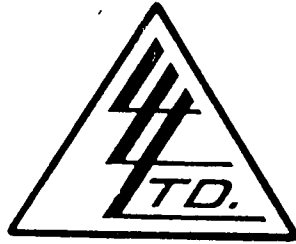
I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulps Retained one month
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Ed McJannet

Licensed Assayer of British Columbia

To: AQUITAINE COMPANY LTD.
 2000 Acquitaine Tower
 540-5th Avenue S.W.
 Calgary, Alberta T2P 0M4
 ATTN: H. Salat



File No. 17587
 Date August 24, 1979
 Samples Soils
 Project: Cooper Creek

Certificate of
ASSAY of
LORING LABORATORIES LTD.

Page # 4

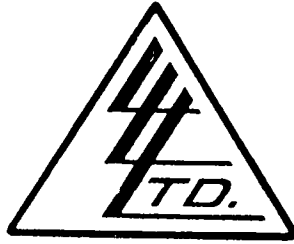
SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
L3-15W	12	18	71	0.4
16W	18	40	240	0.6
17W	15	50	340	0.4
18W	8	9	29	0.2
L3-19W 4+75	8	21	250	0.4
20W	9	15	139	0.4
21W	7	14	34	0.3
22W	9	16	44	0.4
L3-04E	142	28	95	0.5
05E	71	18	121	0.5
06E	54	21	185	0.5
07E	44	28	104	0.4
08E	17	14	54	0.4
L3-10E	98	56	320	0.7
11E	35	134	270	0.4
12EA	16	16	121	0.5
12EB	36	78	176	0.5
14E	19	24	116	0.6
15E	56	41	195	0.9
16E	70	33	125	0.9
17E	71	52	280	0.9
18E	69	70	165	0.9
19E	61	24	123	1.0
20E	47	14	46	0.5
L1-01E	28	15	111	0.4
02E	61	23	48	0.4
03E	69	28	62	0.2
04E	56	20	52	0.3
05E	37	20	59	0.4
06E	46	20	37	0.4
L1-09E	34	14	42	0.4

I **Hereby Certify** THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulps Retained one month
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 made in advance.

E. M. Asade
 Licensed Assayer of British Columbia

To: AQUITAINE COMPANY LTD.
 2000 Aquitaine Tower
 540-5th Avenue S.W.
 Calgary, Alberta T2P 0M4
 ATTN: H. Salat



File No. 17587
 Date August 24, 1979
 Samples Soils
 Project: Cooper Creek

Certificate of
ASSAY of
LORING LABORATORIES LTD.

Page # 5

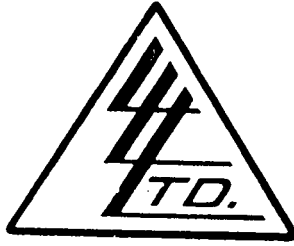
SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
L1-10E	29	12	51	0.6
L4-02E	48	43	310	0.7
03E	6	21	164	0.2
L4-05E	100	90	105	0.7
L4-07E	21	80	520	0.8
08E	25	52	350	0.6
09E	19	70	500	0.4
10E	73	370	690	2.0
11E	11	36	240	0.5
12E	8	22	58	0.2
13E	10	39	87	0.1
L4-15E	33	42	187	0.5
16E	25	12	83	0.5
17E	78	21	161	0.8
18E	39	16	105	0.5
19E	99	18	122	0.5
20.25E	100	18	115	0.5
20.50E	250	24	138	0.4

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

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 Pulps Retained one month
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S. X. M. J. S. A. C. A. E.
 Licensed Assayer of British Columbia

To: AQUITAINE COMPANY LTD.
 2000 Aquitaine Tower
 540-5th Avenue S.W.
 Calgary, Alberta T2P 0M4
 ATTN: H. Salat



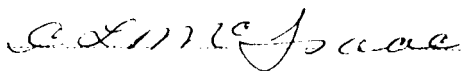
File No. 17587
 Date August 24, 1979
 Samples Stream
 Project: Cooper Creek

Certificate of
ASSAY of
LORING LABORATORIES LTD.

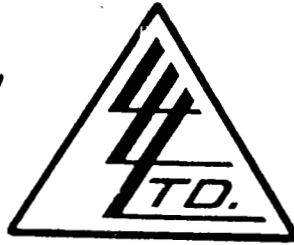
Page # 6

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
<u>"STREAM SAMPLES"</u>				
CC-79-3	135	28	154	0.6
<p>I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES</p>				

Rejects Retained one month.
 Pulps Retained one month
 unless specific arrangements
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 Licensed Assayer of British Columbia

To: AQUITAINE COMPANY OF CANADA LTD.,
 2000, 540 - 5th Avenue S.W.,
 Calgary, Alberta T2P 0M4



File No. 18072
 Date October 25, 1979
 Samples Soil

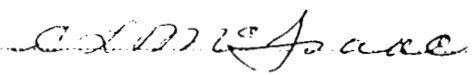
ATTN: H. Salat

Certificate of
ASSAY of
LORING LABORATORIES LTD.

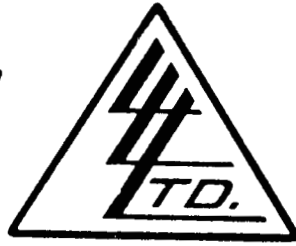
Page # 1

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn
<u>"Soil Samples"</u>			
L3-225 W	14	11	35
L3-250 W	98	49	470
L3-275 W	19	33	118
L3-300 W	10	14	42
L5-7	173	34	300
L5-8	79	39	250
L5-9	98	54	570
L5-10	149	180	350
<p>I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES</p>			

Rejects Retained one month.
 Pulps Retained one month
 unless specific arrangements
 made in advance.


 Licensed Assayer of British Columbia

To: AQUITAINE COMPANY OF CANADA LTD.,
 2000, 540 - 5th Avenue S.W.,
 Calgary, Alberta T2P 0M4



File No. 18072
 Date October 25, 1979
 Samples Soil

ATTN: H. Salat

Certificate of
ASSAY of
LORING LABORATORIES LTD.

Page # 3

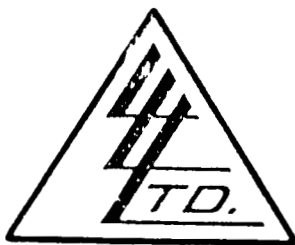
SAMPLE No.	PPM Cu	PPM Pb	PPM Zn
L3-25W	36	20	93
50W	41	27	109
75W	37	21	103
100W	76	31	310
125W	75	37	340
150W	53	39	300
175W	8	9	17
200W	43	32	147

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulps Retained one month
 unless specific arrangements
 made in advance.


 Licensed Assayer of British Columbia

To: ACETAIN COMPANY OF CANADA LTD.
 2,000, 5th Avenue S.W.
 CALGARY, Alberta T2P 0M4



File No. 15823
 Date September 25th, 1978
 Samples Sediments

Att: Hughes Selat

Certificate of
ASSAY of
LORING LABORATORIES LTD.

PAGE # 1

SAMPLE No.	PPM Cu	PPM Pb	PPM Zn	PPM Ag
# 119	26	13	49	
120	51	72	102	
121	310	30	78	
122	27	14	51	
123	32	18	49	
124	28	15	50	
125	26	14	40	
126	18	15	44	
127	27	15	48	

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
 ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
 Pulps Retained one month
 unless specific arrangements
 made in advance.

E. J. Isaac
 Licensed Assayer of British Columbia

PLATES

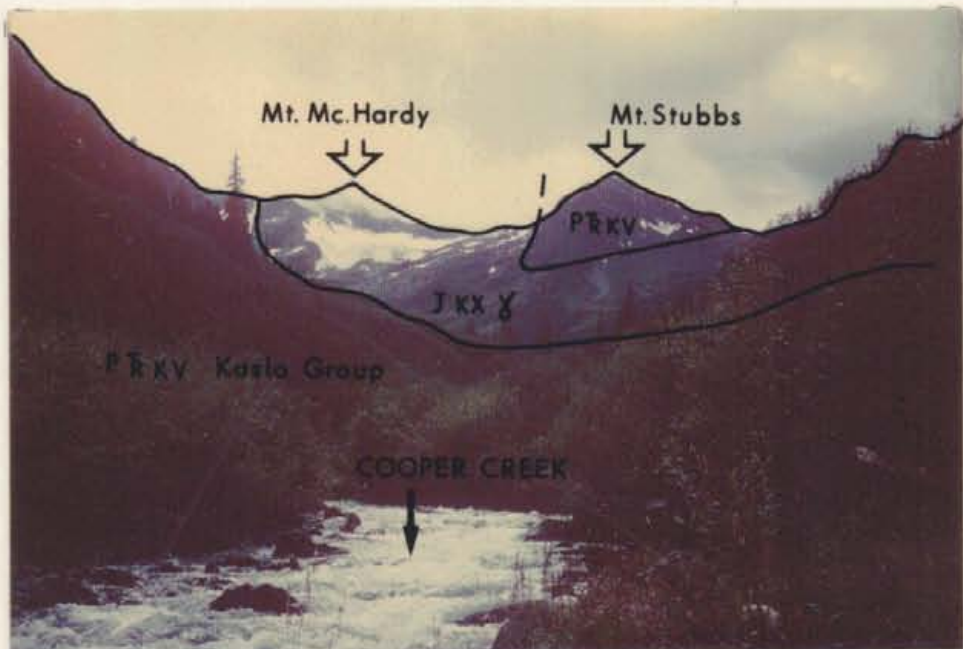


Plate I - Cooper Creek looking westward and
- upstream.



Plate II - Adit creek, looking north at the rusty
cliff

xxxx Mineralized horizon.

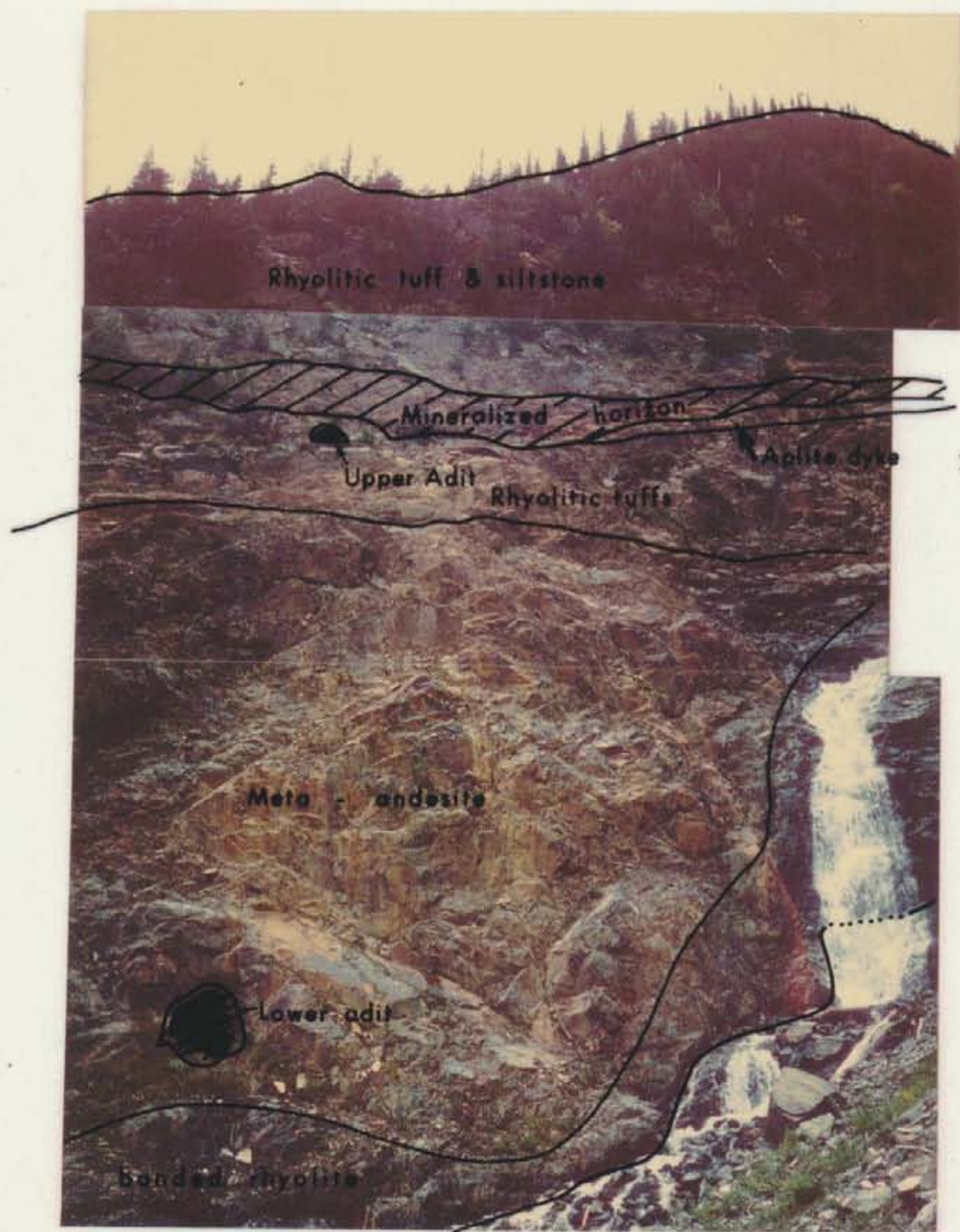


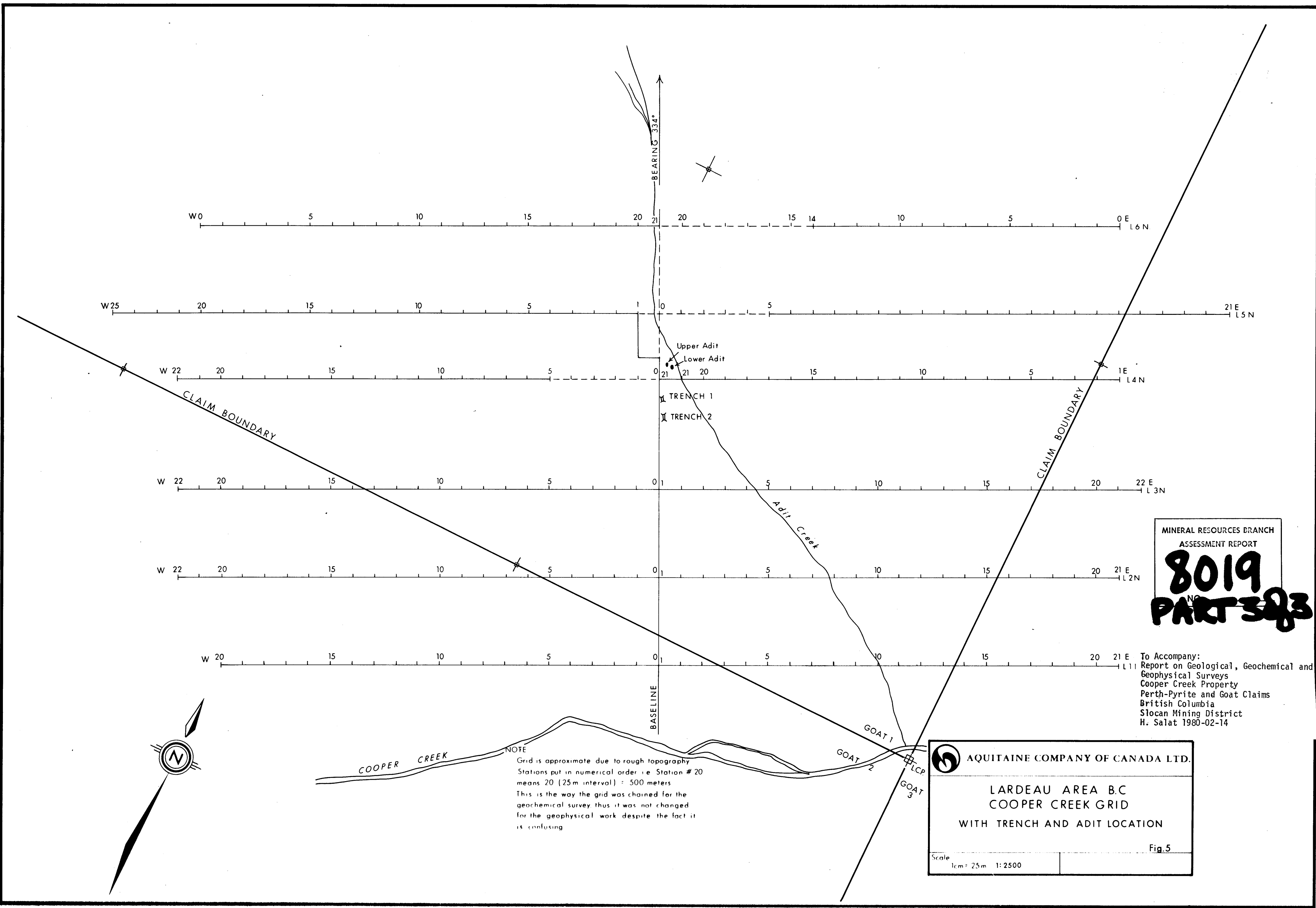
Plate III - Adit cliff - on the right, the first waterfall.



Plate IV - Close up on banded
rhyolite



Plate V - Above 1st. waterfall
looking north from
above upper adit.



MINERAL RESOURCES BRANCH
 ASSESSMENT REPORT
8019
 PART 303

To Accompany:
 Report on Geological, Geochemical and
 Geophysical Surveys
 Cooper Creek Property
 Perth-Pyrite and Goat Claims
 British Columbia
 Slocan Mining District
 H. Salat 1980-02-14

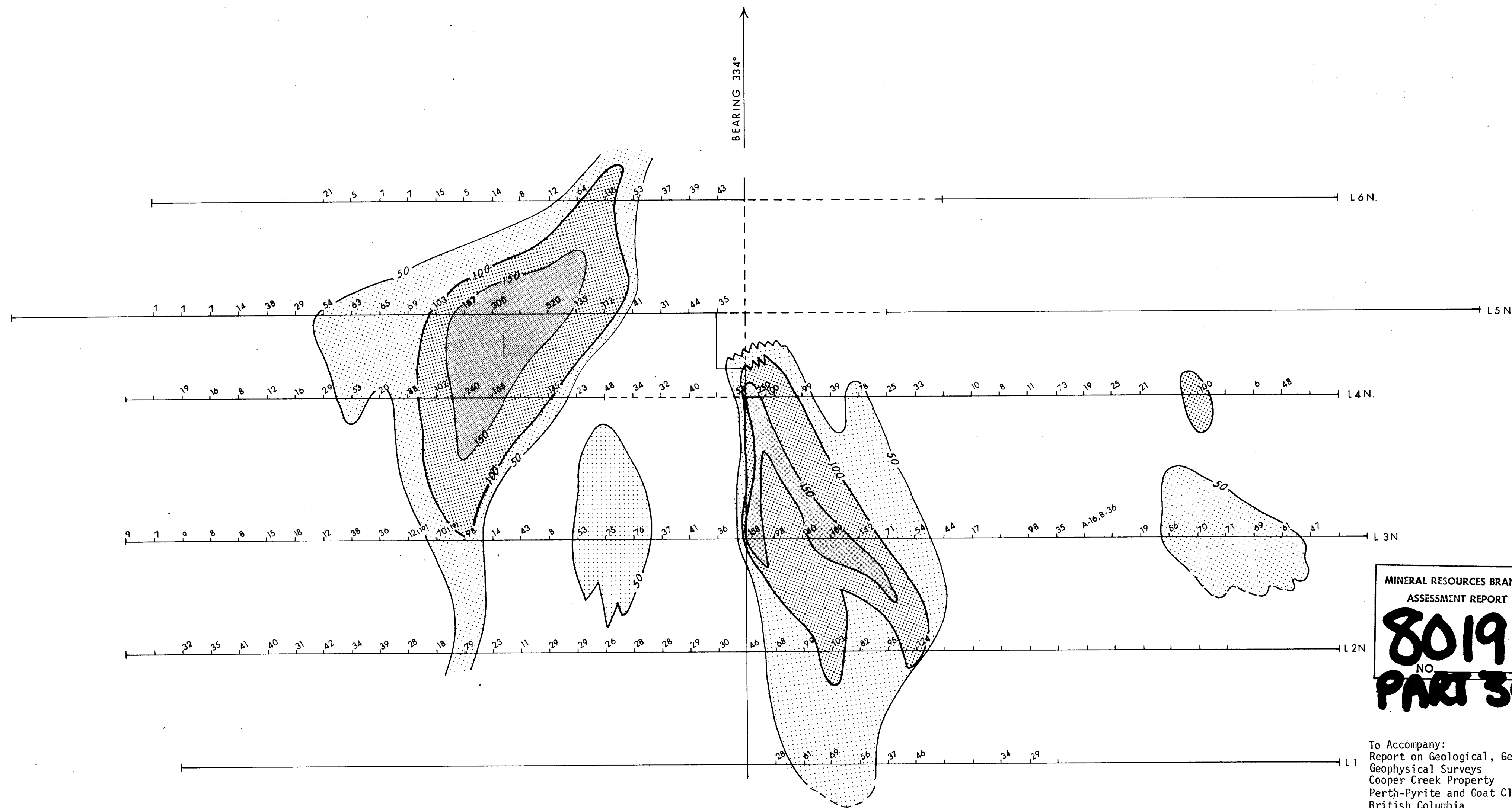
NOTE
 Grid is approximate due to rough topography
 Stations put in numerical order i.e. Station # 20
 means 20 (25m interval) = 500 meters
 This is the way the grid was chained for the
 geochemical survey thus it was not changed
 for the geophysical work despite the fact it
 is confusing

AQUITAINE COMPANY OF CANADA LTD.

**LARDEAU AREA B.C
 COOPER CREEK GRID
 WITH TRENCH AND ADIT LOCATION**

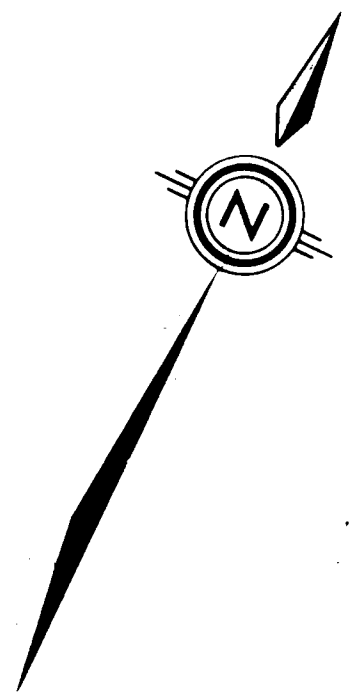
Scale 1cm = 25m 1:2500

Fig.5



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8019
NO
PART 303

To Accompany:
Report on Geological, Geochemical and
Geophysical Surveys
Cooper Creek Property
Perth-Pyrite and Goat Claims
British Columbia
Slocan Mining District
H. Salat 1980-02-14



NOTE:
Grid is approximate due to rough topography
Stations put in numerical order i.e. Station # 20
means 20 (25m. interval) = 500 meters
This is the way the grid was chained for the
geochemical survey, thus it was not changed
for the geophysical work despite the fact it
is confusing.

LEGEND

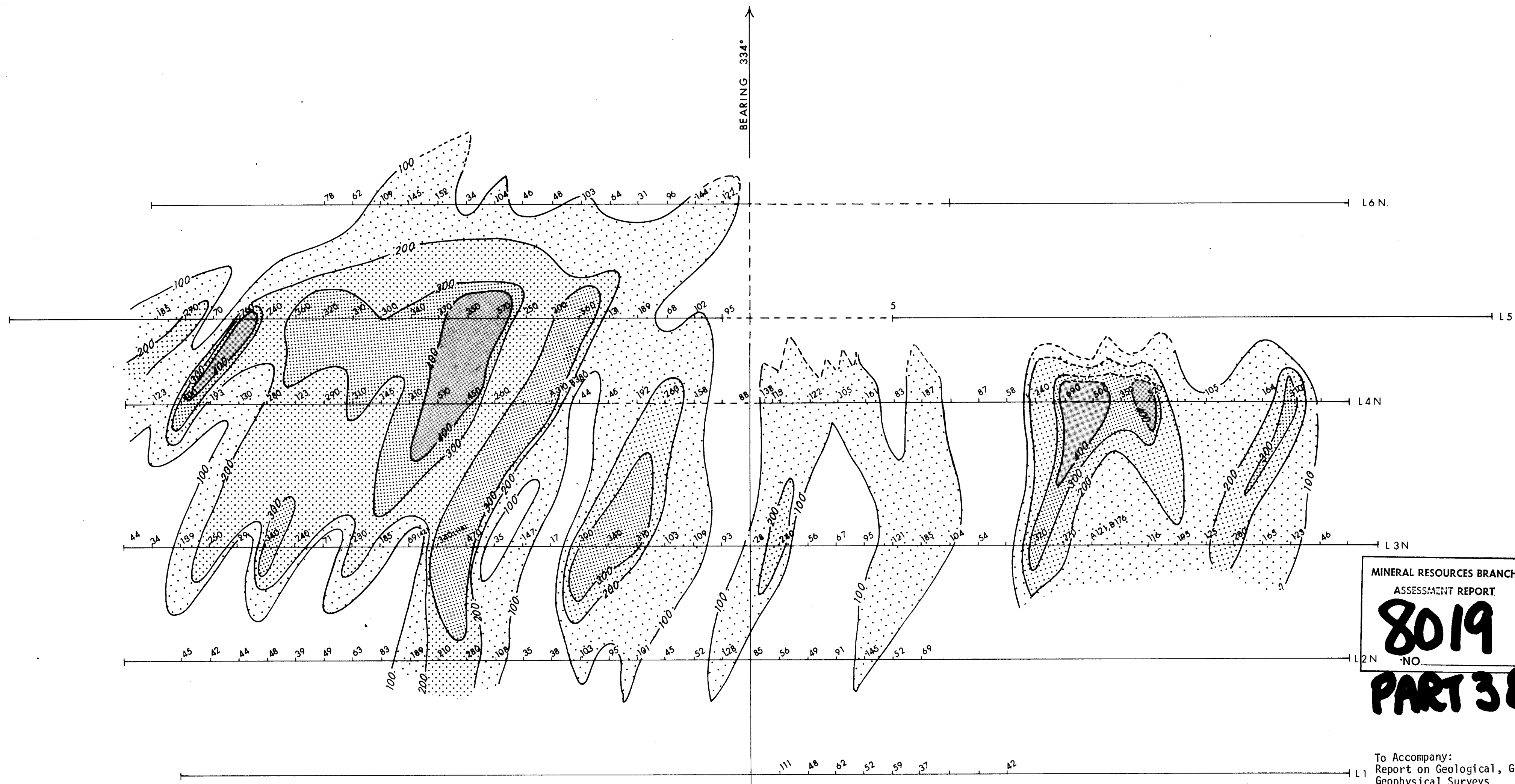
	50 - 100 PPM
	100 - 150 PPM
	150 & UP PPM

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COOPER CREEK PROPERTY
COPPER
SOIL GEOCHEMICAL

Fig. 6

Scale:
1cm = 25m 1:2500



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8019
NO.

PART 383

To Accompany:
Report on Geological, Geochemical and
Geophysical Surveys
Cooper Creek Property
Perth-Pyrite and Goat Claims
British Columbia
Slocan Mining District
H. Salat 1980-02-14

NOTE:
Grid is approximate due to rough topography
Stations put in numerical order i.e. Station #20
means 20 (25m. interval) = 500 meters
This is the way the grid was chained for the
geochemical survey, thus it was not changed
for the geophysical work despite the fact it
is confusing

LEGEND

	100 - 200 PPM
	200 - 300 PPM
	300 - 400 PPM
	400 & UP PPM

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ZINC
SOIL GEOCHEMICAL

Fig. 7

Scale: 1cm = 25m. 1:2500