

ARIS SUMMARY SHEET

District Geologist, Smithers

Off Confidential: 92.08.15

ASSESSMENT REPORT 21844

MINING DIVISION: Atlin

PROPERTY: Maple Leaf  
LOCATION: LAT 58 56 00 LONG 133 48 00  
UTM 08 6533039 569076  
NTS 104K13W  
CLAIM(S): Glacier Light 1-4  
OPERATOR(S): American Bullion Min.  
AUTHOR(S): Konkin, K.J.  
REPORT YEAR: 1991, 64 Pages  
COMMODITIES  
SEARCHED FOR: Gold, Silver, Copper, Lead, Zinc  
KEYWORDS: Paleozoic, Gneisses, Schists, Quartzites, Sphalerite, Galena, Pyrite  
Chalcopyrite

WORK

DONE: Geochemical, Geophysical  
EMGR 3.0 km; PEM  
ROCK 75 sample(s) ; AU, AG, CU, PB, ZN  
SILT 32 sample(s) ; AU, AG, CU, PB, ZN  
SOIL 124 sample(s) ; AU, AG, CU, PB, ZN  
Map(s) - 1; Scale(s) - 1:5000

LOG NO: NOV 22 1991 RD.  
ACTION:  
FILE NO:

**GEOPHYSICAL AND  
GEOCHEMICAL SAMPLING REPORT  
ON THE MAPLE LEAF PROPERTY**

**ATLIN MINING DIVISION  
N.T.S.: 104K/13**

**LATITUDE: 58° 56' NORTH  
LONGITUDE: 133° 48' WEST**

**SUB-RECORDER  
RECEIVED**  
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VANCOUVER, B.C.

**AMERICAN BULLION MINERALS LTD.  
15th Floor  
675 West Hastings Street  
Vancouver, B.C.  
Canada  
V6B 1N2**

**BY: K.J. KONKIN, B.Sc., F.G.A.C.**

**OCTOBER, 1991 GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**21,844**

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SUMMARY

The Maple Leaf Property, within the Tulsequah District in northwestern British Columbia is located 73 air-kilometers south of Atlin, B.C. Volcanogenic precious metal bearing polymetallic sulphides occur within a thick section of felsic volcanic rocks located 25 kilometers northwest of the Tulsequah Chief deposit. The Property covers a 5 kilometer strike length of favourable geologic setting hosting base and precious metal sulphides.

Preliminary prospecting has led to the discovery of several mineralized horizons. The "3100 Zone" consists of a 60 meter thick section of pyritic felsic volcanics with zones of volcanogenic sulphides associated with a siliceous exhalative unit. Large float blocks of banded sulphide grade to 5.14 g/T gold, 129.60 g/T silver, 11.25% zinc, 8.22% lead and 0.15% copper. The "3300 Zone" consists of a 100 meter thick section of pyritic felsic volcanics hosting a siliceous exhalative horizon containing disseminated and laminated zinc-lead mineralization that has been traced over a strike length of 1.0 kilometer. Preliminary mapping of both zones indicates that the thickness and grade of polymetallic sulphide mineralization is increasing with depth. A soil sampling survey outlined northwest trending coincident Au-Cu-Pb-Zn anomalies overlying favourable host units. A pulse electromagnetic survey delineated northwest trending conductors, suggesting the presence of sulphide horizons.

In summary, initial exploration has identified a new volcanogenic precious metal-bearing polymetallic sulphide system. Further exploration is warranted that would include drilling. The estimated cost of the proposed program is \$165,000.

## INTRODUCTION

American Bullion Minerals Ltd., a mineral exploration company based in Vancouver, B.C., has completed preliminary exploration on the Maple Leaf Property. A two phase reconnaissance prospecting and rock geochemical sampling program was carried out during the months of August and September in 1990 with follow-up geochemical and geophysical surveys conducted during July, 1991. This report summarizes the work completed during the late 1990 and 1991 field seasons.

### Location and Access

The Maple Leaf Property is located within the Atlin Mining Division in northwestern British Columbia, approximately 73 air-kilometers south-southwest of the town of Atlin, B.C. (see Figure 1). The Property is centered at coordinates 58°, 56' north latitude and 133°, 48' west longitude on N.T.S. map sheet 104 K/13.

Access to the Property is gained by helicopter from Atlin, B.C. Mobilization of camp equipment, drill rigs and machinery with fixed-wing aircraft is possible via Tulsequah airstrip located near the confluence of the Tulsequah and Taku Rivers approximately 35 air-kilometers southeast of the Maple Leaf Property.

### Physiography and Climate

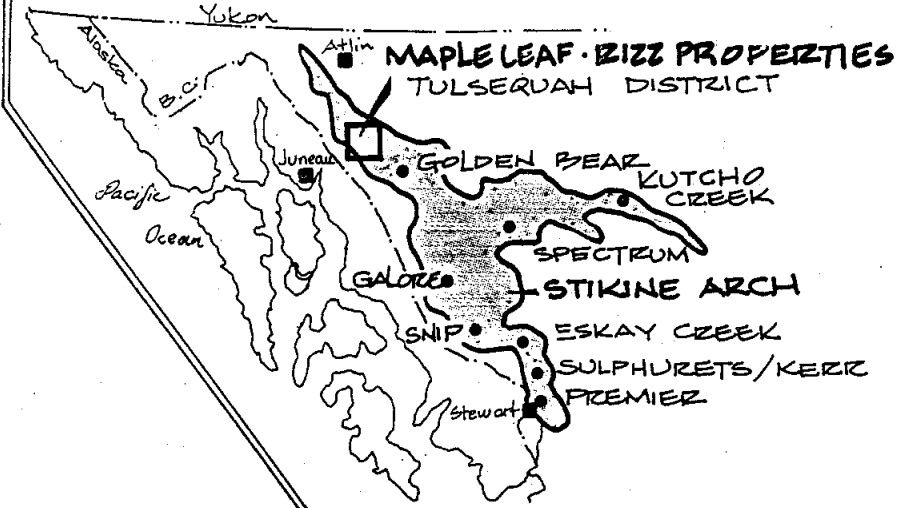
Although the topography of the Tulsequah district is generally composed of rugged, mountainous terrain, much of the Maple Leaf Property is within hummocky and gently sloping ground, allowing easy foot access over most of the grid area.

A small glacier belonging to the Tulsequah system cuts east-west through the center of the Property. This glacier has created a south facing, 183 m high cliff face that hosts recently discovered mineral showings. The elevation of the Property ranges from 640 m to 1932 m. Water is in plentiful supply during the summer field season as numerous small run-off streams drain the area. Several small lakes and ponds are also found throughout the Property.

Timber supply is sparse with only a small stand of alpine fir located along the eastern edge of a 250 meter wide lake. Alpine grasses, mosses and lichens together with thick patches of dwarf fir and juniper are common throughout the entire property area while minor tag alder is restricted to lower elevations surrounding lakes and streams.

Precipitation is moderate to heavy, typical of the northern coastal region. Snowfall occurs in early October, limiting prospecting programs to a four month season.

Rock exposure on the Property varies from 35 to 40 percent outcrop with overburden varying in depth from one to two meters. The entire area has been glaciated but very little glacial till has been deposited. Due to the recent recession of glacial activity, only poorly developed "C" horizon soils exist.



**MAPLE LEAF PROPERTY**

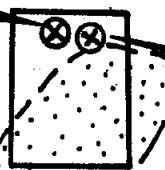


FELSIC VOLCANICS

**MAPLE LEAF**

DISCOVERY OF TWO  
POLYMETALLIC SULPHIDE ZONES  
Au, Ag, Zn, Pb, Cu

Au  
Pb  
Zn



STOCKWORK  
Au, Zn

FELSIC VOLCANICS

**RIZZ PROPERTY**

ANDESITIC VOLCANICS

STAKED

TULSEQUAH CHIEF  
Au, Ag, Zn, Pb, Cu

POLARIS TAKU - Au

PIG BULL  
Au, Ag, Zn, Pb, Cu

British Columbia  
Alaska

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TULSEQUAH DISTRICT

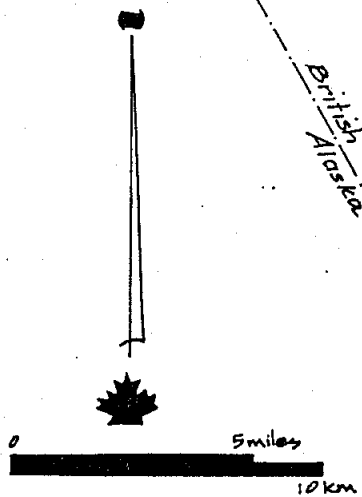


FIGURE 1



Claim Status

The Maple Leaf Property is wholly owned by American Bullion Minerals Ltd. The four contiguous, modified-grid, mining claims were staked by the company as the Glacier Light #1-4 claims (see Figure 2). The claims, located within the Atlin Mining Division, are summarized below:

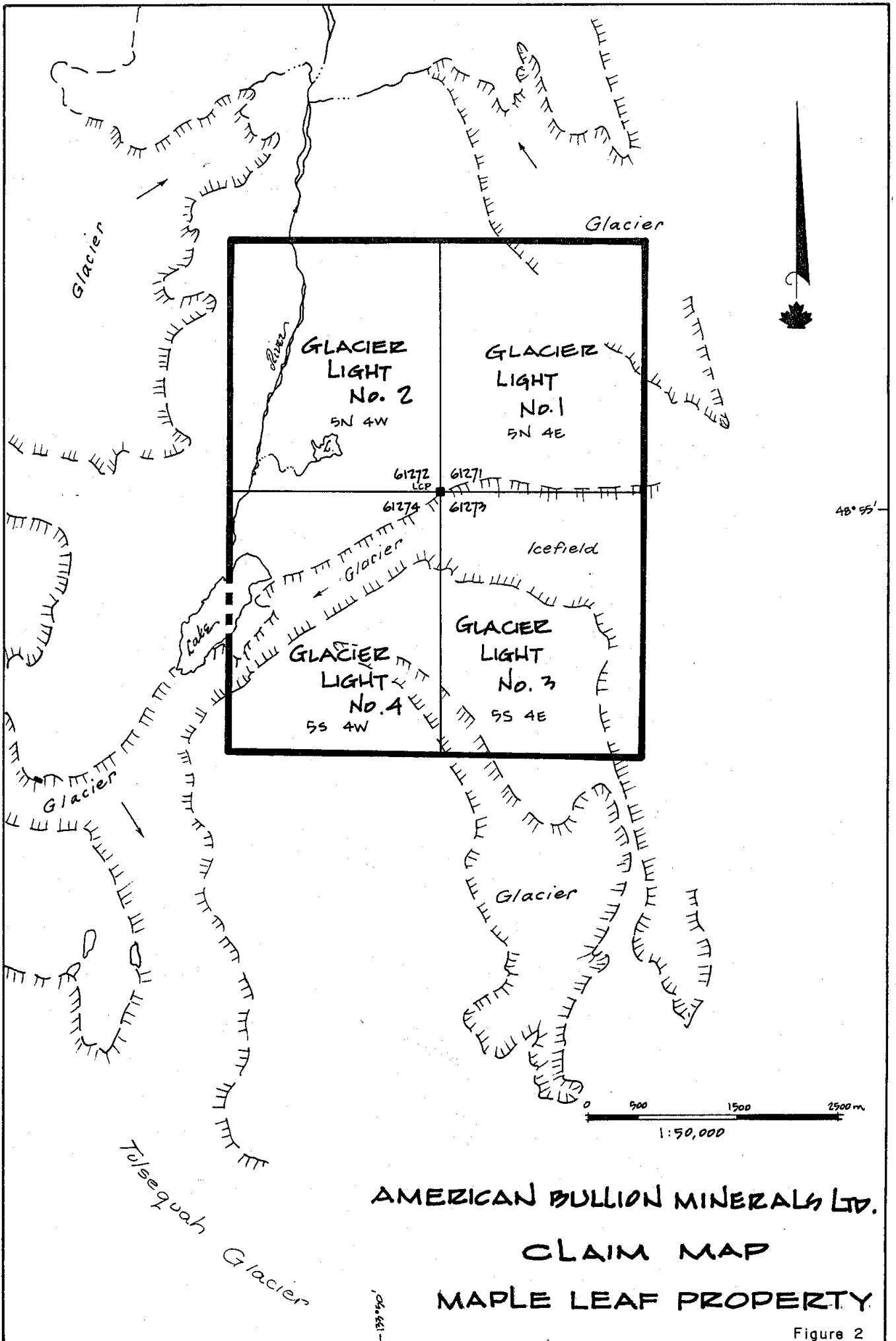
CLAIM NAME	RECORD NUMBER	RECORDING DATE	DUE DATE	NO. UNIT
Glacier Light #1	4312	Aug. 18/90	Aug. 18, 1994	20
Glacier Light #2	4313	Aug. 18/90	Aug. 18, 1994	20
Glacier Light #3	4314	Aug. 18/90	Aug. 18, 1994	20
Glacier Light #4	4315	Aug. 18/90	Aug. 18, 1994	20
			Total Units	<u>80</u>

Personnel and Operations

A two phase prospecting and reconnaissance rock geochemical program was carried out during August and September of 1990 by American Bullion Minerals Ltd. personnel. The exploration crew included:

NAME	POSITION	PERIOD	DAYS
John Brock	President	Sept. 09 - 11, 1990	3
Wayne Roberts	Vice-President, Expl.	Sept. 09 - 11, 1990	3
Peter Risby	Prospector	Sept. 09 - 11, 1990	3
Dave Heino	Prospector	Aug. 28 - Sept. 12, 1990	16
Ken Konkin	Project Geologist	Aug. 28 - Sept. 12, 1990	16

Equipment and crew were mobilized utilizing a Bell 206 helicopter contracted from Discovery Helicopters based in Atlin, B.C. Food and supplies were also obtained in Atlin.



AMERICAN BULLION MINERALS LTD.  
 CLAIM MAP  
 MAPLE LEAF PROPERTY

Figure 2

During the 1991 field season, American Bullion Minerals Ltd. personnel conducted a rock sampling and grid soil geochemical survey. Euro-Canadian Geological Services Inc. was contracted to complete 3.0 km of pulse electromagnetic survey (PEM). Personnel included the following:

<u>NAME</u>	<u>POSITION</u>	<u>PERIOD</u>	<u>DAYS</u>
Ken Konkin	Project Geologist	July 14 - 29, 1991	16
Howie Ridge	Geological Assistant	July 14 - 29, 1991	16
Marcus Sayward	Geophysicist	July 23 - 26, 1991	4

Crew and equipment were mobilized to the Tulsequah airstrip by a fixed-wing Cessna 207 aircraft from Atlin, B.C., then to the Property via a 206 helicopter. Rock, soil and silt samples were shipped to Min-En Labs in Smithers for analysis. Wayne Roberts, Vice President of Exploration for American Bullion Minerals Ltd., supervised all field operations.

### History

The Maple Leaf Property is a new discovery and has no previous history of exploration. The Tulsequah area although has a long history of mining and exploration dating back to the discovery of the Polaris-Taku, Tulsequah Chief and Big Bull Mines in the 1920's. The Polaris-Taku produced 760,000 tons of ore yielding 231,000 ounces gold, 12,000 ounces silver and 90 tons of copper during eleven years of operation. Combined production from the Tulsequah Chief-Big Bull Mines total 1,029,089 tons yielding 94,254 ounces gold, 3,400,773 ounces silver, 13,603 tons copper, 13,463 tons lead, 62,346 tons zinc and 227 tons cadmium. Reserves of the Tulsequah volcanogenic massive sulphide deposit currently being explored by Redfern Resources are reported at 8.6 million tons grading 1.65% Cu, 1.2% Pb, 6.5% Zn, .08 opt Au and 3.2 opt Ag.

## REGIONAL GEOLOGY

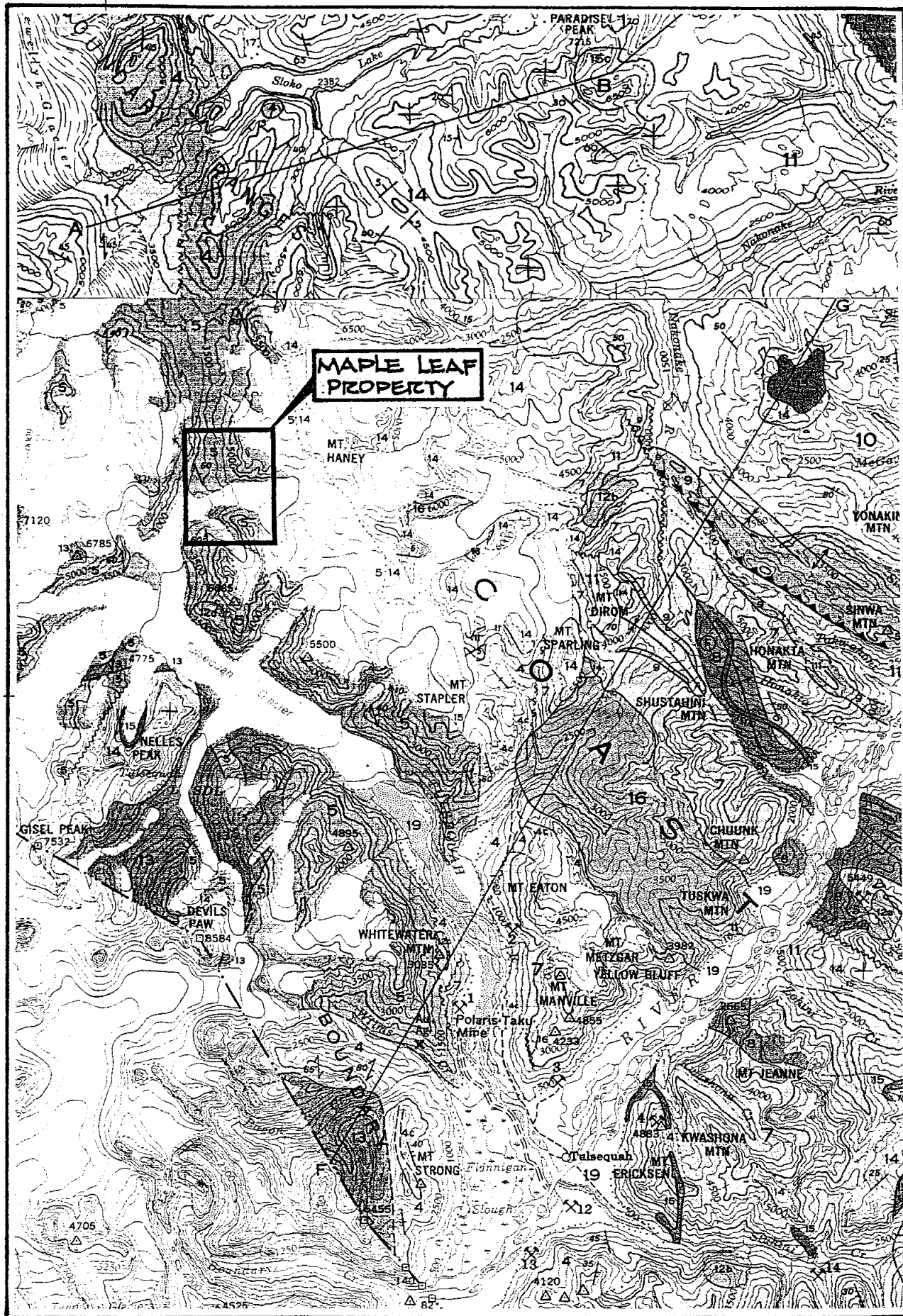
A major unconformity divides the layered rocks in the Tulsequah map-area into two broad divisions. The first includes Precambrian to Triassic rocks of the Atlin Horst and Stikine Arch. The second division of rocks are younger Mesozoic sedimentary and volcanic rocks lying between the Stikine Arch and Atlin Horst. Much of the western part of the 1:250,000 scale map-area is underlain by granitic rocks of the Coast Crystalline Belt. (see Figure 3).

Near the Canadian-USA border the rocks are mostly Paleozoic age metamorphics intruded by Cretaceous-Tertiary age granitic Coast Plutonic Complex. Late Paleozoic age andesitic units predominately underlie the district near the Taku-Tulsequah River confluence, while metamorphosed felsic volcanics and sediments are encountered within the property area.

Unconformably overlying the late Paleozoic volcanics are the Upper Triassic Stuhini Group volcanic and volcanoclastic units. These rocks are in turn overlain by late Cretaceous and early Tertiary Sloko Group intermediate volcanics and derived sediments. The eastern region of the Tulsequah map-area is overlain by flat-lying late Tertiary and Pleistocene basalt.

Structurally, three major episodes of tectonic activity are documented in the Tulsequah map-area. The three episodes, culminating in mid-Triassic, Upper Jurassic and early Tertiary time, left major unconformities. The oldest mid-Triassic Tahltanian Orogeny was a time of uplift, folding, regional metamorphism and granitic intrusion. It preceded the Upper Triassic period of volcanism and clastic sedimentation. Folding and deformation of the Tahltanian Orogeny was partly masked by younger less intense folds of Upper Jurassic age. Tectonic structures related to the early Tertiary deformation can only be observed where Sloko Group rocks are affected.

The northwesterly trending King Salmon Thrust Fault and Nahlin Faults are located in the northeast corner of the Tulsequah map-area. The area is predominantly underlain by clastic sediments of Jurassic age Laberge Group and limestone of Upper Triassic age Sinwa Formation.

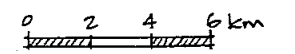


# LEGEND

- QUATERNARY**  
PLEISTOCENE AND RECENT
- 19** Fluvialite gravel, sand, silt; glacial outwash, till, alpine moraine and undifferentiated colluvium; 19a, landslides
- TERTIARY AND QUATERNARY**  
LATE TERTIARY AND PLEISTOCENE  
LEVEL MOUNTAIN GROUP
- 17** Basalt, olivine basalt, related pyroclastic rocks; in part younger than some of 19
- HEART PEAKS FORMATION:** rusty-weathering trachyte and rhyolite flows, pyroclastic rocks, and related intrusions
- CRETACEOUS AND TERTIARY**  
LATE CRETACEOUS AND EARLY TERTIARY  
SLOKO GROUP
- 14** Light green, purple and white rhyolite, dacite, and trachyte flows, pyroclastic rocks, and derived sediments
- 16** Probably genetically related to 14; 15. Feisite, quartz-feldspar porphyry 16. Medium- to coarse-grained, pink, biotite-hornblende quartz monzonite
- PRE-UPPER CRETACEOUS**
- 13** CENTRAL PLUTONIC COMPLEX: granodiorite, quartz diorite; minor diorite, leuco-granite, migmatite and gmatite; age and relationship to 12 uncertain
- JURASSIC AND/OR CRETACEOUS**  
POST MIDDLE JURASSIC
- 12** 12a. hornblende-biotite granodiorite; 12b. biotite-hornblende quartz diorite; 12c. hornblende diorite; 12d. augite diorite. Age and relationship to 13 uncertain
- JURASSIC**  
LOWER AND MIDDLE JURASSIC  
LABERGE GROUP (10, 11)
- 11** TAKWAHONI FORMATION: granite-boulder conglomerate, chert-pebble conglomerate, greywacke, quartzose sandstone, siltstone, shale
- 10** INKLIN FORMATION: well bedded greywacke, graded siltstone and silty sandstone, pebbly mudstone, limy pebble conglomerate; 10a, limestone
- MESOZOIC**
- TRIASSIC**  
UPPER TRIASSIC
- 9** SINWA FORMATION: limestone; minor sandstone, argillite, chert
- STUHINI GROUP (7, 8)
- 7** Mainly volcanic rocks; andesite and basalt flows, pillow lava, volcanic breccia and agglomerate, lapilli tuff; minor volcanic sandstone, greywacke, and siltstone
- 8** KING SALMON FORMATION: thick bedded, dark greywacke, conglomerate, mudstone, siltstone, and shale; minor andesitic lava, volcanic breccia, tuff, limestone, limy shale; locally enclosed in 7
- LOWER OR MIDDLE TRIASSIC (?)**
- 6** Fine- to medium-grained, strongly foliated diorite, quartz diorite; and minor granodiorite; age uncertain
- TRIASSIC AND EARLIER**  
PRE-UPPER TRIASSIC
- 4** Fine-grained, clastic sediments and intercalated volcanic rocks, largely altered to greenstone and phyllite; chert, jasper, greywacke, limestone; 4a, mainly chert, slate, argillite; minor greenstone; 4b, mainly greenstone; 4c, limestone, may include some 1
- 5** Quartz-albite-amphibole gneiss; quartz-biotite schist, garnetiferous schist, augen gneiss, tremolite marble; mainly metamorphosed equivalents of 3 and 4, may be in part older than 3
- PERMIAN**
- 3** Chiefly limestone and dolomitic limestone; minor chert, argillite, sandy limestone
- PALEOZOIC**
- PERMIAN (?)**
- 2** May not all be of the same age  
1. Peridotite, serpentinite, small irregular bodies of gabbro and pyroxene diorite  
2. Fine- to medium-grained gabbro and pyroxene diorite
- A** Diorite gneiss, amphibolite, migmatite; age unknown



NOTE:  
Geology: After Souther 1971  
Tulsequah and  
Juneau Geology : Map 1262A



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**MAPLE LEAF PROPERTY**

**REGIONAL GEOLOGY MAP**

ATLIN MINING DIVISION P.C.

Geology by:	NTS: 10AK/13	Plate No.
Drawn by: V. Hutchings	Scale: 1:250,000	3
Date:		

### PROPERTY GEOLOGY

The Maple Leaf Property is largely underlain by regionally metamorphosed sedimentary and volcanic rock units of Paleozoic age. Rock types consist of finely laminated quartz-feldspar-mica gneiss and schist along with micaceous quartzite interlayered with lesser amounts of fine-grained hornblende-biotite-chlorite schist and quartz-sericite schist. Strong crenulation cleavage is exhibited within various schistose units particularly the sericite schist. Andesite dykes to several meters thick with vertical dips trend parallel to the north-northwest trending metamorphic foliation.

The host rock containing volcanogenic sulphide mineralization is an intensely altered sericite-schist, that is locally highly silicified. This sericite schist appears to be a metamorphosed felsic volcanic containing a siliceous exhalative with polymetallic sulphide mineralization (see Figure 4).

A least three distinct felsic volcanic exhalative horizons occur on the Property; the 3100, 3300 and 3500 zones. The zones are characteristically yellow-orange iron stained, and gossaneous in outcrop. The felsic volcanics are observed to be underlain by meta-sediments interfingered with intermediate meta-volcanics and overlain by meta-andesites. The felsic volcanics are up to 100 meters in thickness and traceable for over 1000 meters along strike. Rock units trend northwest and dip moderately to the east.

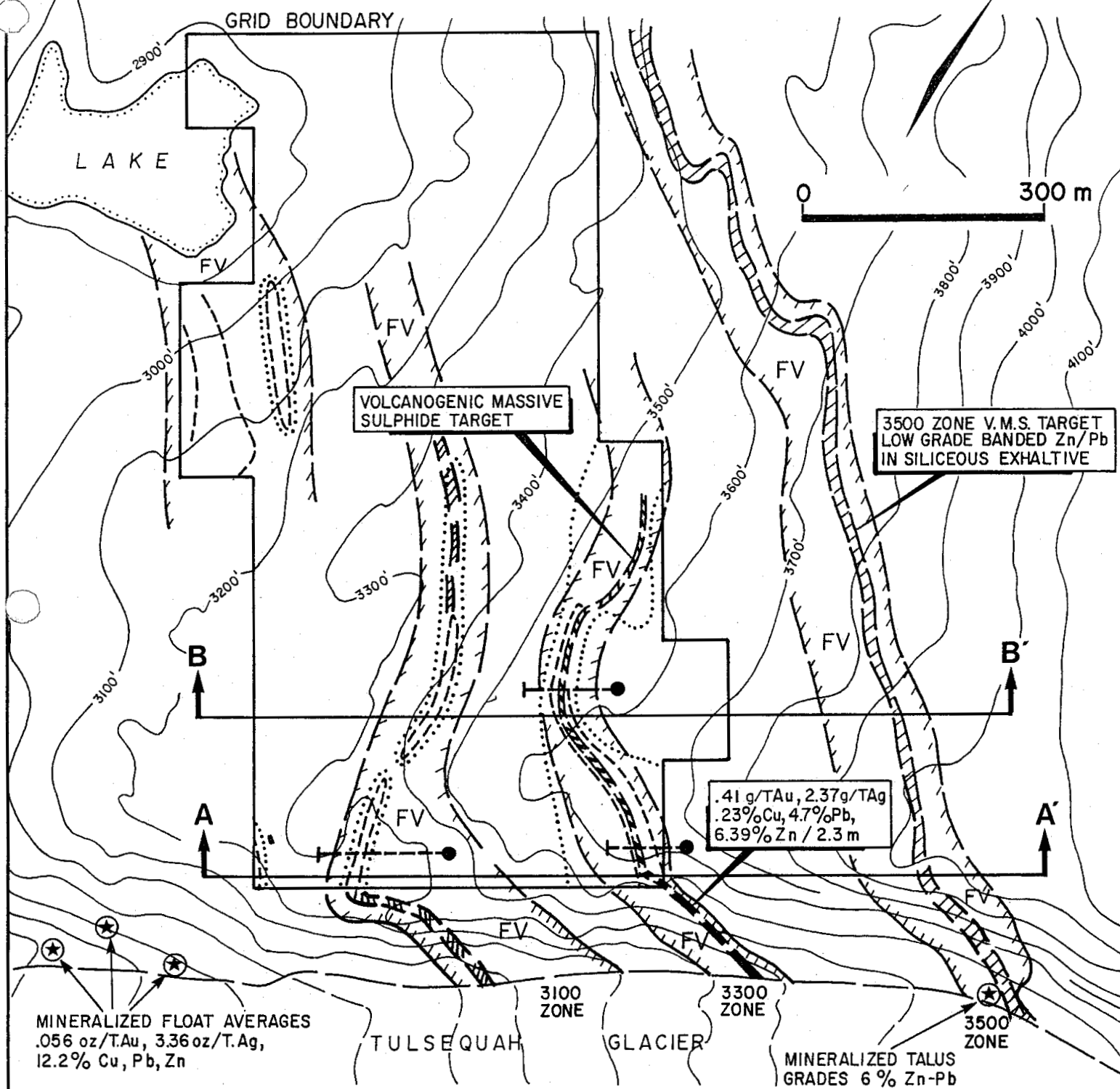
### MINERALIZATION

Mineralization occurring on the Maple Leaf Property consists of volcanogenic polymetallic sulphides in a siliceous exhalative host. Sulphides observed in float and outcrop include pyrite, sphalerite, galena, and chalcopryite. The polymetallic sulphide mineralization occurs as disseminated massive, brecciated and banded styles within three horizons. The most impressive and abundant mineralization has been found in large float boulders down ice west of the mineralized zones.

A small basin, located approximately 800 m west of the cliff face, containing the discovery showing, has many transported, mineralized boulders. Systematic grab and chip sampling of 18 boulder samples averaged 1.92 g/T Au, 115.20 g/T Ag, .17% Cu, 5.10% Pb, and 6.90% Zn. Values as high as 5.14 g/T Au, 129.60 g/T Ag, 11.25% Zn, 8.22% Pb and .15% Cu were obtained from the boulder sampling. (see Figure 5).

A 2.3 meter wide channel cut taken from the upper portion of 3300 Zone in the discovery showing yielded values of .41 g/T Au, 81.26 g/T Ag, .225% Cu, 4.67% Pb and 6.27% Zn. A grab sample taken from the same zone yielded .96 g/T Au, 112.46 g/T Ag, .226% Cu, 6.16% Pb and 7.68% Zn. As this showing is located on a steep cliff face, additional follow-up sampling would require the use of mountaineering gear.

# MAPLE LEAF PROPERTY COMPILATION MAP



MINERALIZED FLOAT AVERAGES  
.056 oz/T.Au, 3.36 oz/T.Ag,  
12.2% Cu, Pb, Zn

.41 g/TAu, 2.37g/TAg  
.23%Cu, 4.7%Pb,  
6.39%Zn / 2.3 m

3500 ZONE V.M.S. TARGET  
LOW GRADE BANDED Zn/Pb  
IN SILICEOUS EXHALTIVE

## LEGEND

- PROPOSED DRILL HOLE
- ⋯ ZINC SOIL ANOMALY (+200ppm)
- - - COPPER-LEAD SOIL ANOMALY (+50/+200 ppm)
- FV FELSIC VOLCANIC HOST

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Figure 4

ROCK GEOCHEMICAL SURVEY

During the 1990 and 1991 field seasons a total of 75 rock samples were collected from float boulders and outcrop located on the Maple Leaf Property. Samples were shipped to Min-En Labs and analysed for gold, silver, copper, lead and zinc. Figure 5 illustrates sample locations and assay values. Analytical data and individual sample descriptions are given in the appendicies.

Sampling has been minimal along the cliff faces of the 3100 and 3300 Zone and has not been attempted along the 3500 Zone cliff face. The cliff face should be sampled by personnel utilizing mountaineering gear. A channel cut was taken from the upper contact zone of the 3300 zone. Semi-massive to disseminated sphalerite and galena with disseminated pyrite and chalcopyrite was present in a silicified felsic volcanic host. The sulphides occur in deformed lenses within a leached crenulated, schistose, sericite altered host. Continued saw-cut channel sampling is recommended for sampling the smooth, glaciated cliff face. Systematic sampling of glacially deposited brecciated and layered, semi-massive polymetallic sulphides, hosted by large (up to 1.5 m wide) silicified felsic volcanic boulders west of the 3100, 3300 and 3500 Zones, suggests the source of the mineralization to be from the cliff face. Further prospecting and detailed sampling of the cliff face is recommended.



### SOIL AND SILT GEOCHEMICAL SURVEYS

During the 1991 field season, a total of 124 soil samples were collected from 25 meter stations on lines spaced 200 meters apart. Soil horizon development is poor. Generally, a thin humus layer covers a grey, pale brown "C" soil horizon containing small rock fragments.

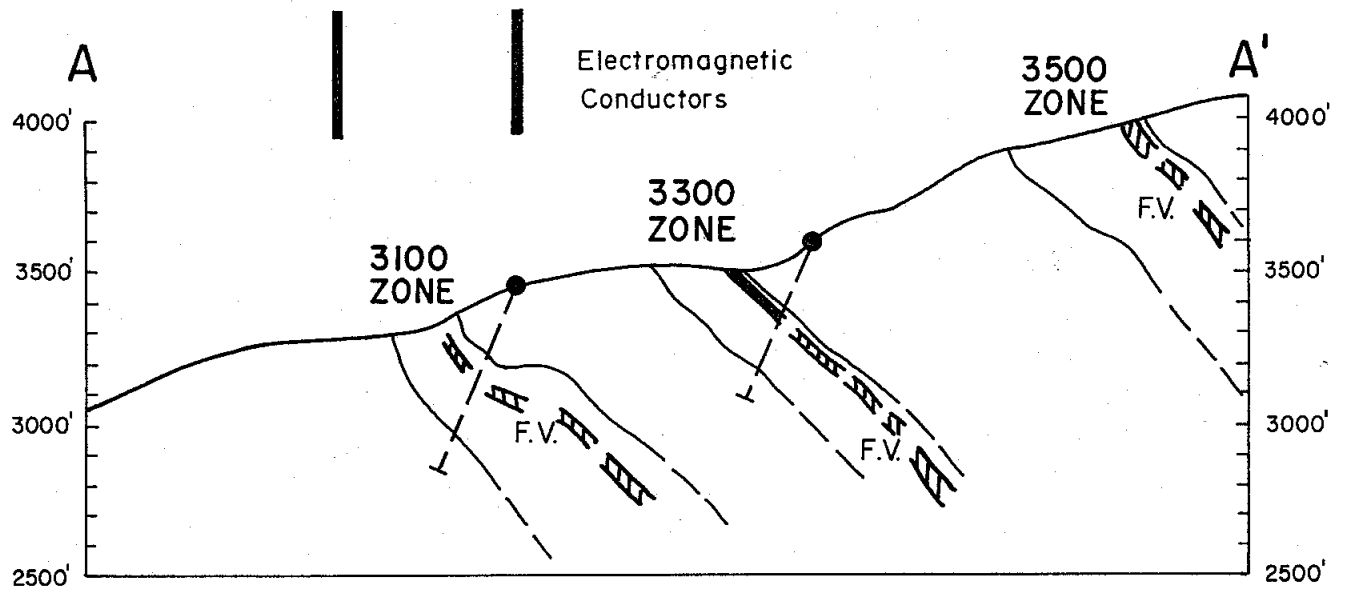
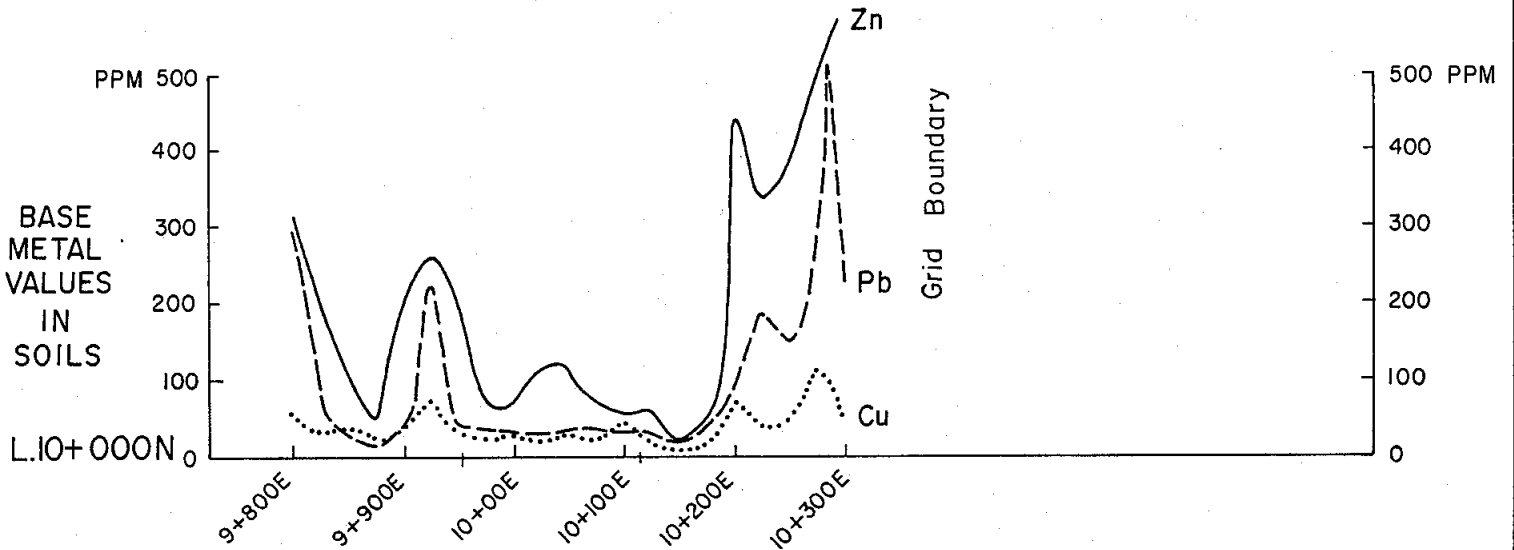
Soil samples were shipped to Min-En Labs and were analysed by atomic absorption for gold, copper, lead and zinc. Several coincident multielement anomalies are present over the felsic, volcanic host unit. The soil geochemical anomalies are shown in plan view on Figure 6 while Figures 7 and 8 demonstrate the anomalous nature of the felsic volcanic exhalative zones along sections A-A' and B-B'. The multielement anomalies coincide with northwesterly lithological and structural trends on the Property. Unfortunately the grid was not extended far enough to the east to cover the projected extension of the 3500 Zone mineralization.

The 3100 and 3300 Zones are both reflected by a 400 meter-long copper-lead-zinc soil anomaly overlying the favourable felsic volcanic horizons. The zinc anomaly outlining the 3300 Zone is "open" beyond the limits of the sampled area.

During the 1990 and 1991 field seasons, a total of 32 silt samples were taken from various small streams within and beyond the limits of the Property. Analytical results are plotted on Figure 5. The silt samples were analysed for gold, silver, copper lead and zinc by Min-En Labs. The lack of anomalous values obtained during this program is most likely attributable to the recent glacial melt and absence of erosion.

# MAPLE LEAF PROPERTY

## SECTION A-A'



### LEGEND

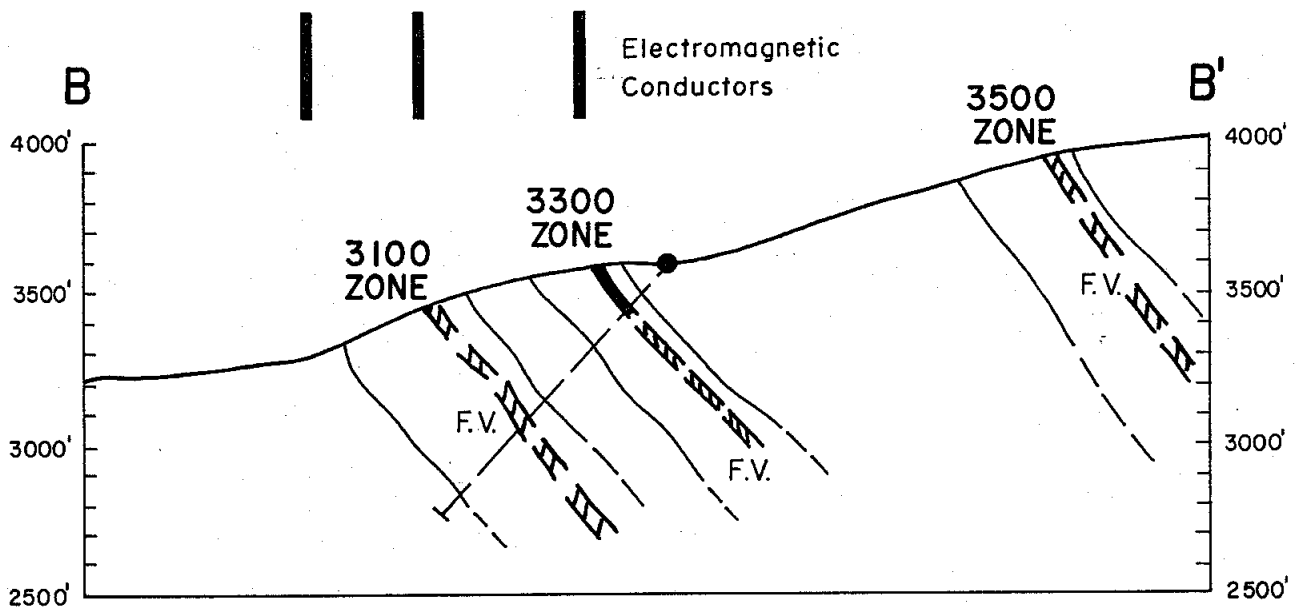
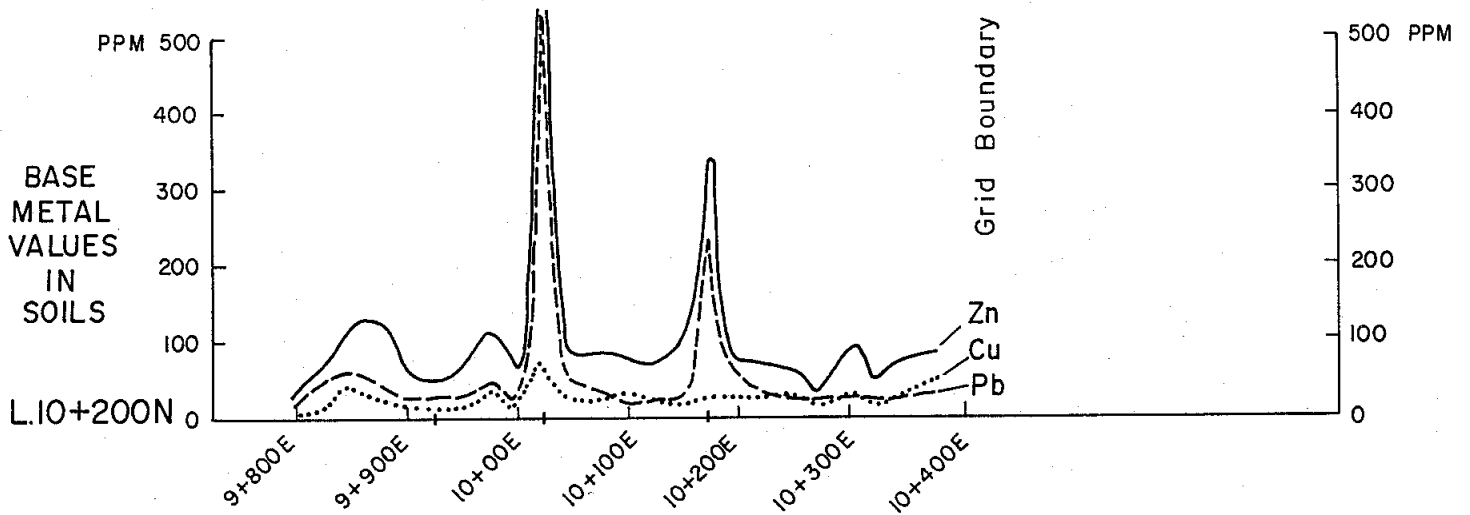
- PROPOSED DRILL HOLE
- ▨ VOLCANOGENIC MASSIVE SULPHIDE TARGET
- FV FELSIC VOLCANIC HOST

0 300 m

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# MAPLE LEAF PROPERTY

## SECTION B-B'



### LEGEND

- PROPOSED DRILL HOLE
- ▨ VOLCANOGENIC MASSIVE SULPHIDE TARGET
- FV FELSIC VOLCANIC HOST

0 300 m

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PULSE ELECTROMAGNETIC SURVEY (PEM)

In late July 1991 a test Crone PEM survey was conducted on the American Bullion Maple Project in an attempt to trace the extent of polymetallic massive sulphide horizons found in outcrop on a cliff face. Six 500 meter long lines with 200 meter spacings were completed. Station Readings were taken at 25 meter intervals.

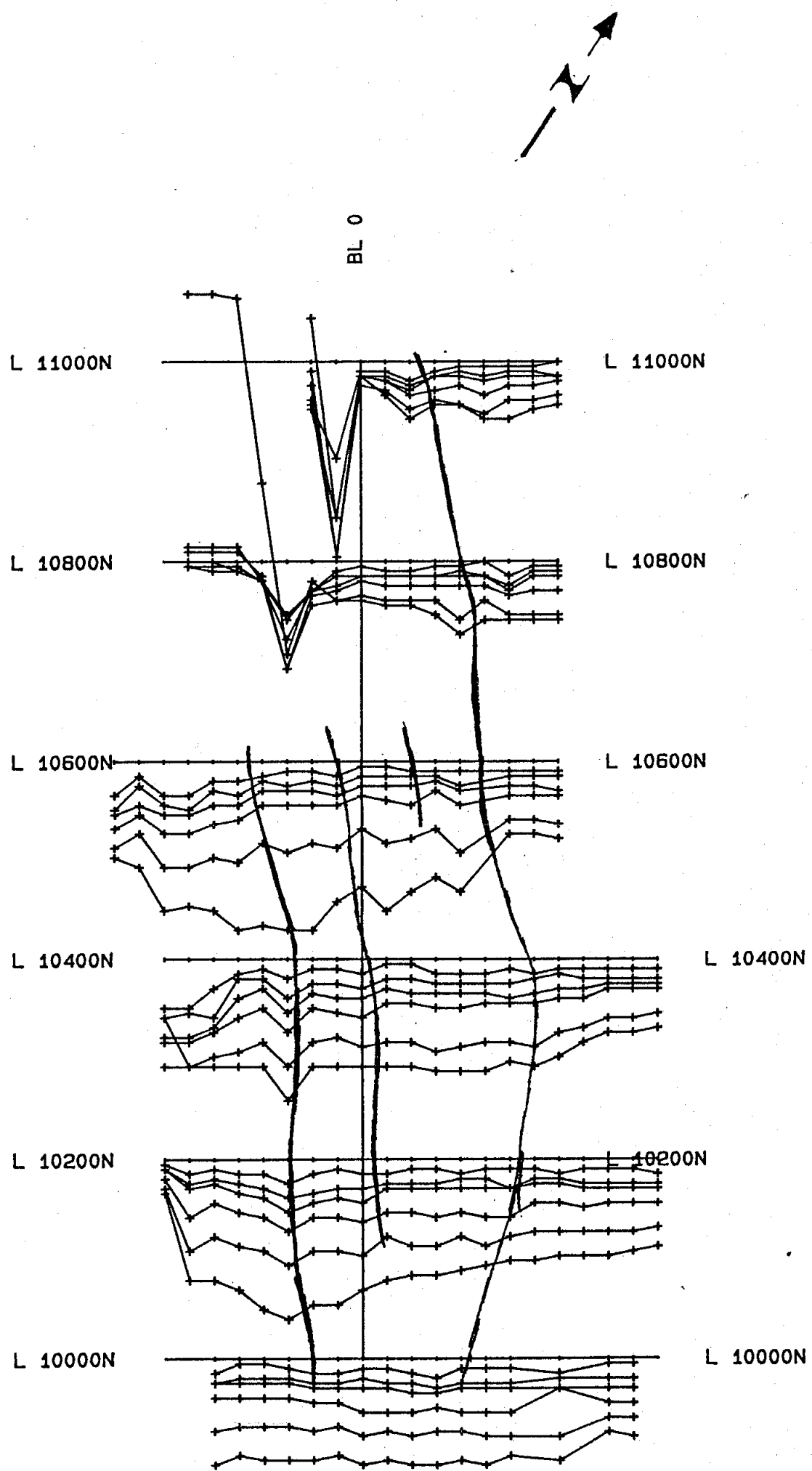
The Crone Pulse Electromagnetic system is a time domain E.M. system which can be used in the standard horizontal loop mode. The primary field for the standard horizontal loop method is produced by a portable transmitter loop of 6, 10, or 50 meters diameter. A depth of search of approximately 75% of the separation is obtainable due to the high sensitivity of the receiver system. As measurements of the time derivative of the secondary field occur during primary field off time the method is relatively free from geometrical restrictions. Interpretation is accomplished with the aid of Slingram horizontal loop curves.

The primary field for the 2000 watt fixed source system is provided by a 500 by 1000 meter transmitter loop. A 150 by 150 meter loop is used with the 500 watt system. The time derivative of the secondary field resulting from the presence of a conductor is sampled during eight windows on the decay curve, during the primary field off time. These eight channels of secondary field

information are equivalent to a wide spectrum of frequencies from approximately 2KHz to 16 KHz thus allowing conductor character and strength determination. The vertical and horizontal components are obtained at each station on the traverse, using the convention of vertical component positive upwards and horizontal component positive away from the transmitter loop. In areas of high surficial conductivity the primary field on time of 10.8 ms and the receiver delay times may be doubled in order to obtain late time information. Time is received by radio or cable link.

The apparent primary field information is recorded at each occupied station. Normalization of the data with respect to instrument gain produces a constant gain plot. In this format a vertical plate-like conductor anomaly would be symmetric. Normalization with respect to the apparent primary field at each station provides a constant primary field plot that is useful in recognizing conductors in the far primary field and in correlating anomaly amplitudes from line to line. The anomalies lose symmetry in this format but the condition of anomaly amplitude dependence on distance from the loop is relaxed. In the case of stacked profiles on plan maps it is practical to use advantages of both of these methods and plot a constant gain profile normalized to the apparent primary field at the station near the conductor axis. This facilitates the correlation of conductors from line to line at varying distance in coverage from several transmitting loops.

Both the vertical and horizontal component of the transient electromagnetic signal were recorded and are presented as stacked profiles in Figures 9 and 10. The electromagnetic anomalies coincide with the soil geochemical anomalies (see Fig. 7 and 8).



**CONDUCTOR** 

**PLOTTING SCALE ALL CHANNELS 10 PPK/CM**

AMERICAN BULLION

MAPLE PROJECT  
CRONE PEM SURVEY  
VERTICAL COMPONENT

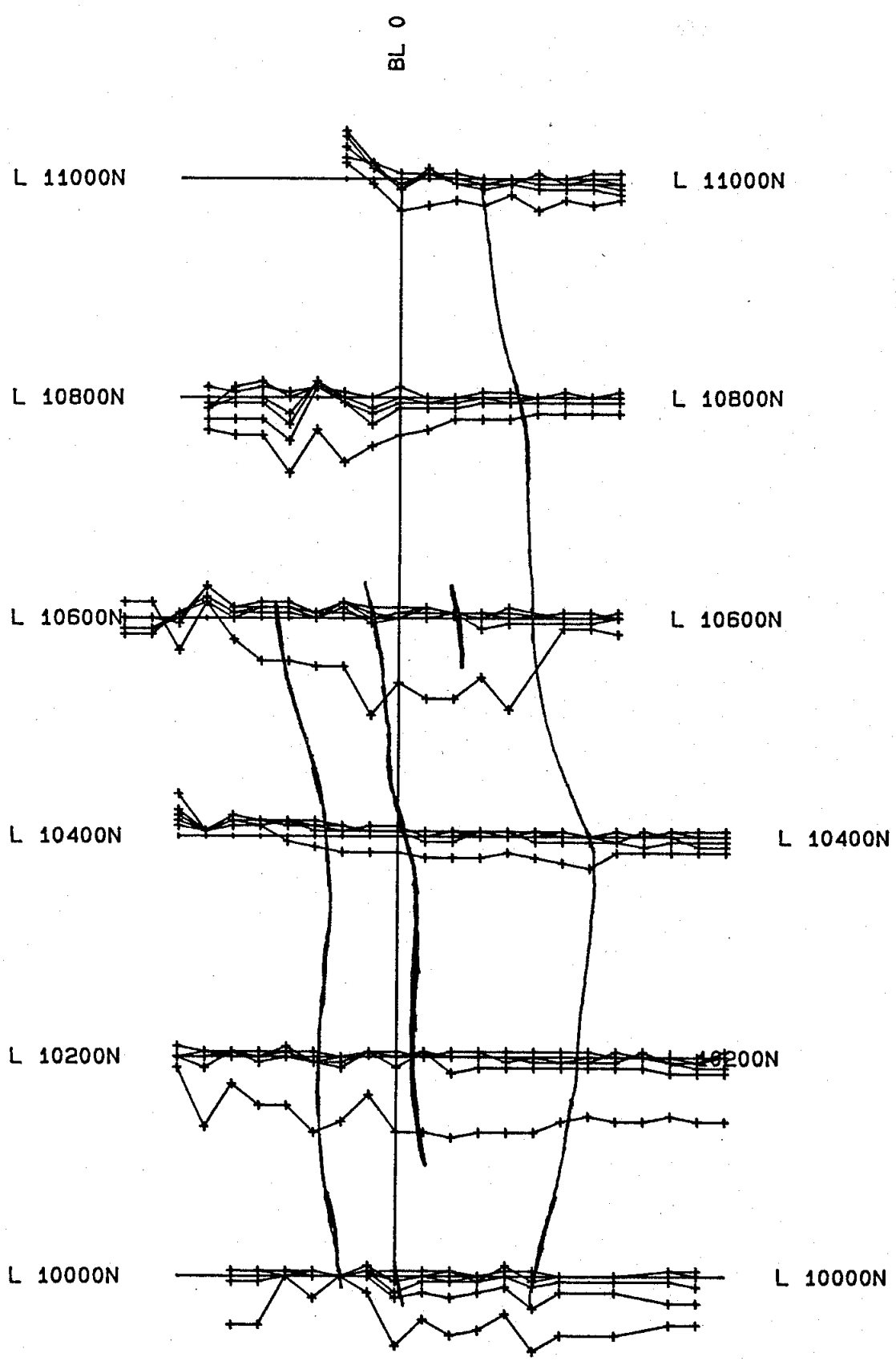
Scale 1: 5000.0



Date: SEPT 1991

Fig. 9

EURO-CANADIAN GEOLOGICAL



**CONDUCTOR** 

**PLOTTING SCALE ALL CHANNELS 10 PPK/CM**

AMERICAN BULLION

MAPLE PROJECT  
CRONE PEM SURVEY  
HORIZONTAL COMPONENT

Scale 1: 5000.0



Date: SEPT 1991

Fig. 10

EURO-CANADIAN GEOLOGICAL

The polymetallic massive sulphide targeted by this survey contains a very high percentage of sphalerite. Sphalerite is a poorly conducting sulphide resulting in poor conductivity-thickness constants even when large conductors are present. Several weak near surface (within 25 m) conductors were located by the survey. The conductors strike generally grid north-south. These conductors may be a response of massive sulphide, shear zones and/or graphite. The proximity of known massive sulphide outcroppings increases the likelihood of a massive sulphide source.

### CONCLUSIONS AND RECOMMENDATIONS

American Bullion Minerals' prospecting crews have discovered a large volcanogenic sulphide system within the Tulsequah District in northwestern British Columbia. Volcanogenic precious metal bearing polymetallic sulphides occur within a thick section of felsic volcanic rocks. Three zones of yellow-stained felsic volcanics are structurally underlain by sediments with interfingering intermediate volcanics and overlain by intermediate volcanics. All units trend northwest and dip moderately to the northeast. The mineralization found by American Bullion is an original discovery, there being no other evidence of prior exploration.

The 3300 Zone consists of a 100 meter thick section of pyritic felsic volcanics with zones of volcanogenic sulphides associated with a siliceous exhalative unit. Prospecting along the discovery showing has identified mineralized horizons of polymetallic sulphides. A channel sample taken across

the 3300 Zone yielded a 2.3 meter thick horizon of massive sulphides assayed .41 g/T Au, 81.26 g/T Ag, .23% Cu, 4.7% Pb and 6.3% Zn. The 3100 Zone has been traced along surface for over 460 meters. Within the area of the 3100 Zone hundreds of large float blocks of banded sulphide have been found that grade of 5.14 g/T Au, 128.60 g/T Ag, 0.15% Cu, 8.22% Pb, and 11.25% Zn. Assays from systematic chip sampling of 18 blocks averaged 1.92 g/T Au, 115.20 g/T Ag, 0.17% Cu, 5.12% Pb and 6.9% Zn.

A preliminary soil sampling grid has outlined a 400 meter long copper, lead and zinc geochemical anomaly overlying the favourable horizon. Anomalous zinc response has been outlined for over 600 meters and continues beyond the limits of the grid. Additional coincident copper, lead and zinc anomalies outlined suggest potential for additional sub-parallel zones of mineralization. A test survey of deep penetrating Pulse EM has also defined weak conductors within the favourable horizons.

The 3500 Zone occurs in a cliff forming area 120 meters above the 3300 Zone and consists of 100 meter thick section of pyritic felsic volcanics. These felsic rocks host a siliceous exhalative horizon containing disseminated and laminated zinc-lead mineralization that has been traced over a strike length of 1.0 km. Preliminary sampling of banded sulphides near the discovery showing yielded assays of 6% combined zinc-lead and 75.43 g/T Ag. It is recommended that the soil grid be extended 400 meters to the east to outline the mineralized horizon in the 3500 Zone. The area should also be further prospected, sampled and mapped.

Mapping along the 200 meter high bluff that contains the 3100, 3300, and 3500 Zones indicate that the thickness and grade of polymetallic sulphide mineralization is increasing with depth.

Preliminary targetting programs have outlined several horizons of precious metal bearing volcanogenic massive sulphide mineralization within felsic volcanics. Mapping, sampling and geochemical soil sampling have indicated strike lengths in excess of 1.0 km. Attractive gold, silver, copper, lead and zinc grades indicate excellent opportunity for discovery of a multi-million ton volcanogenic massive sulphide deposit.

A three hole, 450 meter diamond drill hole program is recommended to test for polymetallic mineralization in the 3100 and 3300 Zones during the 1992 field season. The estimated cost of the 1992 exploration program is \$165,000.



STATEMENT OF 1990 AND 1991 EXPLORATION EXPENDITURES

(During the period September 19, 1990 - July 31, 1991)

<u>Exploration Function</u>	<u>Expenditures</u>
Analysis - Geochemical	\$ 2,223.00
Analysis - Assays	2,292.95
Accommodation	3,771.89
Consulting - Geological	5,920.00
Maps, Prints, Drafting	1,412.06
Expediting, Telephone	987.22
Equipment - Lease, Rentals	221.52
Equipment - Consumables	261.24
Fuel	266.05
Salaries & Wages	20,315.90
Surveys - Geological	3,450.00
Transportation - Airlines	271.38
Transportation - Fixed Wing	2,370.59
Transportation - Helicopter	27,234.73
Transportation - Vehicle	873.84
Transportation - Freight	137.39
Project Management Paid	<u>1,148.45</u>
<b>TOTAL EXPENDITURES</b>	<b><u>\$73,158.21</u></b>

PROPOSED 1992 EXPLORATION EXPENDITURES

<u>EXPLORATION FUNCTION</u>	<u>ESTIMATED COST</u>
Assays	\$ 10,000
Accommodation	8,000
Consulting - Geological	9,000
Consulting - Metallurgical	2,000
Drafting	3,000
Expediting	2,500
Drilling	45,000
Equipment - Consumables	2,000
Fuel	2,500
Property Maintenance	2,500
Salaries and Wages	17,400
Transportation - Airlines	5,200
Transportation - Fixed Wing	5,500
Transportation - Helicopter	30,000
Transportation - Vehicle	1,000
Transportation - Freight	2,000
Drill Site Preparation	3,000
Subtotal	150,100
Project Management	14,900
Total	<u>\$165,000</u>

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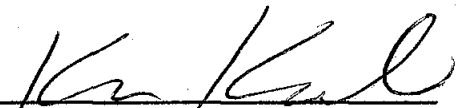
STATEMENT OF QUALIFICATIONS

I, KENNETH J. KONKIN, Geologist, resident at 4117 Burkerridge Place, in the City of West Vancouver, in the Province of British Columbia, hereby certify that:

- 1) I received a Bachelor of Science degree in Geology from the University of British Columbia in 1984.
- 2) I am a Fellow of the Geological Association of Canada (#F5743).
- 3) Since 1980, I have been involved with numerous mineral exploration programs throughout Canada and the United States of America.
- 4) I am a consulting geologist working on behalf of American Bullion Minerals Ltd.
- 5) This report is based on a review of reports, documents, maps, other technical data, and on my field work carried out during August and September, 1990 and July, 1991.
- 6) I hold no direct or indirect interest in the property, nor in any securities of American Bullion Minerals Ltd. or in any associated companies, nor do I expect to receive any.

October 30, 1991

Date

  
K.J. Konkin, B. Sc., F.G.A.C.

**APPENDIX I**  
**ANALYTICAL METHODS**

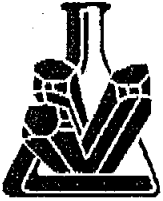


**GOLD ASSAY PROCEDURE:**  
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Samples are dried @ 95 C and when dry are crushed on a jaw crusher. The 1/4 inch output of the jaw crusher is put through a secondary roll crusher to reduce it to - 1/8 inch. The whole sample is then riffled on a Jones Riffle down to a statistically representative 300 - 400 gram sub-sample (in accordance with Gy's statistical rules). This sub-sample is then pulverized on a ring pulverizer to 95% minus 120 mesh, rolled and bagged for analysis. The remaining reject from the Jones Riffle is bagged and stored.

Samples are fire assayed using one assay ton sample weight. The samples are fluxed, a silver inquart added and mixed. The assays are fused in batches of 24 assays along with a natural standard and a blank. This batch of 26 assays is carried through the whole procedure as a set. After cupellation the precious metal beads are transferred into new glassware, dissolved, diluted to volume and mixed.

These aqua regia solutions are analyzed on an atomic absorption spectrometer using a suitable standard set. The natural standard fused along with this set must be within 3 standard deviations of its known or the whole set is re-assayed. Likewise the blank must be less than 0.015 g/tonne.



ANALYTICAL PROCEDURE REPORT FOR ASSESSMENT WORK

-----  
PROCEDURE FOR AU, PT OR PD FIRE GEOCHEM  
-----

Geochemical samples for Au Pt Pd are processed by Min-En Laboratories, at 705 West 15th St., North Vancouver, B. C., laboratory employing the following procedures:

After drying the samples at 95 C, soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed and pulverized on a ring mill pulverizer.

A suitable sample weight; 15.00 or 30.00 grams is fire assay preconcentrated. The precious metal beads are taken into solution with aqua regia and made to volume.

For Au only, samples are aspirated on an atomic absorption spectrometer with a suitable set of standard solutions. If samples are for Au plus Pt or Pd, the sample solution is analyzed in an inductively coupled plasma spectrometer with reference to a suitable standard set.



ANALYTICAL PRECEDURE REPORT FOR ASSESSMENT WORK:

-----  
PROCEDURE FOR WET GOLD GEOCHEMICAL ANALYSIS  
-----

Samples are processed by Min-En Laboratories, at 705 West 15th Street, North Vancouver, employing the following procedures.

After drying the samples at 95 C, soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized on a ring mill pulverizer.

5.00 grams of sample is weighed into porcelain crucibles and cindered @ 800 C for 3 hours. Samples are then transferred to beakers and digested using aqua regia, diluted to volume and mixed.

Further oxidation and treatment of 75% of the above solution is then extracted for gold by Methyl Iso-butyl Ketone.

The MIBK solutions are analyzed on an atomic absorption spectrometer using a suitable standard set.





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ANALYTICAL PROCEDURE REPORT FOR ASSESSMENT WORK:

-----  
PROCEDURE FOR TRACE ELEMENT ICP  
-----

Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cu,  
Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb,  
Sr, Th, U, V, Zn, Ga, Sn, W, Cr

Samples are processed by Min-En Laboratories, at 705 West 15th Street, North Vancouver, employing the following procedures.

After drying the samples at 95 C, soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized on a ring mill pulverizer.

0.50 gram of the sample is digested for 2 hours with an aqua regia mixture. After cooling samples are diluted to standard volume.

The solutions are analyzed by computer operated Jarrall Ash 9000 ICAP or Jobin Yvon 70 Type II Inductively Coupled Plasma Spectrometers.



**MINERAL  
• ENVIRONMENTS  
LABORATORIES**

Division of Assayers Corp. Ltd.

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ANALYTICAL PROCEDURE REPORT FOR ASSESSMENT WORK:

-----  
PROCEDURE FOR AG, CU, PB, ZN, NI, CO OR CD GEOCHEM  
-----

Samples are processed by Min-En Laboratories at 705 West 15th Street, North Vancouver, employing the following procedures.

After drying the samples at 95 C, soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by jaw crusher and pulverized on a ring mill pulverizer.

0.50 gram of the sample is digested for 2 hours with an aqua regia mixture. After cooling samples are diluted to standard volume.

The solutions are analysed on atomic absorption spectrometers using the appropriate standard sets. A background correction can be applied to Ag, Pb, and Cd if requested.

**APPENDIX II**

**ANALYTICAL RESULTS**

SEP 25 1990

VANCOUVER OFFICE:  
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NORTH VANCOUVER, B.C. CANADA V7M 1T2  
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FAX (604) 980-9621

**THUNDER BAY LAB.:**  
TELEPHONE (807) 622-8958  
FAX (807) 623-5931

**SMITHERS LAB.:**  
TELEPHONE/FAX (604) 847-3004

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Geochemical Analysis Certificate

OV-1472-RG1

Company: **AMERICAN BULLION**  
Project: **MAPLE LEAF/RECONN**  
Attn: **WAYNE ROBERTS**

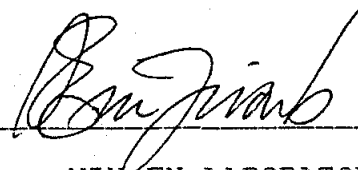
Date: **SEP-19-90**

Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 10 ROCK samples submitted SEP-17-90 by W.ROBERTS.

Sample Number	AL-FIRE PPB	AG PPM	CU PPM	PB PPM	ZN PPM
11501	61	13.6	110	1900	68
11502	525	20.9	15000	3350	690
11503	2	1.6	445	64	67
11504	6	2.4	49	42	36
11505	7	9.4	30	4400	4750
11506	3	0.9	70	182	425
11507	4	1.4	40	1060	1450
11508	2	0.9	20	32	82
11551	1	1.3	80	33	69
11556	4	1.6	31	27	94

Certified by \_\_\_\_\_



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FAX (807) 623-5931

**SMITHERS LAB.:**  
TELEPHONE/FAX (604) 847-3004

Assay Certificate

OV-1472-RA1

Company: **AMERICAN BULLION**  
Project: **MAPLE LEAF/RECONN**  
Attn: **WAYNE ROBERTS**

Date: **SEP-18-90**  
Copy 1. **AMERICAN BULLION, VANCOUVER, B.C.**

*We hereby certify* the following Assay of 10 ROCK samples submitted SEP-17-90 by W.ROBERTS.

Sample Number	AU g/tonne	AU oz/ton	AG g/tonne	AG oz/ton	CU %	PB %	ZN %
11557	.01	.001					
11558	.10	.003	4.0	.12	.038	.06	.06
11559	.02	.001	195.0	5.69	.140	.65	32.90
11560	.09	.003	8.1	.24	.277		
11561	.01	.001	2.2	.06			
11562	.02	.001	1.8	.05			
11563	.01	.001	0.5	.01			
11564	.01	.001	1.0	.03			
11565	.01	.001	1.1	.03			
11566	5.65	.165	342.0	9.98	.298	5.85	.02

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FAX (604) 980-9621

**THUNDER BAY LAB.:**  
TELEPHONE (807) 622-8958  
FAX (807) 623-5931

**SMITHERS LAB.:**  
TELEPHONE/FAX (604) 847-3004

Assay Certificate

OV-1435-RA1

Company: **AMERICAN BULLION**  
Project: **MAPLE LEAF R122**  
Attn: **JOHN BROCK**

Date: **SEP-14-90**

Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

We hereby certify the following Assay of 24 ROCK samples submitted SEP-12-90 by JOHN BROCK.

Sample Number	AU g/tonne	AU oz/ton	AG g/tonne	AG oz/ton	CU %	PB %	ZN %
11509	.01	.001	0.6	.02	.003	.01	.01
11510	.44	.013	10.2	.30	.039	.02	.67
11511	.05	.001	4.1	.12	.014	.01	1.10
11512	.03	.001	1.8	.05	.008	.01	.02
11513	11.04	.322	5.6	.16	.001	.01	.01
11514	*6.25	.182	405.0	11.81	.076	17.40	6.73
11515	.22	.006	49.9	1.46	.008	2.04	3.34
11516	5.24	.153	164.0	4.78	.152	8.22	11.25
11517	.04	.001	4.2	.12	.002	.06	.07
11518	.52	.015	46.0	1.34	.028	2.26	1.16
11519	1.32	.039	91.0	2.65	.017	3.94	6.65
11520	.18	.005	25.7	.75	.593	.87	1.61
11521	2.35	.069	230.0	6.71	.790	9.82	11.50
11522	.61	.018	70.5	2.06	.042	4.03	7.90
11523	1.93	.056	159.0	4.64	.129	7.98	7.95
11524	*4.86	.142	124.0	3.62	.605	5.00	4.89
11525	*2.91	.085	133.0	3.88	.268	6.65	6.78
11526	1.30	.038	135.0	3.94	.078	6.17	10.60
11527	.94	.027	53.8	1.57	.028	1.96	4.24
11528	.49	.014	50.0	1.46	.019	2.06	4.26
11529	.02	.001	4.0	.12	.002	.02	.04
11530	.01	.001	2.2	.06	.001	.01	.02
11531	.02	.001	0.3	.01	.002	.01	.02
11532	.01	.001	0.9	.03	.001	.01	.02

\*SSAMPLES CONTAIN METALLIC GOLD, RECOMMEND METALLIC GOLD ASSAY.

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**SMITHERS LAB.:**  
TELEPHONE/FAX (604) 847-3004

*Assay Certificate*

OV-1435-RA2

Company: **AMERICAN BULLION**  
Project: **MAPLE LEAF R122**  
Attn: **JOHN BROCK**

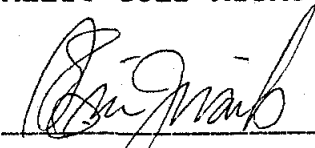
Date: **SEP-14-90**

Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

*We hereby certify the following Assay of 22 ROCK samples submitted SEP-12-90 by JOHN BROCK.*

Sample Number	AU g/tonne	AU oz/ton	AG g/tonne	AG oz/ton	CU %	FB %	ZN %
11533	.15	.004	9.9	.29	.002	.01	.02
11534	.02	.001	0.3	.01	.001	.01	.01
11535	.54	.016	15.4	.45	.002	.01	.01
11536	.12	.004	28.0	.82	.024	.87	1.88
11537	2.71	.079	103.0	3.00	.125	4.30	4.47
11538	.24	.007	6.5	.19	.027	.04	1.84
11539	.06	.002	10.2	.30	.022	.03	.22
11540	*2.88	.084	16.6	.48	.049	.02	2.27
11541	*2.42	.071	28.4	.83	.100	.04	9.65
11542	.16	.005	5.8	.17	.011	.02	.87
11543	.12	.004	10.0	.29	.012	.02	.23
11544	*7.20	.210	16.7	.49	.010	.02	.42
11545	.18	.005	75.0	2.19	.032	2.87	3.17
11546	.18	.005	6.8	.20	.030	.03	1.30
11547	2.26	.066	58.3	1.70	.210	.06	11.40
11548	.09	.003	5.9	.17	.012	.01	2.91
11549	.18	.005	42.0	1.23	.022	1.45	4.06
11550	27.65	.806	425.0	12.40	.068	.53	15.90
11552	.02	.001	4.2	.12	.009	.01	1.40
11553	2.12	.062	111.0	3.24	.140	3.57	9.20
11554	1.83	.053	90.0	2.63	.039	3.85	10.60
11555	1.60	.047	130.0	3.79	.010	6.02	15.40

\*SAMPLES CONTAIN METALLIC GOLD, RECOMMEND METALLIC GOLD ASSAY.

Certified by 

MIN-EN LABORATORIES

COMP: AMERICAN BULLION  
 PROJ: MAPLE LEAF R122  
 ATTN: JOHN BROCK

**MIN-EN LABS — ICP REPORT**  
 705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2  
 (604)980-5814 OR (604)988-4524

FILE NO: OV-1435-RJ1  
 DATE: 90/11/02  
 \* PULPS \* (ACT:F31)

SAMPLE NUMBER	AG PPM	AL PPM	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA PPM	CD PPM	CO PPM	CU PPM	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO PPM	NA PPM	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	U PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM
11514	384.3	1000	97	1	82	.1	2	390	237.4	4	701	20000	940	1	160	404	12	10	2	320	104150	490	16	1	1	1.0	64035	1	2	1	131
11515	44.9	5390	66	1	122	.2	2	2140	98.3	4	63	27460	3930	1	2750	1132	7	30	1	290	16926	52	9	1	1	1.6	28036	2	1	1	96
11516	161.5	1170	104	1	47	.1	1	290	416.1	5	1352	21390	1080	1	70	720	17	10	5	340	48373	209	21	1	1	1.0	111943	1	4	1	154
11517	1.7	1530	18	1	68	.1	1	510	.1	12	14	109090	1310	1	140	1	8	200	1	300	210	1	3	1	1	1.1	243	1	3	1	76
11518	43.6	2710	66	1	96	.1	1	620	38.4	4	256	29020	2270	1	320	86	6	40	1	280	21308	122	6	1	1	1.2	10255	1	2	2	141
11519	86.2	1520	64	1	36	.1	3	1160	240.7	5	137	24120	770	1	90	305	17	440	2	630	38047	115	15	1	1	1.3	65189	1	3	1	155
11520	25.1	4920	62	1	190	.1	1	1050	63.6	7	5422	33500	3810	1	710	88	7	40	1	230	7998	9	8	1	1	2.0	13090	1	2	1	126
11521	225.7	20940	1	1	71	.1	1	2780	531.1	62	7751	89200	9000	1	19750	1585	34	180	1	1030	88269	91	22	1	1	178.3	96739	7	6	1	1
11522	68.1	1990	139	1	56	.1	1	170	279.5	14	412	104410	1350	1	130	421	23	10	1	380	35467	96	18	1	1	1.9	77194	1	5	1	70
11523	149.2	1700	128	1	62	.1	1	380	294.2	5	1154	21980	1440	1	180	494	15	30	1	340	49825	192	17	1	1	2.0	78122	1	3	1	147
11524	121.4	3250	127	1	69	.3	1	600	164.9	4	5622	20970	2690	1	410	495	13	10	2	160	50082	196	15	1	1	1.5	46603	1	2	1	154
11525	126.4	1690	86	1	47	.1	1	440	238.0	4	2428	18270	1520	1	150	447	14	20	2	230	51371	182	16	1	1	1.0	66635	1	3	1	122
11526	126.2	1510	117	1	48	.1	2	400	384.1	5	670	24030	1150	1	130	777	15	30	1	360	58371	172	21	1	1	1.1	103630	1	4	1	125
11527	49.6	1560	56	1	44	.1	2	490	135.6	3	243	16310	1430	1	90	214	10	220	1	300	18723	73	11	1	1	1.1	38133	1	2	1	189
11528	47.6	1250	66	1	36	.2	1	480	137.3	3	161	12480	750	1	80	150	8	370	2	320	20130	84	10	1	1	.9	38986	1	1	1	138
11553	99.7	2690	117	1	53	.1	1	420	332.0	5	1153	23260	1920	1	170	639	16	160	5	310	38163	138	18	1	1	1.6	91460	2	3	1	192
11554	91.0	1650	129	1	45	.1	2	410	371.1	4	344	16860	1090	1	100	690	17	150	6	350	39230	136	20	1	1	1.3	100401	1	3	1	242
11555	120.6	980	101	1	37	.1	6	440	555.2	6	94	25130	810	1	50	939	17	130	5	470	46320	171	26	1	1	1.0	137649	1	4	5	153



Assay Certificate

0V-1238-RA1

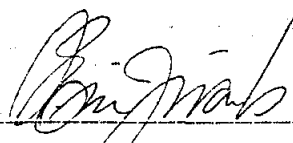
Company: **AMERICAN BULLION**  
Project:  
Attn: **WAYNE ROBERTS**

Date: **AUG-23-90**  
Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

We hereby certify the following Assay of 13 ROCK samples submitted AUG-22-90 by .

Sample Number	AU g/tonne	AU oz/ton	AG g/tonne	AG oz/ton	CU %	PB %	ZN %
11151	.21	.006	21.9	.64	.023	.82	.46
11152	.01	.001	1.8	.05	.003	.08	.01
11153	.02	.001	8.0	.23	.011	.12	.14
11154	.28	.008	82.0	2.39	.329	3.76	2.37
11155	.01	.001	0.4	.01	.002	.01	.03
11156	.24	.007	7.2	.21	.005	.19	.10
11157	.16	.005	11.8	.34	.011	.44	1.19
11158	.01	.001	3.4	.10	.002	.05	.02
11159	.18	.005	24.0	.70	.017	1.23	1.42
11160	.14	.004	14.2	.41	.015	.85	1.47
11161	.02	.001	1.3	.04	.02	.06	.04
11162	.18	.005	21.9	.64	.017	.97	1.60
11163	.04	.001	1.7	.05	.013	.19	.35

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 FAX (604) 980-9621

**THUNDER BAY LAB.:**  
 TELEPHONE (807) 622-8958  
 FAX (807) 623-5931

**SMITHERS LAB.:**  
 TELEPHONE/FAX (604) 847-3004

Geochemical Analysis Certificate

0V-1472-SG1

Company: **AMERICAN BULLION**  
 Project: **MAPLE LEAF/RECONN**  
 Attn: **WAYNE ROBERTS**

Date: **SEP-22-90**

Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 22 SOIL samples submitted SEP-17-90 by W.ROBERTS.

Sample Number	AU-FIRE FPB	AG PPM	CU PPM	PB PPM	ZN PPM
MLS-01	3	0.9	42	14	97
MLS-02	1	0.8	32	17	92
MLS-03	1	1.1	46	18	96
MLS-04	2	0.9	42	23	88
MLS-05	1	0.8	36	22	82
MLS-06	1	0.9	41	14	86
MLS-07	2	0.7	39	12	84
MLS-08	3	0.5	30	18	74
MLS-09	2	0.7	37	15	79
MLS-10	1	0.6	38	16	82
MLS-11	1	0.6	37	14	84
MLS-12	2	0.5	17	9	76
MLS-13	1	0.7	45	17	137
MLS-14	3	0.7	32	8	75
MLS-15	1	1.0	48	14	85
MLS-16	1	0.7	32	9	79
MLS-17	1	1.1	40	11	87
MLS-18	1	0.9	46	6	90
MLS-19	2	0.9	30	4	76
MLS-20	1	0.8	36	7	74
K-160	1		38	10	64
K-161	2		48	8	68

SLC  
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*Wayne Roberts*

MIN-EN LABORATORIES

*Geochemical Analysis Certificate*

1S-0251-RG1

Company: **AMERICAN BULLION**  
 Project:  
 Attn: **JOHN BROCK**

Date: **AUG-01-91**  
 Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

*We hereby certify* the following Geochemical Analysis of 30 ROCK samples submitted JUL-29-91 by JOHN BROCK.

Sample Number	AU-FIRE PPB	AG PPM	CU PPM	PB PPM	ZN PPM
16601	3	2.0	30	20	61
16602	2	1.2	49	5	10
16603	4	0.4	67	6	15
16604	2	1.4	60	5	40
16605	1	1.0	47	16	22
16606	56	14.9	433	11300	6685
16607	4	0.5	14	154	188
16608	2	1.3	6	33	61
16609	3	1.0	7	43	89
16610	5	1.0	2	483	134
16611	384	73.2	2060	42500	49920
16612	19	2.3	71	1100	1460
16613	2	3.6	29	498	414
16614	4	2.3	13	375	233
16615	7	3.1	41	121	110
16616	1	1.8	91	146	773
16617	805	94.7	1940	52000	59000
16618	8	2.8	41	772	895
16619	51	3.5	11	553	250
16620	2	1.4	19	126	144
16621	4	1.5	57	98	114
16622	1	1.5	66	68	114
16623	19	1.3	65	66	68
16624	38	2.4	206	98	113
16625	40	1.4	42	97	447
16626	43	1.2	95	77	55
16627	2	2.4	29	52	77
16628	1	1.8	31	22	50
16629	2	0.8	148	19	22
16630	5	2.3	50	25	13

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 FAX (604) 980-9621

**SMITHERS LAB.:**  
 3176 TATLOW ROAD  
 SMITHERS, B.C. CANADA V0J 2N0  
 TELEPHONE (604) 847-3004  
 FAX (604) 847-3005

Geochemical Analysis Certificate

1S-0251-RG2

Company: **AMERICAN BULLION**  
 Project:  
 Attn: **JOHN BROCK**

Date: **AUG-01-91**  
 Copy 1. **AMERICAN BULLION, VANCOUVER, B.C.**

*We hereby certify* the following Geochemical Analysis of 3 ROCK samples submitted JUL-29-91 by JOHN BROCK.

Sample Number	AU-FIRE PPB	AG PPM	CU PPM	PB PPM	ZN PPM
16632	1	1.4	5	35	30
16633	1	1.2	15	87	25
16634	2	1.8	132	306	150

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*Assay Certificate*

1S-0251-XA1

Company: AMERICAN BULLION  
 Project:  
 Attn: JOHN BROCK

Date: AUG-08-91  
 Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

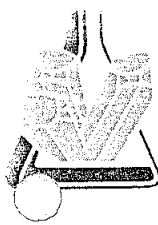
We hereby certify the following Assay of 2 PULP samples submitted AUG-07-91 by JOHN BROCK.

Sample Number	AU g/tonne	AU oz/ton	AG g/tonne	AG oz/ton	CU %	PB %	ZN %
16611	.40	.012	81.3	2.37	.225	4.67	6.27
16617	.96	.028	112.5	3.28	.226	6.16	7.68

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**SMITHERS LAB.:**  
 3176 TATLOW ROAD  
 SMITHERS, B.C. CANADA V0J 2N0  
 TELEPHONE (604) 847-3004  
 FAX (604) 847-3005

Geochemical Analysis Certificate

1S-0293-RG1

Company: **AMERICAN BULLION**  
 Project: **MAPLE LEAF**  
 Attn: **JOHN BROCK**

Date: **AUG-09-91**

Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

*We hereby certify* the following Geochemical Analysis of 1 ROCK samples submitted AUG-01-91 by JOHN BROCK.

Sample Number	AU-FIRE PFB	AG PPM	CU PPM	PB PPM	ZN PPM
16631	6	0.2	7	12	7

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 FAX (604) 980-9621

**SMITHERS LAB.:**  
 3176 TATLOW ROAD  
 SMITHERS, B.C. CANADA V0J 2N0  
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 FAX (604) 847-3005

Geochemical Analysis Certificate

1S-0251-SG6

Company: **AMERICAN BULLION**  
 Project:  
 Attn: **JOHN BROCK**

Date: **AUG-06-91**  
 Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

*We hereby certify* the following Geochemical Analysis of 9 SILT samples submitted JUL-29-91 by JOHN BROCK.

Sample Number	AU-FIRE PPB	CU PPM	PB PPM	ZN PPM
91 MLS 02	2	49	16	69
91 MLS 03	1	30	12	67
91 MLS 04	3	40	17	86
91 MLS 05	27	56	18	72
91 MLS 06	5	54	21	86
91 MLS 07	4	38	18	102
91 MLS 08	1	31	17	65
91 MLS 09	12	29	17	54
91 MLS 10	2	50	20	100

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**Geochemical Analysis Certificate**

1S-0251-SG1

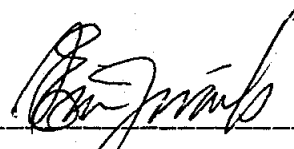
Company: **AMERICAN BULLION**  
Project:  
Attn: **JOHN BROCK**

Date: **AUG-06-91**  
Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

*We hereby certify* the following Geochemical Analysis of 30 SOIL samples submitted JUL-29-91 by JOHN BROCK.

Sample Number	AU-FIRE PPM	CU PPM	PB PPM	ZN PPM
11000N 9700E	3	7	25	32
11000N 9725E	1	14	9	35
11000N 9750E	1	8	23	46
11000N 9775E	2	17	21	55
11000N 9800E	4	2	21	16
11000N 9825E	2	17	41	104
11000N 9850E	4	19	50	76
11000N 9875E	6	24	24	52
11000N 9900E	1	5	48	32
11000N 9925E	2	18	21	55
11000N 9950E	2	4	18	45
11000N 9975E	2	9	13	60
11000N 10000E	1	6	11	86
11000N 10025E	1	17	17	101
11000N 10050E	2	10	21	80
11000N 10075E	31	10	14	39
11000N 10100E	3	12	22	45
11000N 10125E	1	22	253	47
11000N 10150E	2	6	31	37
11000N 10175E	12	18	23	65
11000N 10200E	6	8	19	131
10800N 9800E	80	54	70	156
10800N 9825E	1	17	22	145
10800N 9850E	5	29	28	69
10800N 9875E	1	22	26	91
10800N 9900E	2	18	23	75
10800N 9925E	2	4	8	17
10800N 9950E	6	5	6	13
10800N 9975E	1	26	15	57
10800N 10000E	2	10	12	89

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Geochemical Analysis Certificate


1S-0251-SG2

Company: **AMERICAN BULLION**  
 Project:  
 Attn: **JOHN BROCK**

Date: **AUG-06-91**  
 Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

*We hereby certify* the following Geochemical Analysis of 30 SOIL samples submitted JUL-29-91 by JOHN BROCK.

Sample Number	AU-FIRE PPM	CU PPM	PB PPM	ZN PPM
10800N 10025E	5	32	18	94
10800N 10050E	2	10	11	30
10800N 10075E	6	24	26	64
10800N 10100E	4	10	18	43
10800N 10125E	2	9	23	28
10800N 10150E	1	19	24	63
10800N 10175E	2	15	22	78
10800N 10200E	1	15	31	63
10600N 9700E	10	21	85	99
10600N 9725E	37	111	478	69
10600N 9750E	2	93	486	35
10600N 9775E	10	20	17	64
10600N 9800E	20	26	36	100
10600N 9825E	8	73	239	1230
10600N 9850E	2	12	23	40
10600N 9875E	29	14	15	34
10600N 9900E	20	17	17	48
10600N 9925E	2	29	22	80
10600N 9950E	1	19	18	44
10600N 9975E	5	22	30	101
10600N 10000E	3	13	39	60
10600N 10025E	6	10	26	29
10600N 10050E	19	9	29	44
10600N 10075E	6	12	27	55
10600N 10100E	12	6	7	22
10600N 10125E	7	30	26	79
10600N 10150E	10	23	21	80
10600N 10175E	12	23	21	79
10600N 10200E	16	23	37	78
10400N 9800E	17	31	32	113

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**SMITHERS LAB.:**  
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SMITHERS, B.C. CANADA V0J 2N0  
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FAX (604) 847-3005

Geochemical Analysis Certificate

1S-0251-SG3

Company: **AMERICAN BULLION**  
Project:  
Attn: **JOHN BROCK**

Date: **AUG-06-91**  
Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

We hereby certify the following Geochemical Analysis of 30 SOIL samples submitted JUL-29-91 by JOHN BROCK.

Sample Number	AU-FIRE FPB	CU PPM	PB PPM	ZN PPM
10400N 9850E	1	73	27	86
10400N 9875E	2	17	27	41
10400N 9900E	3	9	23	44
10400N 9925E	1	15	37	50
10400N 9950E	28	33	32	154
10400N 9975E	14	15	21	37
10400N 10000E	2	21	22	66
10400N 10025E	20	22	40	156
10400N 10050E	6	41	33	263
10400N 10075E	19	10	19	30
10400N 10125E	14	29	63	178
10400N 10150E	12	41	41	115
10400N 10175E	12	78	39	162
10400N 10200E	12	33	30	109
10400N 10225E	19	37	53	422
10400N 10250E	4	51	39	355
10400N 10275E	12	42	41	921
10400N 10300E	16	23	21	85
10200N 9800E	22	5	11	29
10200N 9825E	4	13	45	66
10200N 9850E	3	41	60	120
10200N 9875E	2	29	49	127
10200N 9900E	6	19	31	66
10200N 9925E	2	16	29	49
10200N 9950E	3	14	26	73
10200N 9975E	8	39	43	417
10200N 10000E	2	19	21	71
10200N 10025E	4	66	1083	620
10200N 10050E	6	23	51	81
10200N 10075E	1	30	38	84

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FAX (604) 980-9621

**SMITHERS LAB.:**  
3176 TATLOW ROAD  
SMITHERS, B.C. CANADA V0J 2N0  
TELEPHONE (604) 847-3004  
FAX (604) 847-3005

**Geochemical Analysis Certificate** 1S-0251-SG4

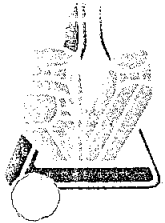
Company: **AMERICAN BULLION**  
Project:  
Attn: **JOHN BROCK**

Date: **AUG-06-91**  
Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

*We hereby certify* the following Geochemical Analysis of 30 AOIL samples submitted JUL-29-91 by JOHN BROCK.

Sample Number	AU-FIRE PFB	CU PPM	PB PPM	ZN PPM
10200N 10100E	9	31	19	77
10200N 10125E	3	22	21	66
10200N 10150E	34	19	24	96
10200N 10175E	9	32	230	342
10200N 10200E	6	29	57	77
10200N 10225E	2	27	26	66
10200N 10250E	3	28	23	62
10200N 10275E	2	29	21	63
10200N 10300E	1	13	22	34
10200N 10325E	2	27	22	86
10200N 10350E	6	14	20	46
10200N 10375E	3	31	23	73
10200N 10400E	4	47	27	80
10000N 9800E	3	56	296	315
10000N 9825E	4	30	54	174
10000N 9850E	2	37	34	120
10000N 9875E	26	26	19	49
10000N 9900E	4	44	46	213
10000N 9925E	3	71	222	262
10000N 9950E	2	33	41	175
10000N 9975E	2	21	38	74
10000N 10000E	2	28	34	71
10000N 10025E	25	13	31	107
10000N 10050E	24	27	36	105
10000N 10075E	6	21	33	72
10000N 10100E	3	41	36	56
10000N 10125E	2	17	35	62
10000N 10150E	14	5	18	21
10000N 10175E	8	8	48	50
10000N 10200E	3	73	85	441

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 FAX (604) 980-9621

**SMITHERS LAB.:**  
 3176 TATLOW ROAD  
 SMITHERS, B.C. CANADA V0J 2N0  
 TELEPHONE (604) 847-3004  
 FAX (604) 847-3005

Geochemical Analysis Certificate 1S-0251-SG5

Company: **AMERICAN BULLION**  
 Project:  
 Attn: **JOHN BROCK**

Date: **AUG-06-91**  
 Copy 1. AMERICAN BULLION, VANCOUVER, B.C.

*We hereby certify* the following Geochemical Analysis of 4 SOIL samples submitted JUL-29-91 by JOHN BROCK.

Sample Number	AU-FIRE PPB	CU PPM	PB PPM	ZN PPM
10000N 10225E	3	35	191	337
10000N 10250E	41	43	156	386
10000N 10275E	5	117	511	535
10000N 10300E	8	48	227	826

Certified by   
 MIN-EN LABORATORIES

Sample Name	Type	Cu %	Pb %	Zn %	Ag oz/st	Au oz/st
0-11353	Rock	0.01	0.02	<0.01	0.05	<0.005
0-11354	Rock	<0.01	<0.01	0.01	<0.01	<0.005
0-11355	Rock	<0.01	<0.01	<0.01	0.01	0.035
0-11356	Rock	<0.01	<0.01	<0.01	0.01	0.019
0-11357	Rock	<0.01	<0.01	<0.01	0.08	0.055
0-11358	Rock	<0.01	<0.01	<0.01	0.01	0.009
0-11359	Rock	<0.01	<0.01	<0.01	0.05	0.058
0-11360	Rock	0.01	<0.01	0.01	0.03	<0.005
0-11361	Rock	0.01	<0.01	<0.01	0.04	<0.005
0-11362	Rock	0.01	<0.01	<0.01	<0.01	<0.005
0-11363	Rock	<0.01	0.02	0.06	<0.01	<0.005
0-11364	Rock	0.02	<0.01	<0.01	0.03	0.008
0-11365	Rock	0.01	<0.01	0.01	0.04	<0.005
0-11366	Rock	0.01	<0.01	0.01	<0.01	<0.005
0-11367	Rock	0.01	8.25	7.30	16.36	0.100
0-11368	Rock	<0.01	0.02	0.02	<0.01	<0.005

↑  
MAPLE LEAF  
↑  
RIZZ  
↓

Ken: Is following page acceptable?  
CW.

USE RIZZ  
only

**APPENDIX III**  
**SAMPLE LEDGERS**

MARLE LEAF

Property

SAMPLE LEDGER

ASSAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		Au	Ag	Cu		Zn	DESCRIPTION
	Metres	Feet	Metres	Feet			Pb			
11501	grab		grab		<sup>ppm</sup> 61	<sup>ppm</sup> 13.6	<sup>ppm</sup> 110/1900		<sup>ppm</sup> 68	Ser-gtz schist 10-15% dissec. PY
02	float		float		525	20.4	15,000/3350		690	" " " " " " " " 2-3%
03	"		"		2	1.6	405/64		67	Siliceous siliceous bi-gtz schist 10-15% PY
04	"		"		6	2.4	49/42		36	Ser-gtz schist 15-20% PY
05		3.0		7.0	7	9.4	30/4400		4750	Ser-gtz schist 3-5% PY, 1-3% SL + CL
06	float		float		3	0.9	70/82		425	gtz with bx 10-15% SL, 3-5% PY + CP
07		0-10		10.0	4	1.4	40/1060		1450	gtz-ser schist 1-3% PY, 1-2% SL, + 1-1% CL
08		0-10		10.0	2	0.9	20/32		82	Ser-gtz schist, with siliceous fossil 2-3% PY
R122 09	float		float		.027 .001	.27 .02	.003% .01		% .01	Rizz claim Granite Volcanic limonite glz with 3-5% PY, + PY Hanger
10	"		"		.013	.30	.039		.67	Rizz claim felsic vol. 3-5% PY, 1-2% SL, + CL
11	"		"		.001	.12	.014		1.10	" " " " 5-7% SL, 3-5% PY, PY + CL
12	"		"		.001	.05	.008		.02	Gossan zone Rizz claim, siliceous schist 2-3% PY
13	"		"		.322	.16	.001		.01	North East claims Rizz claim 20-30cm wide PY-SL pods 2-3% PY
14	"		0.7 m float boulder		.182	11.81	.076		17.4	Boulder Bould ser-gtz schist 10-15% SL 7-10% PY
15	"		"		.006	1.46	.009		2.04	" " " " 3-5% SL, 1-2% CL
16	"		0.5 m float boulder		.153	4.78	.152		8.22	5-7% PY, 1-2% CL, bx glz with 20-25% SL, 10-15% PY
17	"		"		.001	0.12	.002		0.06	ser-gtz schist 2-10% PY Boulder Bould
18	"		"		.015	1.34	.028		2.26	Boulder Bould siliceous glz-ser schist 5-7% PY, 1-2% CL
19	"		"		.039	2.65	.017		3.94	" " bx with 3-5% CL, 5-7% SL, 2-3% PY
20	"		"		.005	0.75	.503 .02		1.61	" " ser-gtz schist 3-5% SL 2-3% SL, + CL

SAMPLE LEDGER

ASSAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		Au	Ag	Cu Pb	Zn.	DESCRIPTION
	Metres	Feet	Metres	Feet					
11521	float		float		.069	6.71	.79 9.8	11.50	Boulder Bawl, foot ball size 1-2% CP, 2-3% Pb
22	Float boulder 0-.5		0.5		.018	2.06	.04 4.03	7.90	" " Zns Pbs bands 1-3cm, + CP, qtz. <sup>Sci.</sup>
23	Float Boulder 0-0.8		0.8		.056	4.64	.13/7.98	7.95	" " Zns qtz bands qtz > 6x, Pbs, + CP
24	Float Boulder 0-0.3		0.3		.142	3.62	.61/5.00	4.89	" " Bands Zns, Pbs, CP in qtz ser schist
X 26	0-1.0		1.0		.038	3.94	.08/6.17	10.60	" " qtz bx zone, ser schist 1-2% CP, 2-3% Pb
X 25	float		float		.085	3.88	.27/6.65	6.78	" " football size Zns, Pbs, CP <sup>Sci.</sup>
27	0-.4		.4		.027	1.57	.03/1.96	4.24	" " 250m E ser qtz schist, bx qtz zone, 7-10% Pb, 5-7% Cu
28	0-.2		.2		.014	1.46	.02/2.06	4.26	400m E Boulder Bawl, bands Pbs Zns in qtz <sup>Sci.</sup>
29	0-1.5		1.5		.001	0.12	.02	.04	Upper Glacier qtz ser schist + py
30	0-.2		0.2		.001	0.06	.01	.02	" " qtz vein adj to qtz-ser schist <sup>Sci.</sup>
31	grab		grab		.001	0.01	.01	.02	" " qtz ser schist 1-2m
32	0-1.5		1.5		.001	0.03	.01	.02	" " lower zone ser schist qtz float <sup>3-5% Pb</sup>
33	0-1.0		1.0		.004	0.29	.01	.02	" " qtz-ser schist 2-5% Pb
34	float		float		.001	0.01	.01	.01	" " rusty dk grey ser, phyllosic <sup>green ls seam</sup>
35	0-1.0		1.0		.016	0.45	.01	.01	" " qtz-py ser schist 5-7% Pb
11551	grab		grab		1 ppb	1.3 ppm	80/33	69.	Maple Leaf CP, PD, PY stringers.



APPLE LEAF Property

SAMPLE LEDGER

ASSAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		Au	Ag	Cu		Zn	DESCRIPTION
	Metres	Feet	Metres	Feet			Pb			
11536	float		float		0.004	0.82	0.24	0.87	1.88	7-10% SL, 2-3% GL, 3-5% PY Boulder Ridge 425m E Boulder Bowl qtz lx in sil. ex.
37	float		float		0.079	3.00	0.125	4.3	4.47	10-15% SL 5-8% GL 1-2% PY 3-5% PY " " 600m E " " " " " "
45	"		"		0.002	2.19	0.32	2.87	3.17	J58 3-5% PY Zone 2 sil-gtz schist 3-5% di. sil. GL, 1-2% PY
49	"		"		0.005	1.23	0.22	1.45	4.06	J58 " " " " " " 1-2% di. sil. SC, tr. GL 5-7% PY
53	"		"		0.062	3.24	0.140	3.57	9.20	R1084 Boulder Bowl qtz lx Zn's Pbs in sil. exhalat.
54	"		"		0.053	2.63	0.039	3.85	10.60	R1081 " " zinc lx Zone 1 10% Zn
55	"		"		0.047	3.79	0.016	6.02	15.40	R1084 " " " qtz lx sil exhalative

## GLACIER LIGHT Property

## SAMPLE LEDGER

SAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		Au	Ag	Cu	Pb	Zn	DESCRIPTION
	Metres	Feet	Metres	Feet						
11151	TALUS		GRABS		.006	.64	.023	.82	.46	Base of Cliff Face, Zone 2, felsic volc. - gtz gneiss schist $\angle$ lam band, ZnS Py, Tr Pb 5-7% S <sup>2-</sup>
152	"		"		.001	.05	.003	.08	.01	Base of Cliff, Zone 2, massive gtz + lam band with abundant siliceous exhalative,
153	0-4		4.0		.001	.23	.011	.12	.14	Cliff face, Zone 1, massive pyrite, gtz. diss ZnS + Pb $\angle$ 5% Zn + Pb
154	0-1.3		1.3		.008	2.39	.329	3.76	2.37	Cliff face, Zone 1, white-yellow felsic volc. 5-7% Zn Tr Cu + Pb
155	TALUS		grabs		.001	.01	.002	.01	.03	Cliff face, Zone 2; coarse m. biotite - gtz schist gneiss with rods + lenses of ZnS,
156	"		"		.007	.21	.005	.19	.10	Cliff face, Zone 2 yellow wea, siliceous gneiss white exhalative, 5-7% Zn granitic, diss Zn granitic
157	"		"		.005	.34	.011	.44	1.19	Cliff face, Zone 2, laminated gtz - felsic schist with bands of Py + ZnS 2-3% S <sup>2-</sup>
158	"		"		.001	.10	.002	.05	.02	Cliff face, Zone 2, white siliceous exhalative - gtz schist, devoid of S <sup>2-</sup> $\angle$ 1% Pb
159	"		"		.005	.70	.017	1.23	1.42	" in gtz schist schist bands $\angle$ 5% Zn + Pb
160	"		"		.004	.41	.015	.85	1.47	" " " bands ZnS + Pb in gtz schist 2-3% Zn
161	"		"		.001	.04	.02	.06	.04	" " " (laminated ZnS + Pb) in felsic schist
162	0-10m		grabs over 10m		.005	.64	.017	.97	1.60	Zone 2, base of NW of top of cliff face, Zone laminated gtz - En sil $\angle$ 10% Zn
163	0-10M		grabs over 10m		.001	.05	.013	.19	.35	Zone 2, 500m NW of top of cliff face sil exhalative with lenses of ZnS + Pb sil 2% Zn

MAPLE LEAF Property

SAMPLE LEDGER

ASSAY TAG No.	SAMPLE Metres	INTERVAL Feet	SAMPLE Metres	LENGTH Feet	ppb Au	ppm Ag	ppm Cu	ppm		DESCRIPTION
								Pb	Zn	
16601		float		float	3	2.0	30	20	61	5-7% veinlet + diss py Rizz LCP c.g. mafic gabbro pyroxenite
602		grab		grab	2	1.2	49	5	10	Rizz LCP 35m NW of post felsic vol tr-18r 3.1% clons minor mag
603		grab		grab	4	0.4	67	6	15	Rizz 40m NW LCP leucitoid felsic vol silted 2-3% diss bubb
604		float		float	2	1.4	60	5	40	Rizz LCP schistose silted felsic vol. intense limonite ox. 2-3% diss py
605		grab		grab	1	1.0	47	16	22	Maple Leaf Rizz Qtz-bi schist intense Fe ox tr. diss py
606		float		float	56	14.9	453	11,300	6685	Rizz LCP Qtz vein c 1-2% GL+SL, 1/4% diss 1-2% P.
607		float		float	4	0.5	14	154	188	Rizz Glacier silted felsic vol c 2-3% diss P.
608		"		"	2	1.3	6	33	61	" " weakly porphyritic felsic vol tr-19% py
609		"		"	3	1.0	7	43	89	" " xtl-lithic tuff 2-3% diss py silted
610		"		"	5	1.0	2	483	134	" " silted unagg, tr-1% diss py Strong lim ox
611		0-7.5		7.5	384	73.2	2060	42,500	49,920	Schistose crystallized ser w/ls, 10-15% SL+GL, 3300 zone channel cut silted felsic vol. tr 1-2mm banded 2-3% py
612		grab		grab	19	2.3	71	1100	1460	3300 zone Qtz-ser schist crystallized
613		grab		grab	2	3.6	29	498	414	" " " " " " " "
614		grab		grab	4	2.3	13	375	233	" " " " " " " "
615		0-6		6.0	7	3.1	41	121	110	" " silted Qtz-ser schist, 3-5% py pools, intense Fe ox
616		grab		grab	1	1.8	91	146	773	3100 " bi-Qtz-ser schist c 1-2% diss py
617		grab		grab	805	94.7	1940	52,000	59,000	3300 " silted alt felsic vol 7-10% SL 3-5% GL, 3-5% py, tr.
618		grab		grab	8	2.8	41	772	895	silted, 2-3mm wide py veinlets 3 100m N Camp Lake felsic vol strong ser cut
619		grab		grab	51	3.5	11	553	250	2-3mm veinlet py + diss 3-5% py 735m N " " felsic vol ser alt silted
620		"		"	2	1.4	19	126	144	900m N " " silted felsic vol strong lim ox tr-1% diss py

RIZZ

MAPLE LEAF Property

SAMPLE LEDGER

ASSAY TAG No.	SAMPLE INTERVAL		SAMPLE LENGTH		ppb Au	ppm Ag	ppm Cu	ppm		DESCRIPTION
	Metres	Feet	Metres	Feet				Pb	Zn	
16621		grab		grab	4	1.5	57	98/114	91-	Schist, silted strong Fe ox trace
622		grab		grab	1	1.5	66	68/114	91-	200m N MLS-07 site in steep gully qtz-ser Lower Presidents zone
623		grab		grab	19	1.3	65	66/68	91-	50m wide zone Fe carb qtz alt vol tr-19% PY Presidents zone
624		0-5'		S.O	38	2.4	206	98/113	91-	5m wide Fe carb - qtz alt vol. tr-19% PY Pres. zone 2-3% PY Hol Glacier Fe carb - qtz alt vol 3-5mm P. ves.
625		0-5		S.O	40	1.4	42	97/147	91-	Pres zone silted crystallized graphitic schist Pools of weakly cr. ss 1-2% P.
626		float		float	43	1.2	95	77/55	91-	Pres zone, glacial, qtz - ser schist 2-3cm P. Pools no ss, orange
627		grab		grab	2	2.4	29	52/77	91-	" " 50m wide Fe-carb qtz alt vol 2-3% dis. PY
628		"		"	1	1.8	31	22/50	91-	" " qtz - ser - bi schist much qtz P.P. pools, qtz stringers
629		0-5		S.O	2	0.8	148	19/22	91-	" " ser-qtz schist, purple-orange Fe ox
630		float		float	5	2.3	50	25/13	91-	" " silted qtz-ser schist 5-7% PY
631		"		"	6	0.2	7	12/7	91-	Maple Leaf Good silted ser-qtz schist 2-3%
632		0-3		3.0	1	1.4	5	35/30	91-	" " " silted qtz-ser schist 3-5% dis. ss + impure 2-3%
633		0-4		4.0	1	1.2	15	87/25	91-	" " " " " " " " as above
634		0-2		2.0	2	1.8	132	306/150	91-	" " " " " " " " 1-2% PY int. lim. gneiss

**APPENDIX IV**

**GEOPHYSICAL SPECIFICATIONS**

## EQUIPMENT

ic field by integrative sampling over eight,

WINDOW	WIDTH	MID PT
-200 to 0	200	-100
200 to 400	200	300
400 to 800	400	600
800 to 1400	600	1100
1400 to 2200	800	1800
2200 to 3600	1400	2900
3600 to 6000	2400	4800
6000 to 10K	4000	8000
10K to 15.6K	5600	12.8K

21.6ms. Time Base

anges (X1, X10, X100). Data retrieval made

between the transmitter and the receiver,

annels, and stores the results for display.

ect thunderstorm spikes and power line

**DIMENSIONS:** 37 cm x 27 cm x 35 cm  
(14½" x 10½" x 14")

**WEIGHT:** 14.5 kg (32 lb)

**WEIGHT:** 21.8 kg (48 lb)

**DIMENSIONS:** 35 cm x 30 cm x 53 cm  
(14" x 11¾" x 21")

## - PULSE EM TRANSMITTER EQUIPMENT

ine with belt drive to D.C. alternator; maximum output 120V, 30 weight: 33 kg, shipping: 47 kg.

output; continuously variable between 24V and 120V D.C.; 20 amp shipping: 24 kg.

### ER:

and linear current shut-off ramp time. Radio and cable time synal crystal clock sync system; on-off times for 60 Hz areas 8.33ms, 10.0ms, 20.0ms, 40ms; for analog PEM operation 10.9ms, 21.8ms; up times of 0.5, 1.0 and 1.5ms; monitors for shut-off ramp operation, ntinuity, and overload output current; automatic shut-down for open : 22 kg.

### ND MAST:

ation on large survey grids; range up to 2 km; radio has 12V ; antenna is fiberglass mounted on a 4 section aluminum mast each pping: 6.0 kg; mast and antenna shipped as bundle: 6.4 kg.

### TIMING LINK:

nal box mounted to be plugged into PEM-Tx. Gel rechargeable power 15 kg.

### IS:

r No. 12 AWG copper in 310m or 410m lengths, 1 length per spool; 2 ; mounted on a magnesium packframe.

op with plugs to break into 2 sections. Aluminum or copper wire and rea being used.

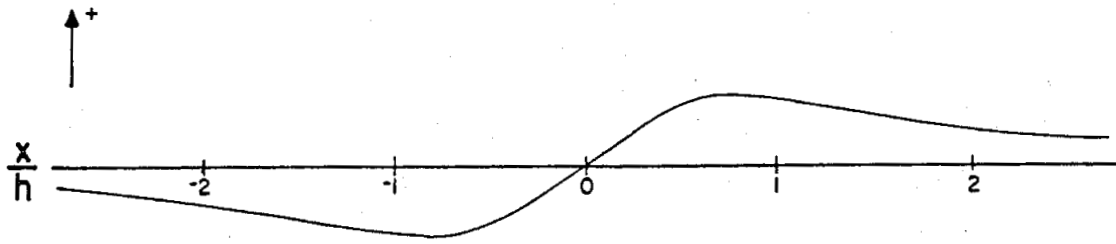
battery supply for use with PEM-Tx as power source rather than motor-case, with clamp connectors. Weight: 20.5 kg, shipping: 29 kg.

chargeable battery units.

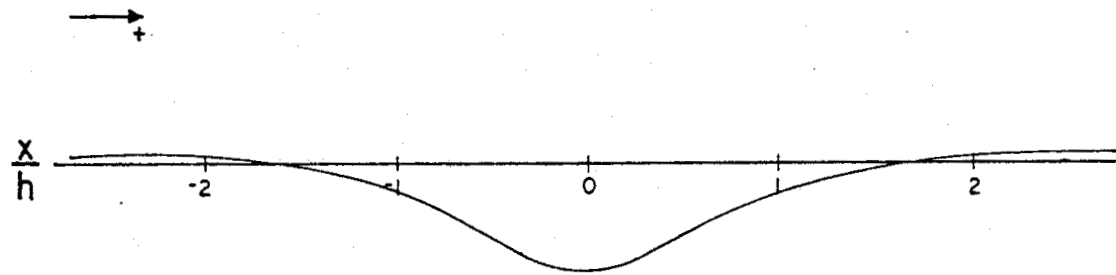
erational from -40°C to +50°C.

ood construction with closed cell foam shock protection.

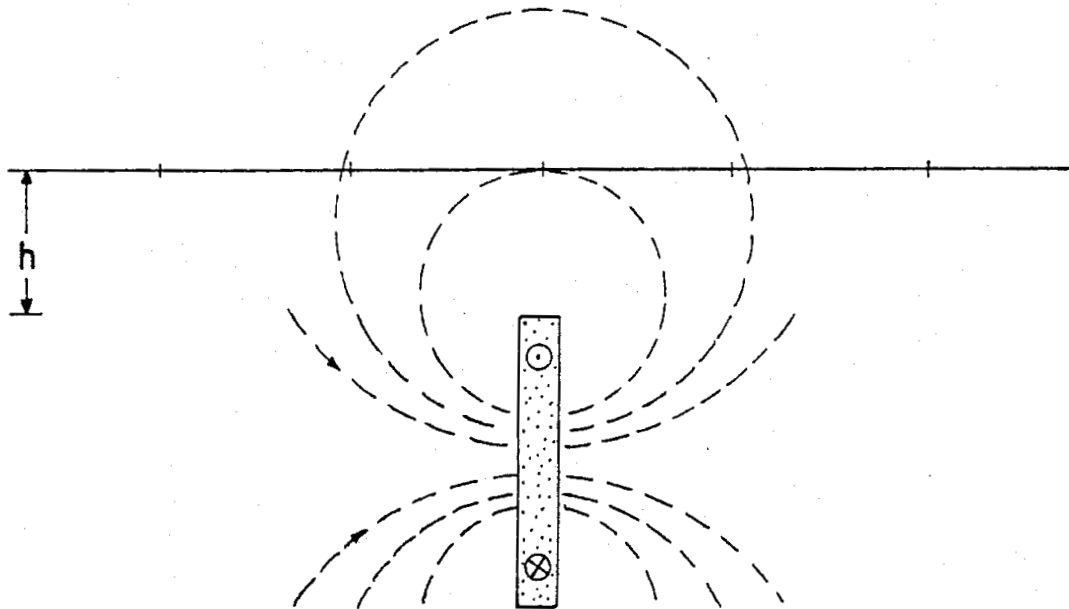
### VERTICAL COMPONENT



### HORIZONTAL COMPONENT

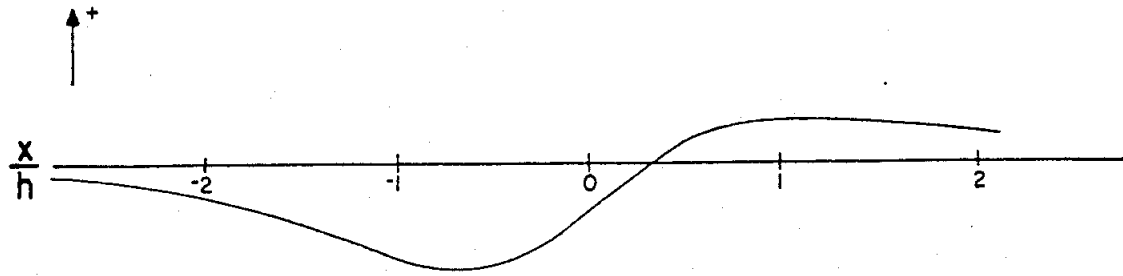


### VPEM ANOMALY SHAPE

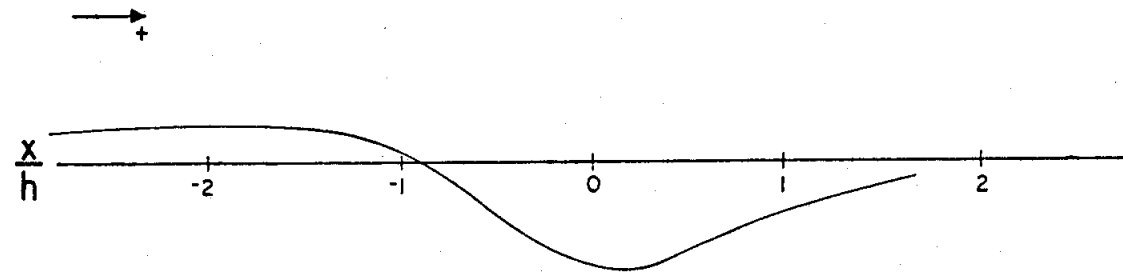


STEEPLY DIPPING TABULAR BODY

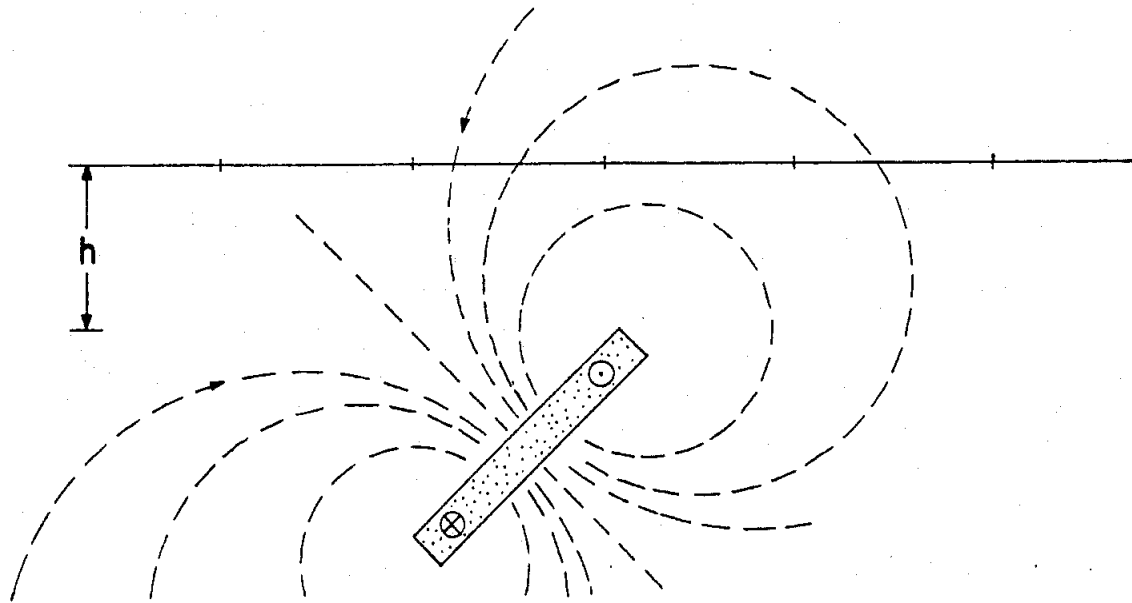
VERTICAL COMPONENT



HORIZONTAL COMPONENT



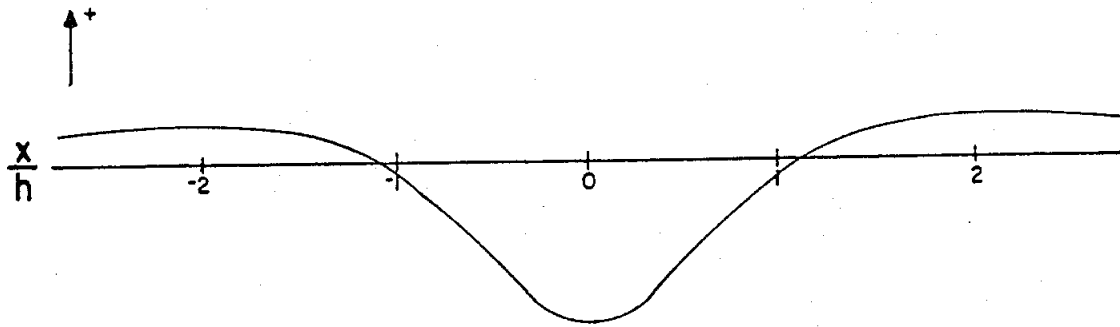
VPEM ANOMALY SHAPE



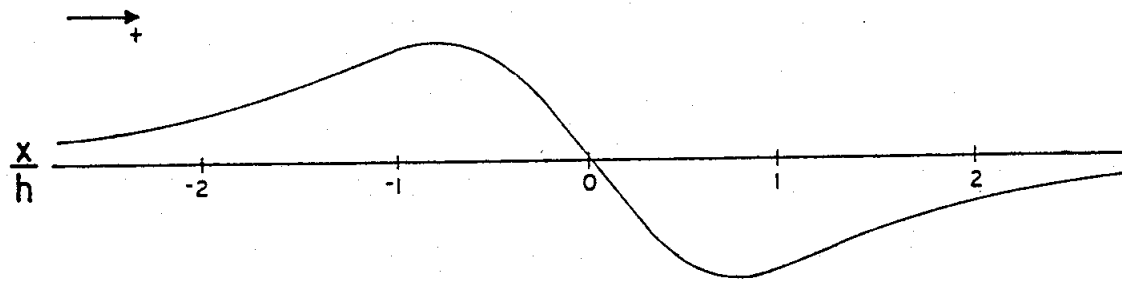
INCLINED TABULAR BODY



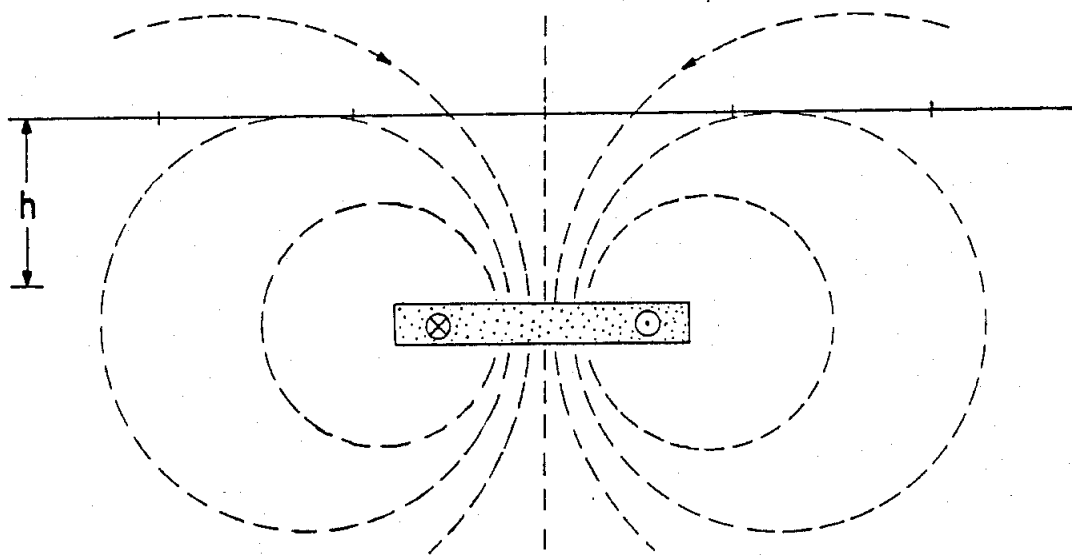
VERTICAL COMPONENT



HORIZONTAL COMPONENT



VPEM ANOMALY SHAPE



FLAT LYING TABULAR BODY

MPLF91AR

21,844



GLACIER 2 LIGHT  
GLACIER 1 LIGHT

Sample No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm
ML-1	0.0	0.0	42	14	32
02	1.1	0.0	32	17	32
03	1.1	0.0	46	10	94
04	2.0	0.0	42	23	85
05	1.1	0.0	36	22	82
06	1.1	0.0	41	14	80
07	2.2	0.0	37	12	84
08	3.0	0.0	30	15	74
09	2.2	0.0	37	15	70
10	1.1	0.0	30	10	82
11	1.1	0.0	37	14	84
12	2.2	0.0	17	17	76
13	1.1	0.0	45	17	137
14	1.1	0.0	32	8	75
15	1.1	0.0	32	9	89
16	1.1	0.0	40	11	87
17	1.1	0.0	40	10	78
18	2.2	0.0	30	8	78
20	1.1	0.0	30	7	74

Sample No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm
11152	0.01	0.02	0.1	0.3	0.1
11150	0.07	0.1	0.9	1.9	1.0
11197	0.09	0.1	1.4	1.9	1.0
11198	0.01	0.02	0.1	0.2	0.1
11199	0.09	0.1	1.2	1.4	1.0
11160	0.04	0.1	0.9	1.4	1.0
11161	0.01	0.02	0.1	0.2	0.1

Sample No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Au g/t	Ag g/t
11514	1.02	1.01	6.70	17.40	6.73	6.25	405.0
11515	0.06	1.46	0.00	2.04	3.34	22	44.9
11516	1.93	4.70	1.92	8.22	11.25	5.24	164.0
11517	0.01	0.12	0.02	0.06	0.07	0.4	4.2
11518	0.15	1.34	0.28	2.26	1.10	52	46.0
11519	0.29	2.65	0.17	3.94	6.65	1.32	91.0
11520	0.05	0.75	0.13	0.87	1.61	1.0	29.7
11521	0.69	6.71	0.79	9.86	11.50	2.35	230.0
11522	0.0	2.06	0.4	4.03	7.90	61	76.5
11523	0.96	4.64	1.3	7.90	7.95	1.93	159.0
11524	1.42	3.82	61	5.00	4.89	4.86	124.0
11525	0.80	2.80	0.8	6.65	6.70	2.91	135.0
11526	0.90	3.94	2.7	6.17	10.60	1.70	135.0
11527	0.27	1.57	0.3	1.96	4.24	94	53.0
11528	0.14	1.46	0.2	2.06	4.21	44	90.0
11529	0.62	3.24	1.60	3.57	9.22	2.12	111.0
11534	0.63	2.63	0.54	3.89	10.60	1.83	92.0
11535	0.47	3.79	0.10	6.02	15.40	1.60	132.0

LEGEND

Sample No.	Au ppm	Ag ppm	Cu ppm	Pb ppm	Zn ppm
------------	--------	--------	--------	--------	--------

- x Grab/chip sample
  - o Float/talus sample
  - o Silt sample
- NOTE: Contours in feet above sea level



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MAPLE LEAF PROPERTY

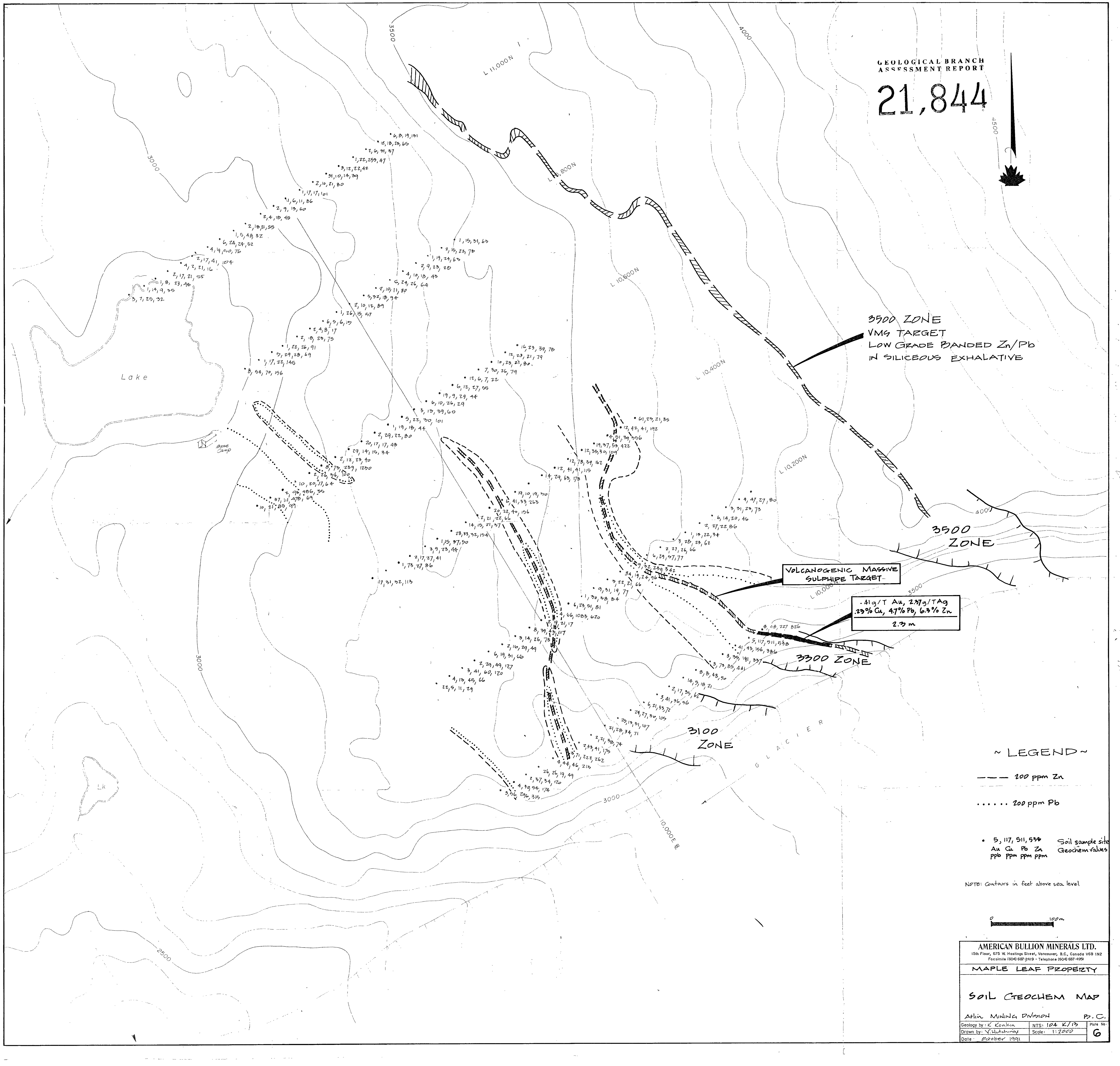
ROCK and SILT  
GEOCHEMICAL MAP  
3100, 3300 and 3500 ZONE  
ATLIN MINING DIVISION P.C.

Geology by: E. Kunkin (GSM) NTS: 104 K/177  
Drawn by: Y. Hutchings Scale: 1:5000  
Date: October 1991

Figure No. 5

GLACIER 4 LIGHT  
GLACIER 3 LIGHT

005F



3500 ZONE  
VMG TARGET  
LOW GRADE BANDED Zn/Pb  
IN SILICEOUS EXHALATIVE

VOLCANOGENIC MASSIVE  
SULPHIDE TARGET

.41g/T Au, 2.97g/T Ag  
23% Cu, 4.7% Pb, 6.3% Zn  
2.3 m

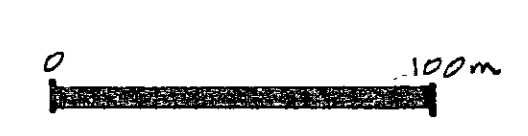
~ LEGEND ~

--- 200 ppm Zn

..... 200 ppm Pb

• 5, 117, 511, 538 Soil sample sites  
Au Cu Pb Zn Geochem values  
ppb ppm ppm ppm

NOTE: Contours in feet above sea level



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MAPLE LEAF PROPERTY

SOIL GEOCHEM MAP

Atlin Mining Division P.C.  
Geology by: K. Kalkan NTS: 104 K/13 Plate No:  
Drawn by: V. Stuchinas Scale: 1:2000  
Date: October 1991