

D.D.H. GEOMANAGEMENT LTD.

825277

REPORT

ON

EXPLORATION POTENTIAL

USING A

MASSIVE SULPHIDE VOLCANOGENIC MODEL

(WITH REFERENCE TO THE SLUMACH GOLD ZONE)

AT THE

INDIAN RIVER DEPOSIT

NEAR SQUAMISH, B.C.

FOR

INTERNATIONAL MAGGIE MINES LTD.

P.O. BOX 132

BRACKENDALE, B.C.

LAT. 49° 39'N / LONG. 123°01'W

N.T.S. 92-G-10W AND 11E

VANCOUVER MINING DIVISION

BY

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17 JUNE 1985

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SUMMARY

The volcanogenic zinc-copper Indian River property (84 units) of International Maggie Mines Ltd. is situated approximately 8 kms (5 miles) southwest of Squamish, B.C. and approximately 70 road-kms (44 road-miles) north of Vancouver, B.C.

The property lies east of the former Britannia Mine. The volcanic sequence has been assigned to the Lower Cretaceous Gambier Group and is intruded by granitoid stocks of Mesozoic to Tertiary age.

Upon application of a stratigraphic concept to the past geological work, it has been possible to reinterpret the geology and mineralization into a volcanogenic base-metal sulphide model. Work to date has defined only the northeastern marginal portion of a siliceous chert basin lying at the stratigraphic top of the lower rhyolite unit. The presence of chloritic quartz vein stringer (copper) mineralization in stratigraphically lower units suggests the occurrence of an alteration pipe. From the existing drill holes, a southwesterly gradient of increasing zinc in the lower rhyolite unit and of increasing copper in the chloritic stringer zone, indicates that the locus of an inferred massive sulphide body may exist to the southwest.

Quartz vein mineralization also exists on the property in the area of the Slumach (No. 2 adit) gold zone which suggests cross-cutting remobilized mineralization lying stratigraphically above the lower rhyolite unit. A weighted average grade of sub-drift samples from the Main Vein collected by the writers at various times averaged 1.908 ounces gold over 31 centimetres.

A two phase drill program has been recommended to test the volcanogenic model by (1) drilling to the southwest to locate the inferred massive sulphide body in the lower rhyolite unit and (2) to locate remobilized mineralization such as the gold-bearing Slumach zone in the units overlying the lower rhyolite unit. The estimated cost of Phase I is \$213,000.00 and upon favourable results, Phase II is \$500,000.00 for a total estimated cost of \$713,000.00.

INTRODUCTION

The firm of D.D.H. Geomanagement Ltd. was commissioned in March 1985 by Mr. Harold Hopkins of International Maggie Mines Ltd. to undertake a review of all

available data pertaining to the company's Indian River property near Squamish, B.C. in order to assess the massive sulphide potential of the company's volcanogenic deposit and further to assess the significance of the Slumach gold zone in relation to other known mineralization.

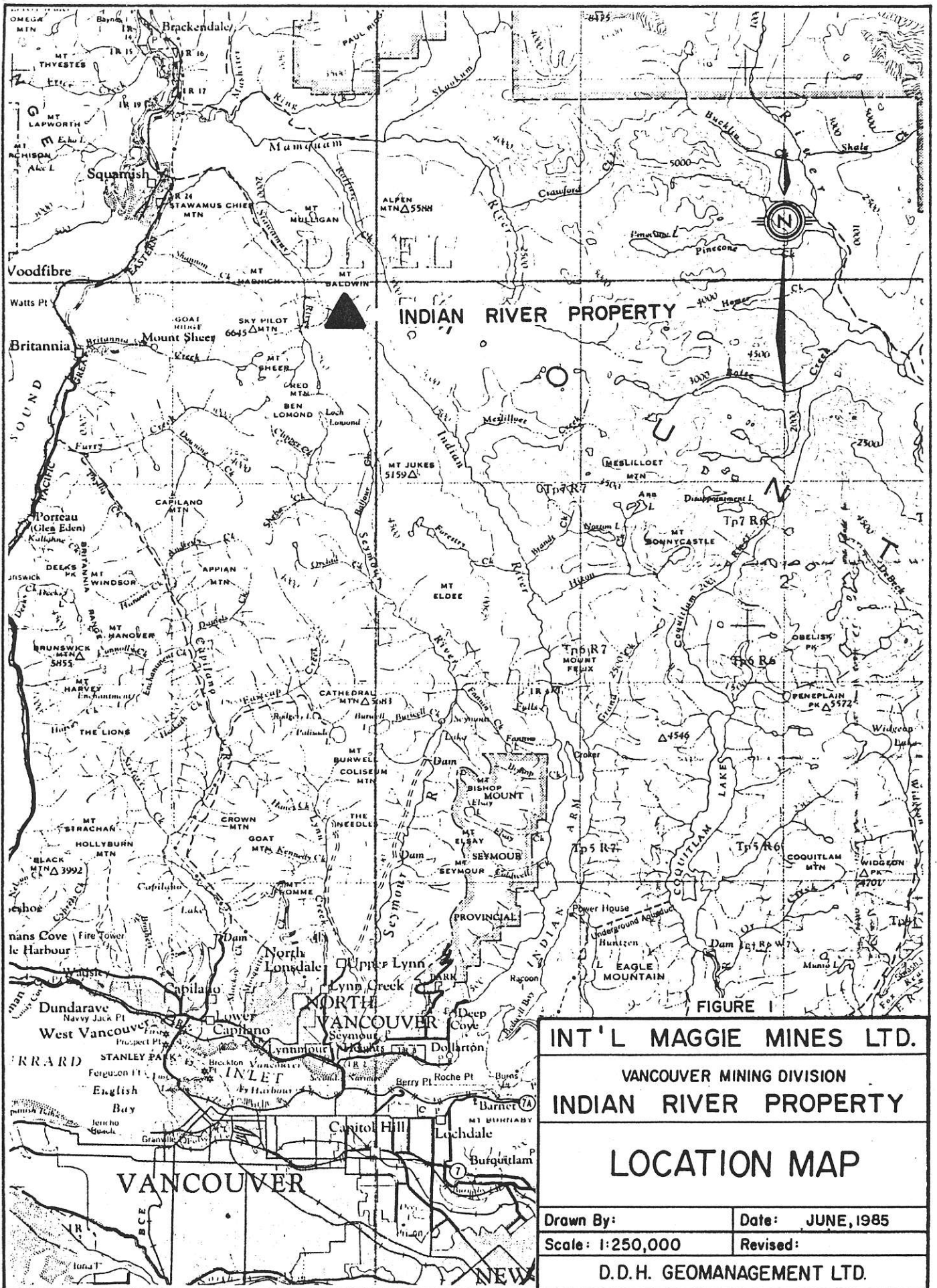
This assignment was accomplished by compiling the results of previous work by a number of companies as well as from a number of personal visits to the property over a number of years. D.A. Howard, P. Eng. has had an association with the property since 1978 when he was employed by Placer Development Ltd. and last visited the property in March 1984. A.D. Drummond, P. Eng. visited the property several times, the latest being in November 1983 to examine the then newly open gold zone.

LOCATION, ACCESS AND TOPOGRAPHY

The Indian River property of International Maggie Mines Ltd. is located approximately 8 kms (5 miles) southeast of Squamish, B.C. at headwaters of the Indian River. Britannia Beach, B.C. is located approximately 12.5 kms (7.8 miles) west of the property. Squamish, B.C. lies 70 kms (44 miles) by road north of Vancouver, B.C. (See Figure 1). Coordinates are $49^{\circ} 39'N$ and $123^{\circ} 01'W$. N.T.S. is 92-G-10W and 11E.

Access to the property is via a B.C. Hydro power line service road that follows the Stawamus River which road is accessed from a sub-division southeast of Squamish, B.C. New roads have been constructed from the B.C. Hydro road to the No. 2 adit area.

Topography on the claims is steep with local relief ranging from 575 m (1,900 feet) to about 1,424 m (4,700 feet). Rock exposures except at the higher elevations are limited due to deep overburden and thick timber cover.



PROPERTY AND TITLE

International Maggie Mines Ltd. holds a 100 percent interest in 11 contiguous claims containing 84 units (Figure 2). The claims are listed below:

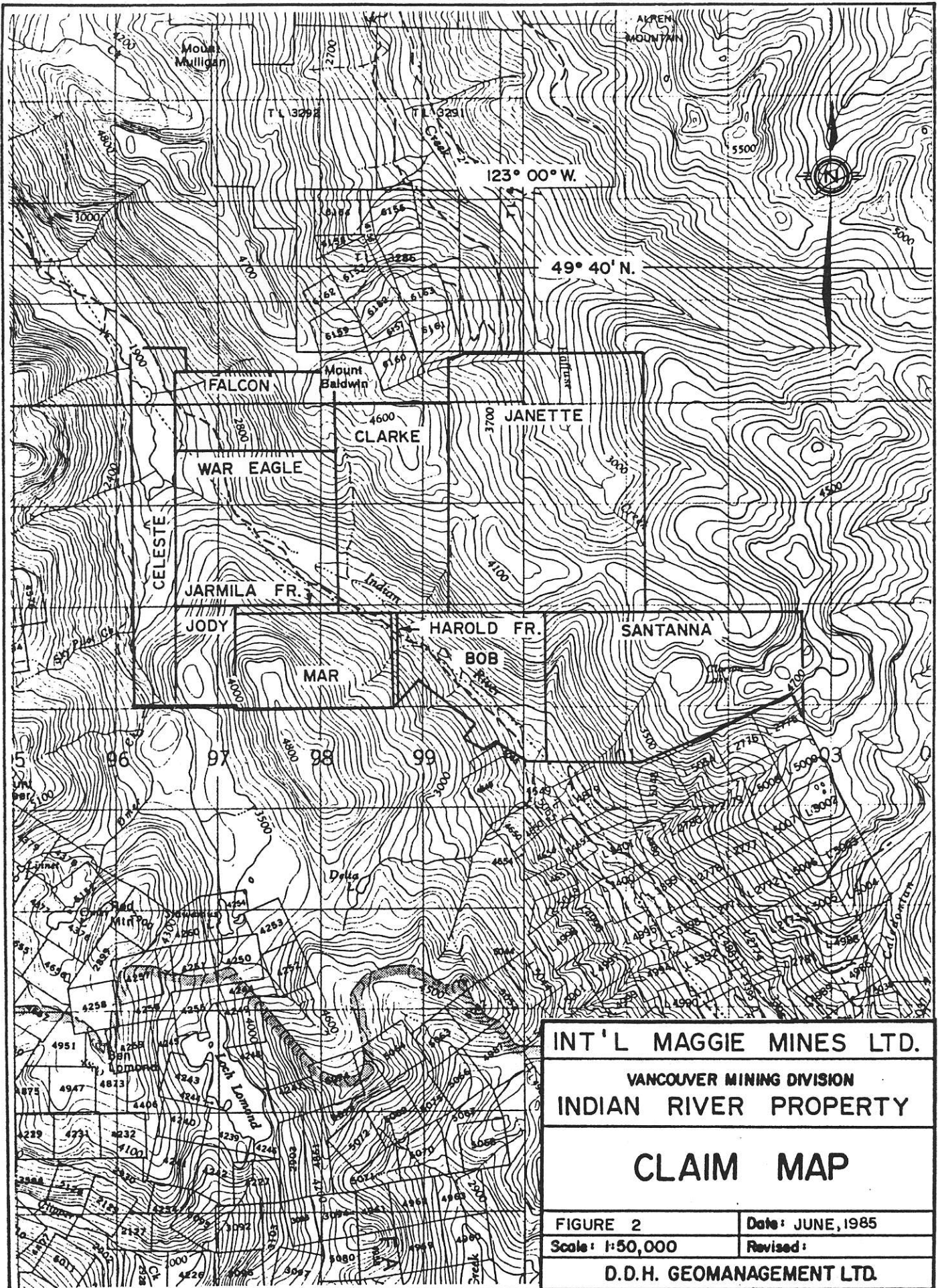
<u>Claim Name</u>	<u>Record No.</u>	<u>Units</u>	<u>Expiry Date</u>
War Eagle	116 (10)	9	Sept. 20, 1991
Clarke	126 (11)	8	Nov. 11, 1991
Janette	201 (8)	20	Aug. 25, 1991
Santanna	204 (9)	15	Aug. 27, 1991
Falcon	130 (11)	6	Oct. 20, 1991
Jody	138 (12)	2	Dec. 13, 1991
Celeste	136 (12)	7	Dec. 12, 1991
Bob	186 (7)	9	July 22, 1991
MAR	127 (11)	6	Nov. 14, 1991
Harold Fr.	333 (11)	1	Oct. 25, 1991
Jarmila Fr.	334 (11)	1	Nov. 2, 1991

HISTORY

Prior to Mr. Hopkins staking the claims and forming Maggie Mines Ltd., the area in 1969-1970 was covered by claims held by New Jersey Zinc Exploration Co. (Canada) Ltd. and Croyden Mines Ltd. The latter conducted a Turam geophysical survey and drilled two diamond drill holes. Results of this drilling are not known.

During 1977, Maggie Mines Ltd. started an adit and drove a short cross cut and a raise for a total of 77 feet of development of the War Eagle claim (Seraphim, 1977).

Placer Development Ltd. optioned the property in 1978 and held it through 1979. During this period, Placer conducted a regional geochemical silt sampling program, established a small grid, geochemical soil sampled the grid, ran a magnetometer survey over the grid, geologically mapped the area at a scale of 1:5,000, recovered the 1969 Turam survey data and reinterpreted the results and drilled 1,322.2 metres in 11 holes.



INT'L MAGGIE MINES LTD.
 VANCOUVER MINING DIVISION
 INDIAN RIVER PROPERTY
CLAIM MAP

FIGURE 2	Date: JUNE, 1985
Scale: 1:50,000	Revised:
D.D.H. GEOMANAGEMENT LTD.	

Placer Development Ltd. dropped its option with Maggie Mines on May 15, 1980.

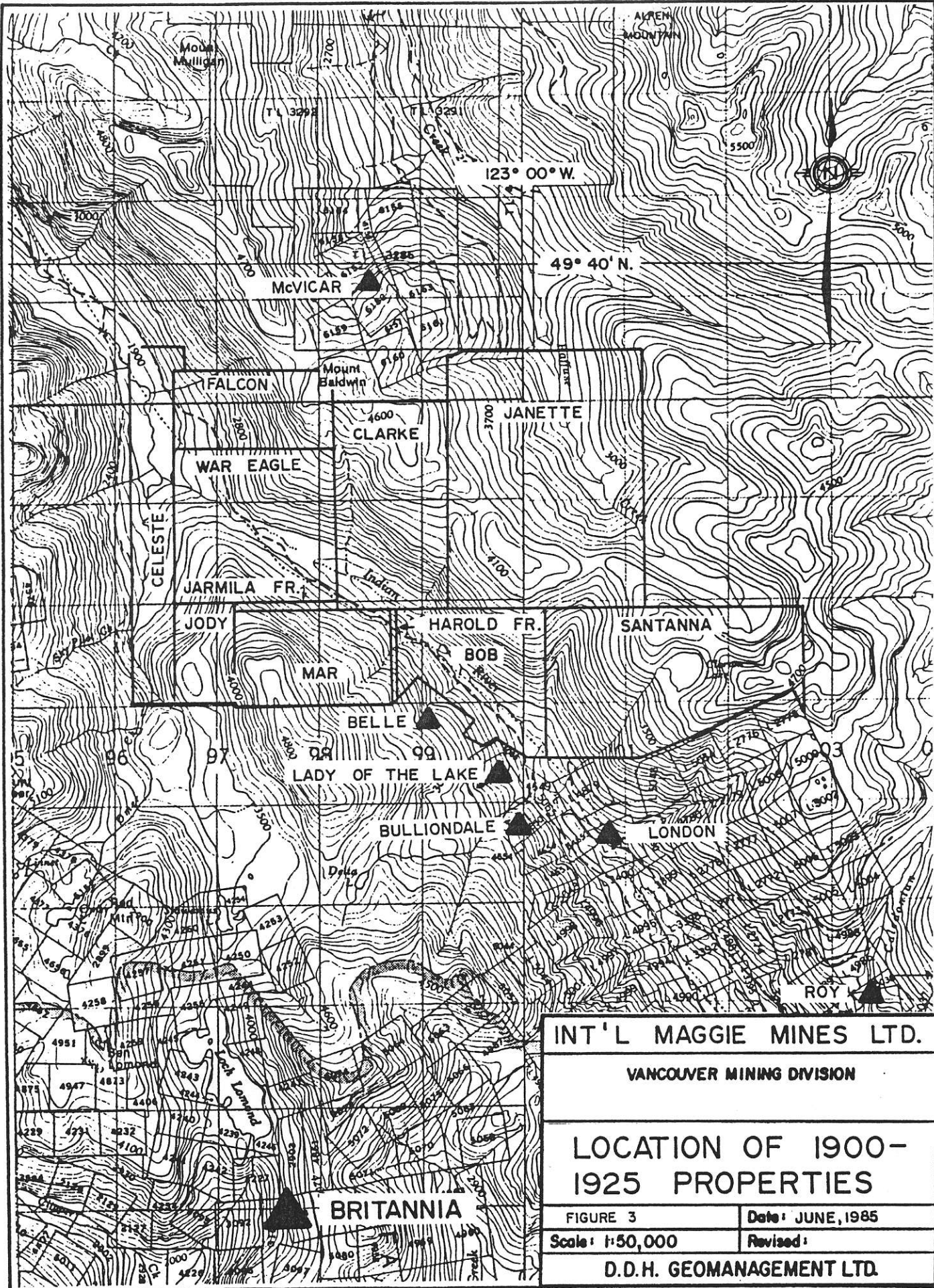
Subsequent to Placer dropping its option, Maggie Mines Ltd. carried out an exploration program recommended by A.E. Nevin, Ph.D., P. Eng. in a report dated 18 September 1980. The result of this program up to May 21, 1981 were outlined by T.E. Lisle, P. Eng. in a progress report of the same date. Mr. Lisle's report contains the drill results on the first 15 holes (1,725 metres).

During the remainder of 1981 and 1982 Maggie Mines Ltd. continued the diamond drill program. A total of 37 holes (M1 to M-37) were completed for a total of 4,473.5 metres. With the exception of holes M-22A and M-22B which were drilled on the Janette claim and M-24 on the MAR claim, all of the holes were drilled on the War Eagle claim. These holes were located to test geologic indications of volcanogenic mineralization. Hole M-24 on the MAR claim was drilled to test a mineralized surface showing, but was abandoned before the zone was intersected due to severe winter conditions.

The 1983 exploration program consisted of diamond drilling a further 15 holes (M-38 to M-52) for a total of 484.3 metres (1,589 feet) and driving a 58 metre adit (No. 2 adit) containing 28 metres of drifting and raising. All of the 1983 diamond drilling and underground work was located in the immediate vicinity of the new gold discovery area on the MAR claim.

Historical developments in the general area include the Britannia Mine which mine from 1905 to 1961 treated 45 million tons from nine zones. The average grade produced was 1.06% Cu, 0.25% Zn, 0.25 oz/t Ag and 0.01 oz/t Au.

Brewer (1918) and Camsell (1918) report that in the period 1910 to 1916 the following properties were known southeast of the headwaters of Indian River: (1) "Bulliondale" containing zones of copper-silver in fine-grained intrusive; (2) "London" opposite the Bulliondale on the east side of Indian River containing copper-molybdenum in a granodiorite dyke; (3) "Roy" to the south of the London containing "high grade" copper in a zone 15 feet wide and up to 300 feet in length in tuffaceous rocks and (4) "Belle" adjacent to the current BOB claim was reported on in 1913 as having a 100 foot adit driven into copper-zinc mineralization. To the north of the current International



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LOCATION OF 1900-1925 PROPERTIES

FIGURE 3

Date: JUNE, 1985

Scale: 1:50,000

Revised:

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Maggie Mines claims, the "McVicar" property was drilled for copper in 1925 and periodically for the next fifty years (See Figure 3).

GENERAL GEOLOGY

The claims of International Maggie Mines Ltd. are underlain by structurally complex thermally metamorphosed massive tuffs, pyroclastics, pyritiferous fragmental rocks, chert and andesite of the Lower Cretaceous Gambier Group (Roddick and Woodsworth, 1979).

Underlying undifferentiated volcanic and sedimentary rocks with minor migmatite and gneiss have been assigned to Upper Triassic Vancouver Group.

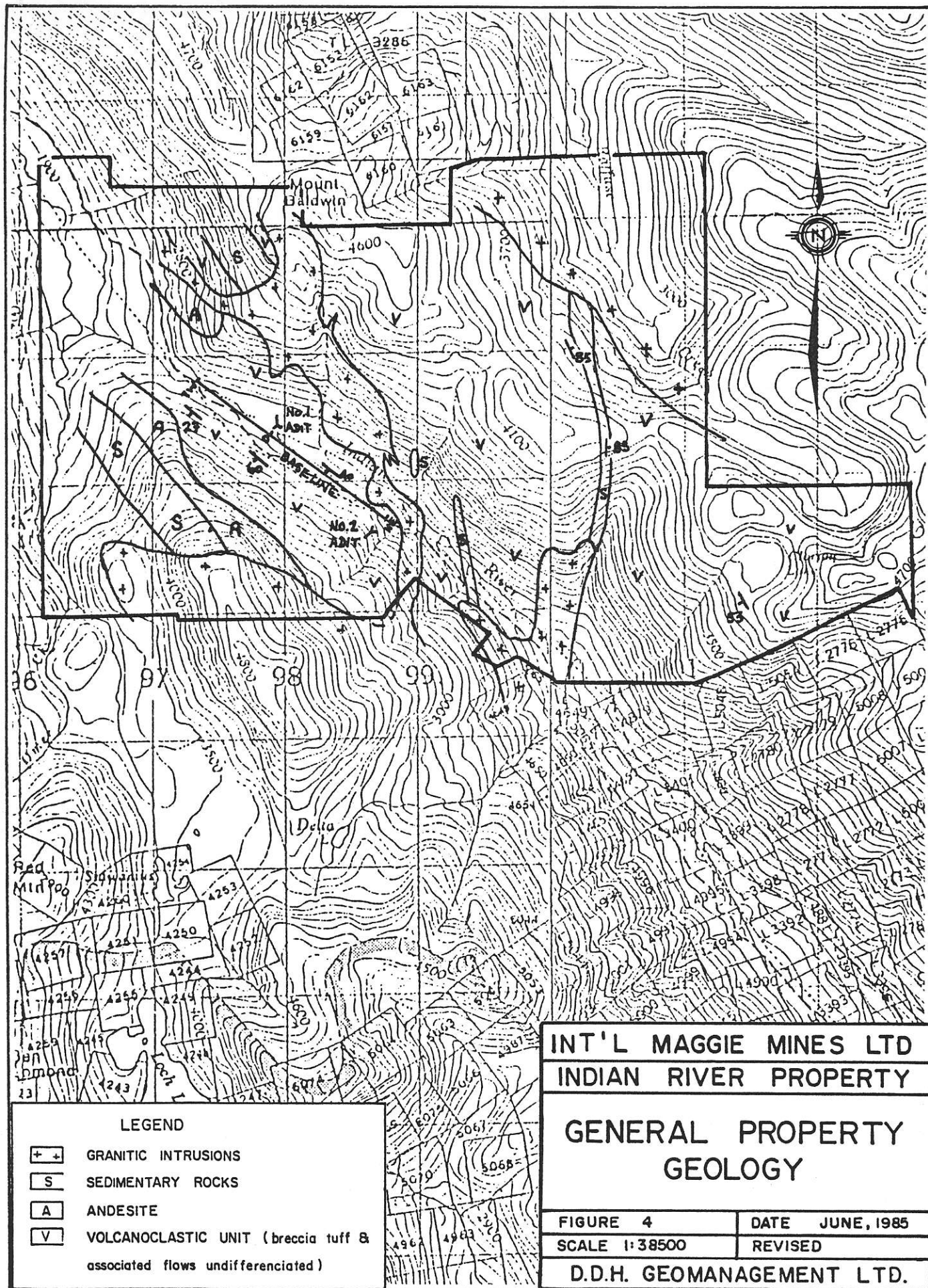
Overlying Garibaldi Group volcanic rocks are of Tertiary Age.

Intrusive into the Gambier Group are stocks of granodiorite, quartz monzodiorite, quartz diorite and minor gabbro, the age of which is mainly Cretaceous but some of the intrusive activity may have occurred during the Tertiary.

PROPERTY GEOLOGY

(a) Structural Domains

The claim group of International Maggie Mines Ltd. covers rocks of the Gambier Group and the granitic intrusive bodies (See Figure 4) as outlined in the General Geology. The tongue or dyke like intrusive body that trends N 20 W from the FALCON on the north, across the CLARKE to the BOB claim on the south, marks the boundary of two structural domains. To the east of this structural boundary, tuffaceous rocks are common with an apparent north-south strike while to the west, on the WAR EAGLE, MAR and JODY, the sequence strikes northwest and dips moderately to the southwest. It is within this latter area that the stratigraphic sequence associated zinc-copper-lead volcanogenic mineralization occurs.



LEGEND	
+ +	GRANITIC INTRUSIONS
S	SEDIMENTARY ROCKS
A	ANDESITE
V	VOLCANOCLASTIC UNIT (breccia tuff & associated flows undifferentiated)

INT'L MAGGIE MINES LTD	
INDIAN RIVER PROPERTY	
GENERAL PROPERTY GEOLOGY	
FIGURE 4	DATE JUNE, 1985
SCALE 1:38500	REVISED
D.D.H. GEOMANAGEMENT LTD.	

(b) Geology of the War Eagle - Mar Zn-Cu Zone

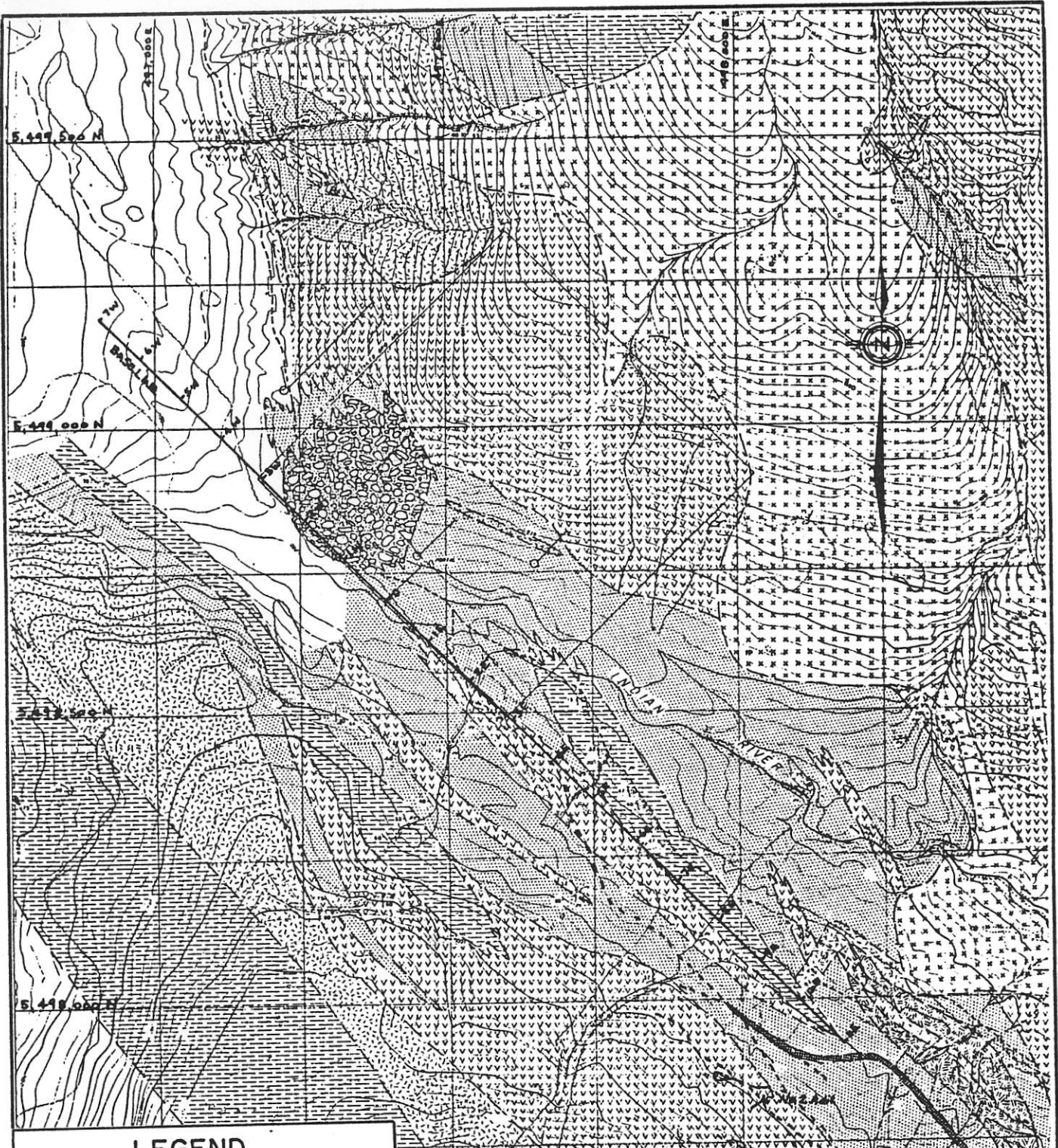
The main thrust of past exploration activity has occurred in this zone. The geological base has been developed by numerous geologists but unfortunately, the nomenclature has tended to vary with each worker. As a consequence, the writers have used rock descriptions rather than rock names to develop a stratigraphic sequence which appears to hold, given the data base available. The geological setting of the War Eagle-Mar area is shown in Figure 5.

The interpreted stratigraphic column is outlined in Figure 6. Below the uppermost sedimentary unit (TOP) lies an andesitic unit which overlies the upper rhyolite unit. Stratigraphically lower the agglomeratic unit mapped by Placer appears to be a stratiform coarse fragmental unit dipping shallowly to the southwest and grading downward to a dacite breccia to dacite brecciated tuff to dacite tuff. Along strike to the southeast, there may be a facies change to lapilla tuff. Below the dacite fragmental unit lies the lower rhyolite unit, the top of which contains siliceous pyritic "chert" beds on the northeast and sphalerite-chalcopyrite mineralization apparently increasing to the southwest. This sulphide horizon is a sulphide horizon near the top of the lower rhyolite unit and sulphides tend to decrease stratigraphically downward within the unit. Below the lower rhyolite unit lie dacitic tuffs and breccias. Within this unit several drill holes intersected a massive ash tuff horizon which is very weakly mineralized visually and the geochemical response is also low. Whether the ash tuff horizon is part of the dacite tuff/breccia unit which occurs above and below it or not, is a matter of conjecture at this time.










Late andesite and basalt dykes have intruded the above sequence. The proximity of granitic intrusive bodies which have imposed some degree of thermal metamorphism, make it difficult to determine if the occurrence of biotite in some instances is due to alteration associated with mineralization or if the biotite is a local thermal feature associated with a dyke or the larger granitic intrusions.

(c) Mineralogy

Mineralogy is generally simple. Quartz veining is associated with chalcopyrite - sphalerite - pyrite - minor pyrrhotite - local galena and associated silver and gold.



LEGEND

-  ANDESITE
-  GRANITIC INTRUSIVES
-  RHYOLITE TUFFS - FLOWS
-  TUFFS, TUFFACEOUS SEDIMENTS
-  SEDIMENTS (CHERT, ARGILLITE, SILTSTONE, SANDSTONE)
-  PORPHYRITIC ANDESITIC FLOWS
-  LAPILLI LAVA TUFF
-  AGGLOMERATE
-  VENT

**INT'L MAGGIE MINES LTD
INDIAN RIVER PROPERTY**

**GEOLOGY MAP OF THE
WAREAGLE - MAR ZONE**

Modified from Placer Development 1978-79

FIGURE 5	DATE JUNE, 1985
SCALE 1:10,000	REVISED

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INTERPRETED STRATIGRAPHIC SECTION
WITHIN LOWER CRETACEOUS GAMBIER GP. ROCKS
DIAGRAMMATIC (NOT TO SCALE)

STRATIGRAPHIC TOP

<u>STRATIGRAPHIC COLUMN</u>	<u>STRATIFORM MINERALIZATION</u>	<u>VEIN TYPE (REMOBILIZED) MINERALIZATION</u>
SEDIMENTARY UNIT	Pyritic ?	
ANDESITE UNIT		
UPPER RHYOLITE UNIT -flows(?), tuffs and chert	Locally pyritic	Quartz vein with Pb, Ag, Zn and barite (No. 2 adit area)
DACITE VOLCANOCLASTIC UNIT		
(a) Coarse fragmental or breccia		
(b) Tuffaceous breccia		Quartz vein with Zn, Cu, Ag and high Au (Slumach Zone)
(c) Tuff		
(d) Lapilli tuff		
LOWER RHYOLITE UNIT		
(a) Breccia, tuff and cherts	Pyritic cherts to NE, 1 - 20 % sulphides, Zn, Pb, Cu values, Chlorite Altn to SW Biotite Altn to NE Stringer type veining	Quartz vein with Cu, Zn and pyrite throughout volcanoclastic unit
(b) Tuff and flows(?) (May be transitional contact)		
DACITE TUFF/BRECCIA UNIT		
ASH TUFF (GREY) UNIT		
(a) Ash tuff		
(b) Rhyolite breccia	Rarely mineralized, pyritic in argillite horizons	
(c) Argillite (discontinuous?)		
DACITE TUFF/BRECCIA UNIT		
	Stringer type veining chlorite altn, Cu 1 - 5 % pyrite	

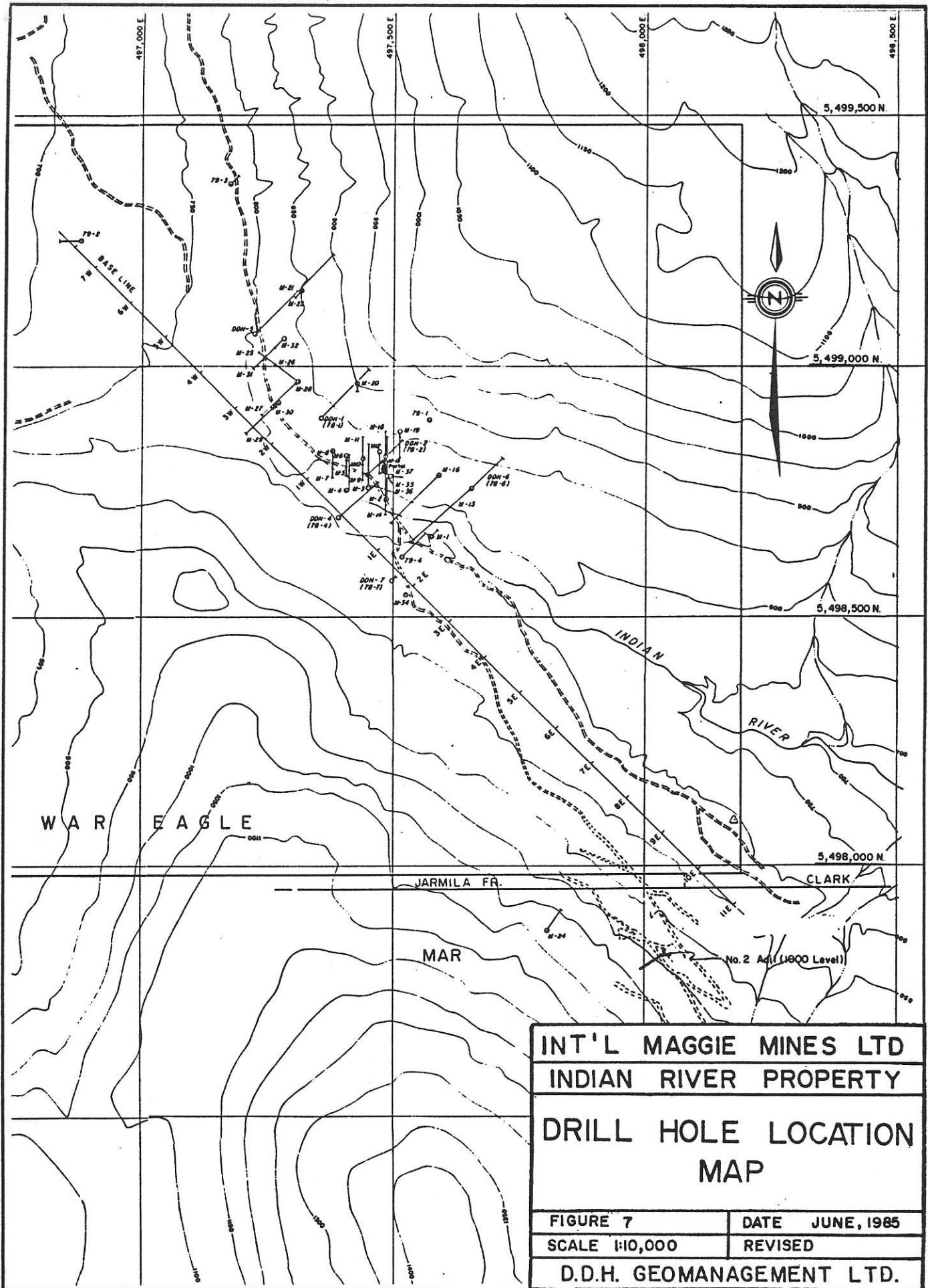
NOTE: Late andesite and basalt dykes have intruded the above sequence.

Up to 20% sulphides has been noted in the upper part of the lower rhyolite unit. Elsewhere, in the Slumach zone, chalcopyrite - sphalerite occur in a quartz vein that carries significant gold and silver values. Stratigraphically above the Slumach zone, a quartz vein contains coarse recrystallized galena with silver values, sphalerite pyrite, minor chalcopyrite and barite. The relative position of the mineralization is shown in relationship to the interpreted stratigraphic section (See Figure 6).

(d) Geological Sections

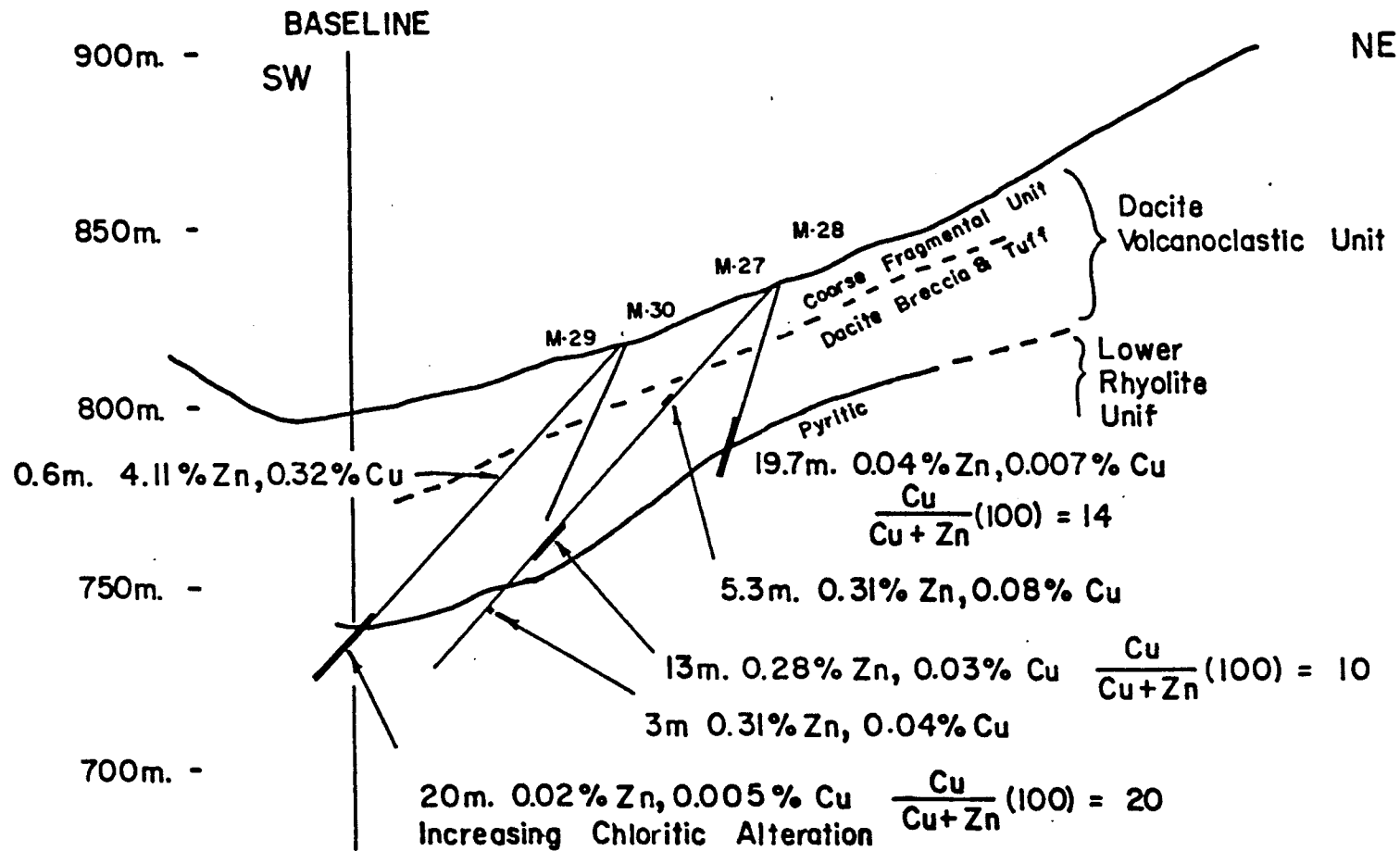
Using the nomenclature of Figure 6, a number of illustrative sections were drawn to show the variations encountered along strike. Figure 7 locates drill holes and the baseline. Figures 8, 9, 10, 11 and 12 are respectively for sections 2+50W, 1+70W, 0+00, 0+80E and 1+40E. The distance along strike covers 390 metres (1,287 feet) and encompasses most of the area drilled. Figure 8 indicates the stratiform nature of the coarse fragmental unit and the sulphide zone associated with the lower rhyolite horizon. The Cu/Zn ratios indicate a zinc gradient increasing to the southwest which correlates to an increase in chloritic alteration. Figure 9 again indicates the sulphide zone at the top of the lower rhyolite unit. Figure 10 shows the lower rhyolite unit, the presence of shearing and an increase in zinc gradient to the southwest. Figure 11 shows the lower rhyolite unit overlying the dacite tuff breccia and unmineralized grey ash tuff. The lower most part of hole M-16 indicated quartz veining and chloritic alteration in dacite tuff/breccia. Figure 12 suggests that some thickening and thinning may occur in the ash tuff unit and that included within the ash tuff unit are argillitic horizons and a possible locally restricted rhyolite breccia horizon. Again below the ash tuff unit, a relatively copper-rich zone may exist which increases in copper to the southwest. This copper zone is associated with chloritic alteration which also appears to be increasing in intensity to the southwest. Figure 12 also suggests that a slight antiform may occur towards the northeast.

There is a lack of drill information along strike for about 900 metres (about 3,000 feet) (See Figure 7) but the mapping by Placer Developments Ltd. (Figure 5) indicates that the same rock types continue along strike. Figure 13 is a section at 10+70E which shows the position of the gold-bearing Slumach zone in No. 2 adit relative to the lower rhyolite unit. Drill holes numbered M-38 to M-52 were drilled in the general vicinity of the Creek and Slumach zones. All holes were of relatively short length, but did



**INT'L MAGGIE MINES LTD
 INDIAN RIVER PROPERTY
 DRILL HOLE LOCATION
 MAP**

FIGURE 7	DATE JUNE, 1985
SCALE 1:10,000	REVISED
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INDIAN RIVER PROPERTY

SECTION 2+50W.

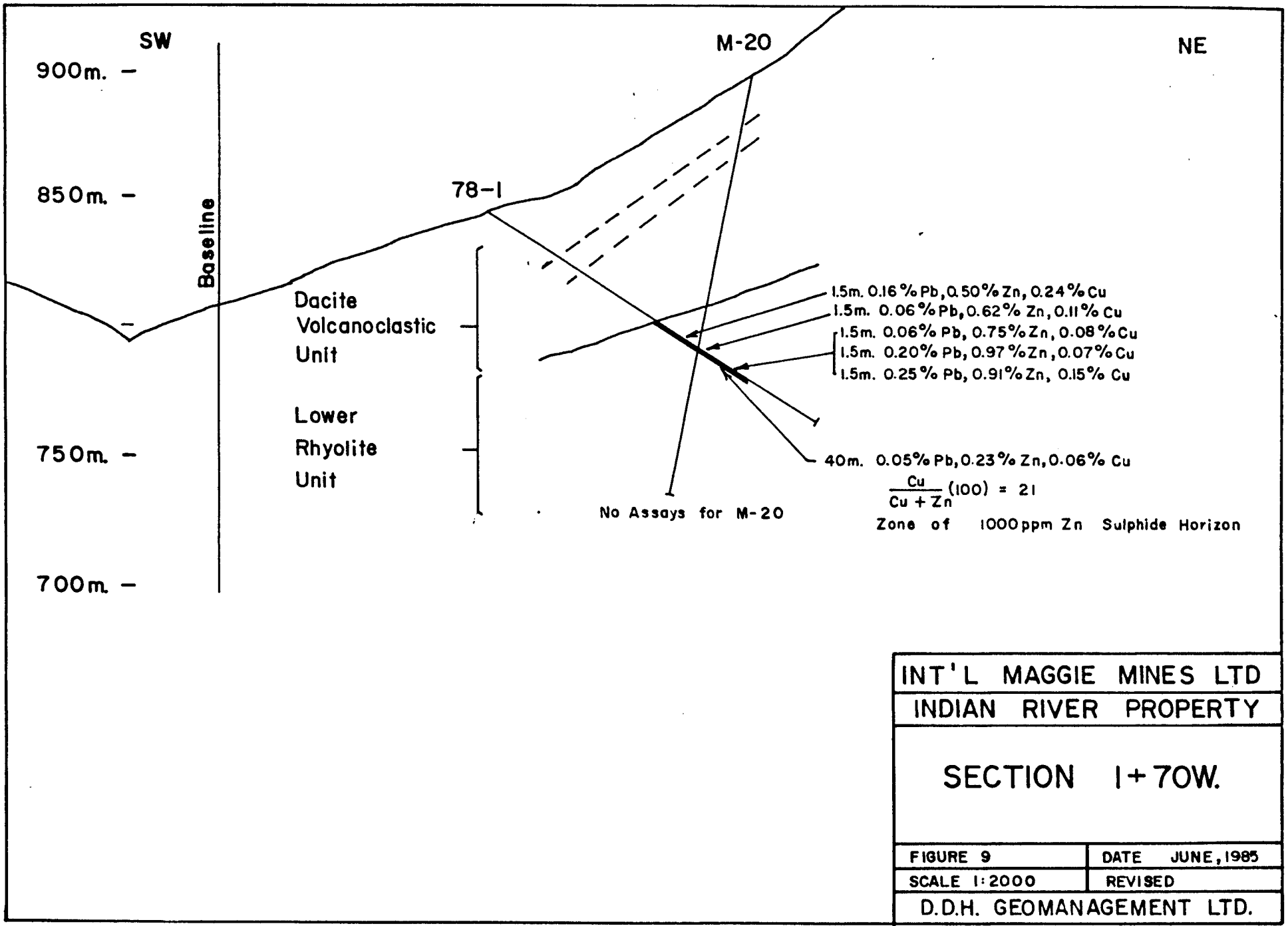
FIGURE 8

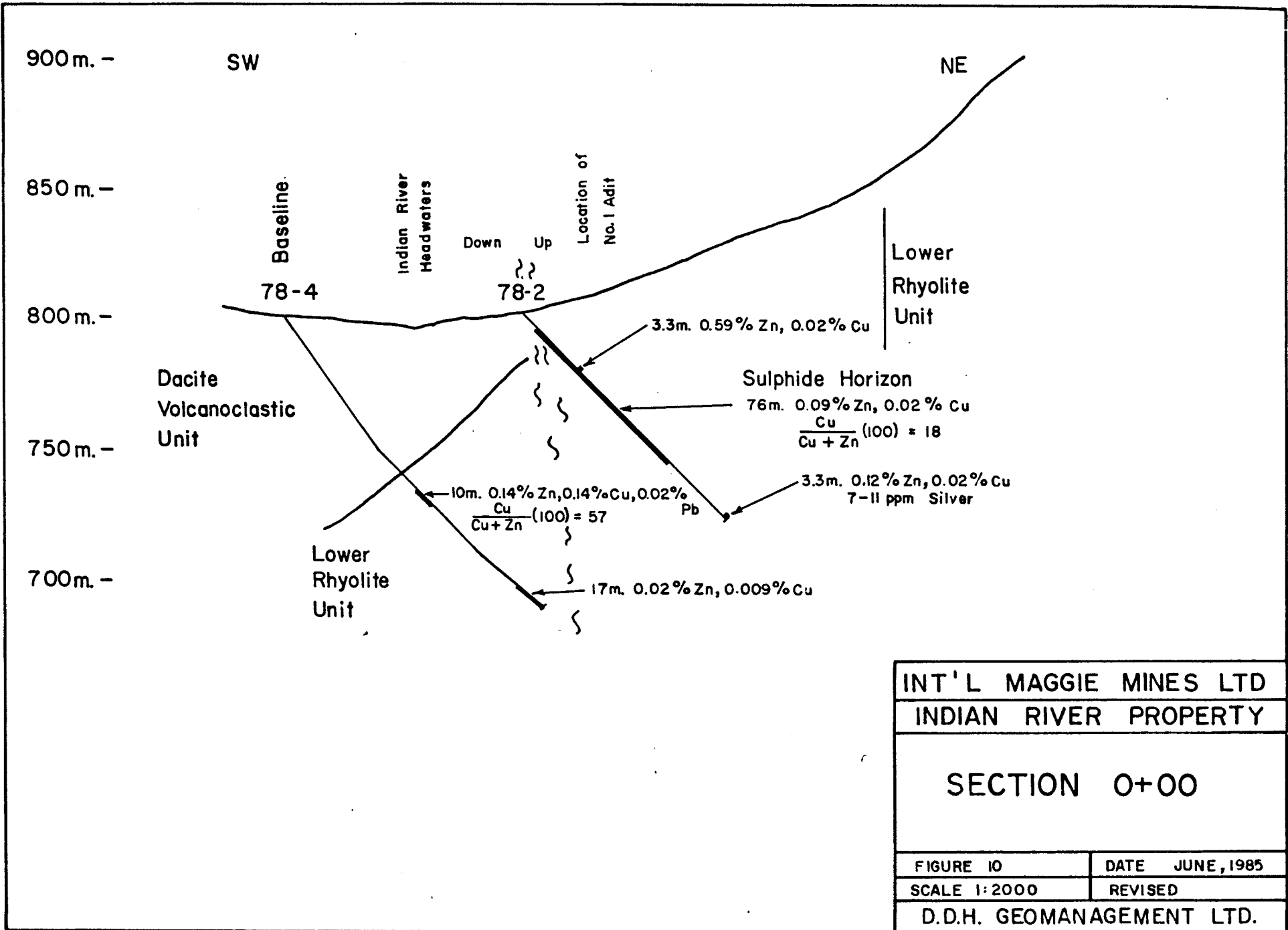
DATE JUNE, 1985

SCALE 1:2000

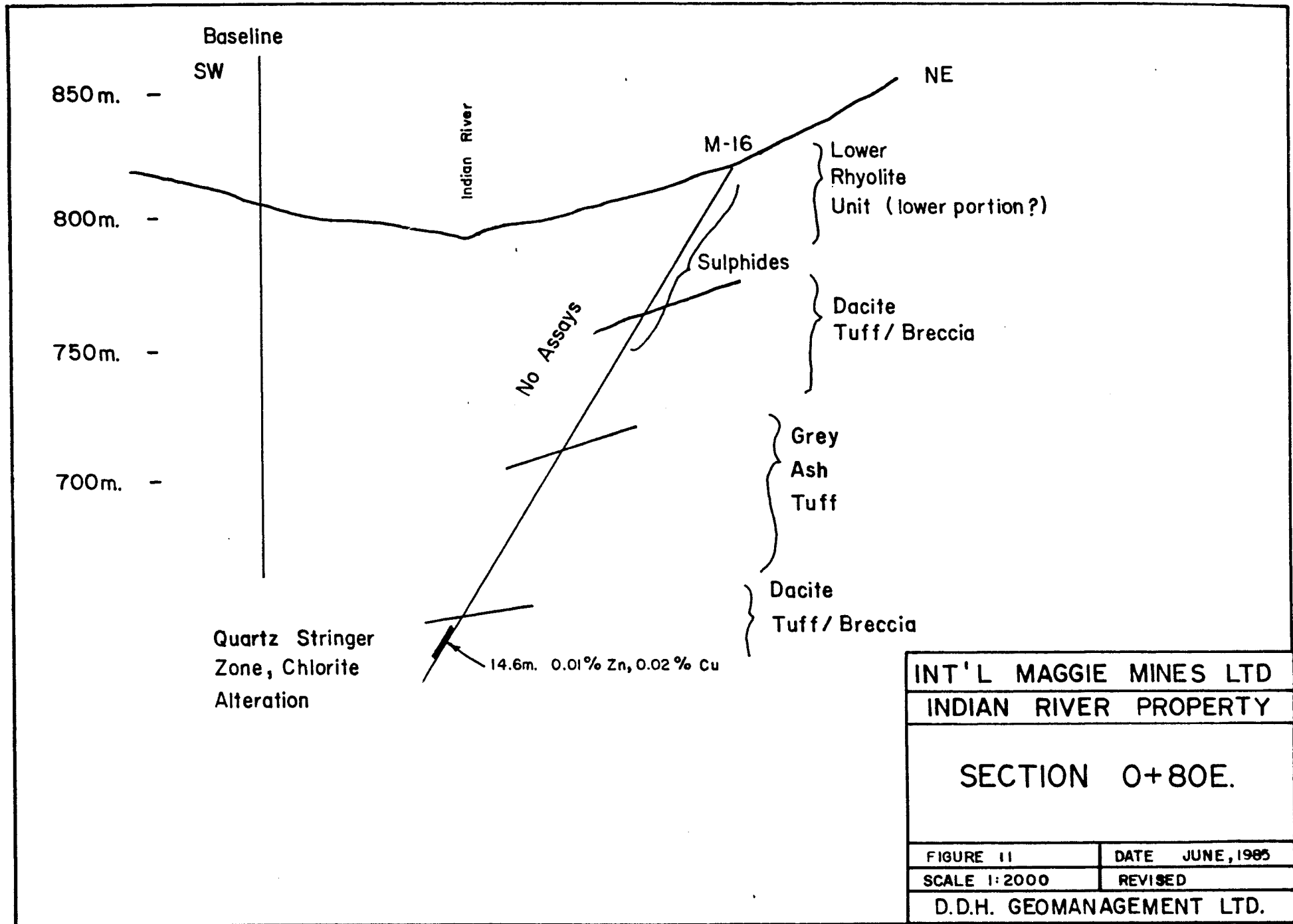
REVISED

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INT'L MAGGIE MINES LTD	
INDIAN RIVER PROPERTY	
SECTION 0+00	
FIGURE 10	DATE JUNE, 1985
SCALE 1:2000	REVISED
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Baseline

SW

NE

850m. -

800m. -

750m. -

700m. -

Indian River

M-16

Lower Rhyolite Unit (lower portion?)

Sulphides

Dacite Tuff / Breccia

No Assays

Grey Ash Tuff

Dacite Tuff / Breccia

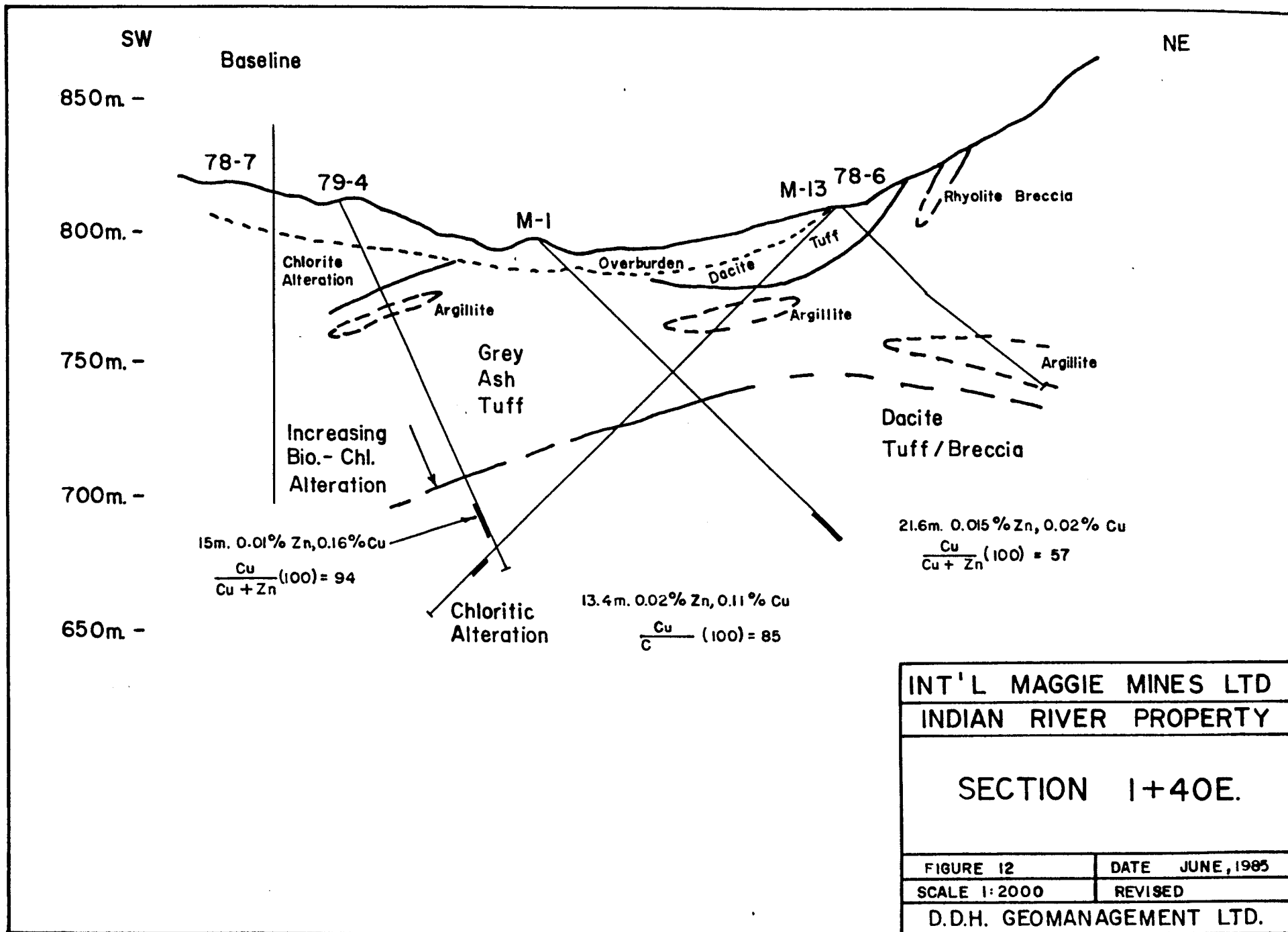
Quartz Stringer Zone, Chlorite Alteration

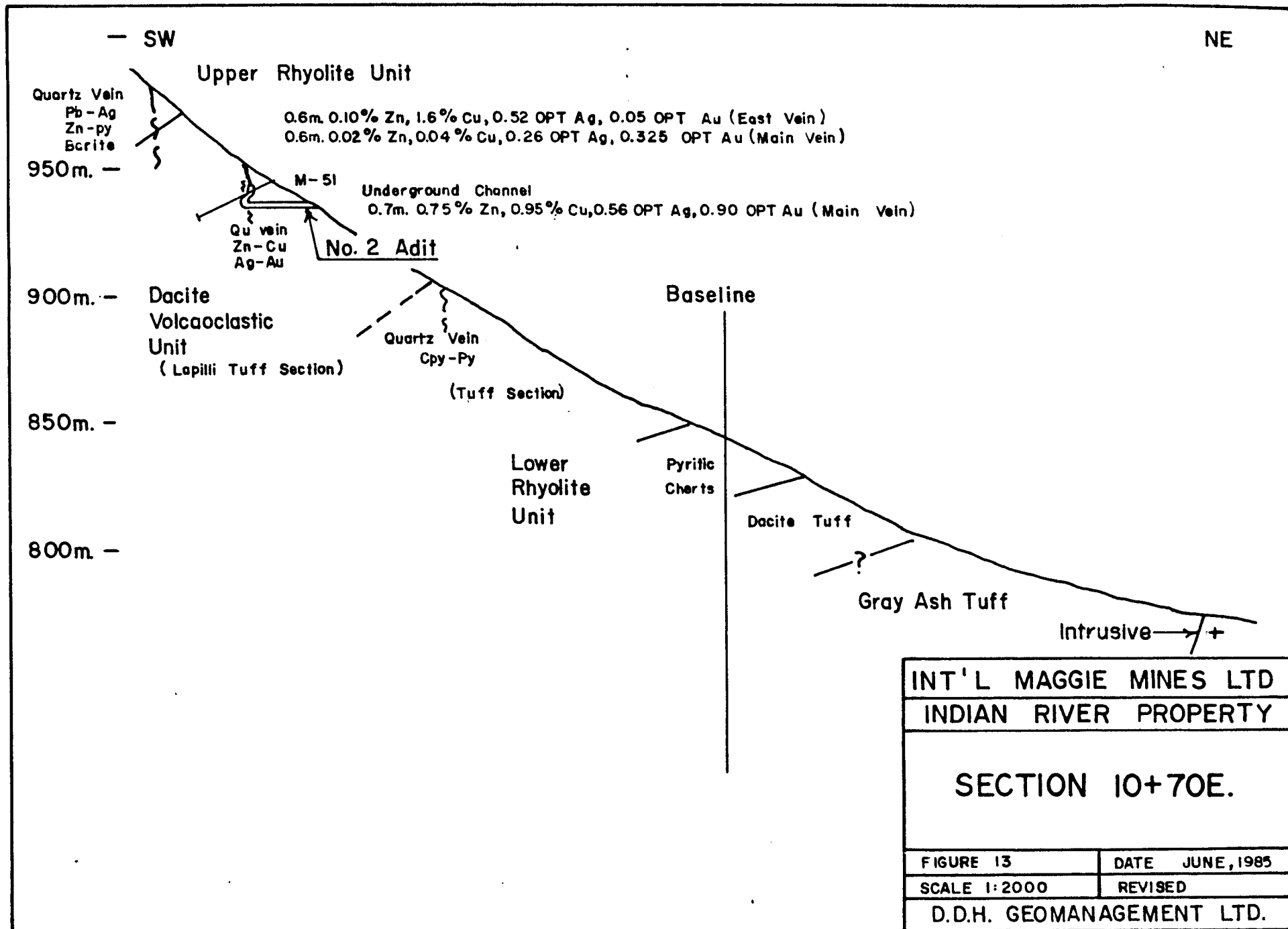
14.6m. 0.01% Zn, 0.02% Cu

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INDIAN RIVER PROPERTY

SECTION 0+80E.

FIGURE 11	DATE JUNE, 1985
SCALE 1:2000	REVISED
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indicate that the underlying rock is the lapilla tuff section of the dacite volcanoclastic unit. The gold-bearing Slumach and the galena-barite-silver veins cross cut the stratigraphy and lie above the lower rhyolite unit (refer to Figure 6).

(e) Geochemical Correlations

Soil geochemical sampling by Placer Development Ltd. has shown two zones of Zn, Pb, Ag and weak Cu response. Results in parts per million are shown in Figures 14 for zinc, Figure 15 for lead, Figure 16 for silver and Figure 17 for copper. These data indicate (1) that Zn, Pb, Ag are concentrated near the northeast expression of the lower rhyolite unit east of the baseline adjacent to the intrusive rocks (See Figure 5) and (2) that Zn, Pb, Ag are concentrated in the area of No. 2 adit in units above the lower rhyolite unit.

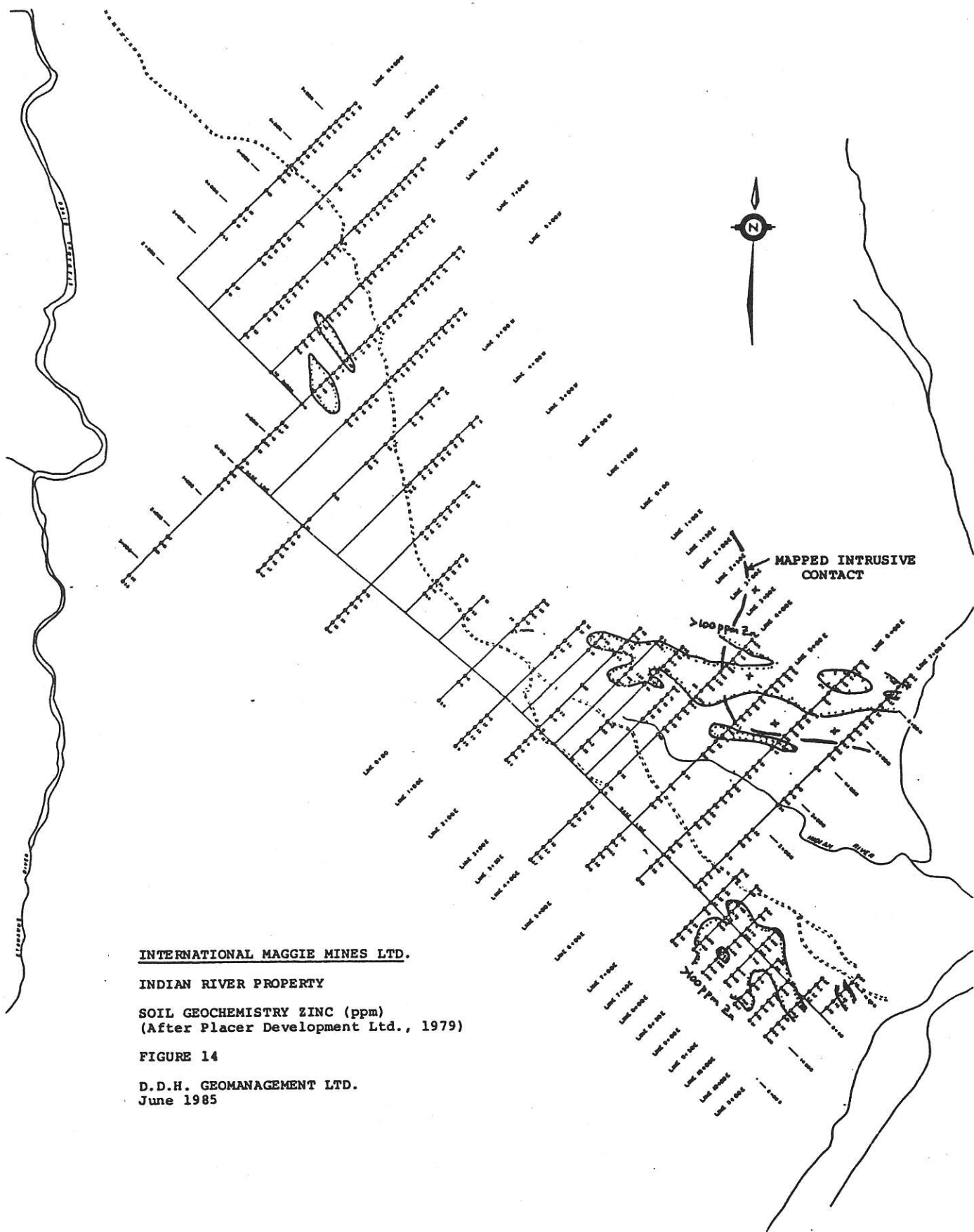
In the area of No. 2 adit, Archibald (1982) reported Zn, Pb, Ag, and Cu soil geochemistry for a portion of the MAR claim. These results (Figure 18) for zinc, Figure 19 for lead, Figure 20 for silver and Figure 21 for copper outline the most anomalous soil geochemistry to date on the property. The southwestern limit of the geochemical response correlates to being in the lapilli tuff section lying above the lower rhyolite unit and below the upper rhyolite unit (See Figure 13).

(f) Geophysical Correlations

Clendenan and Pentland (1979) report that under normal circumstances volcanogenic sulphide mineralization would react favourably to geophysical methods. Since the area of prime interest is located under or very close to B.C. Hydro's high voltage power line, the use of any electrical method is suspect.

The Turam EM method was attempted apparently without success. Clendenan and Pentland (1979) report that "it has been found to have a strong propensity to detect wet shears and in some cases, has failed to indicate sulphides".

Part of the property was tested in 1978 with a Scintrex proton magnetometer. Results were inconclusive but some intrusive contacts and late dykes were detected.



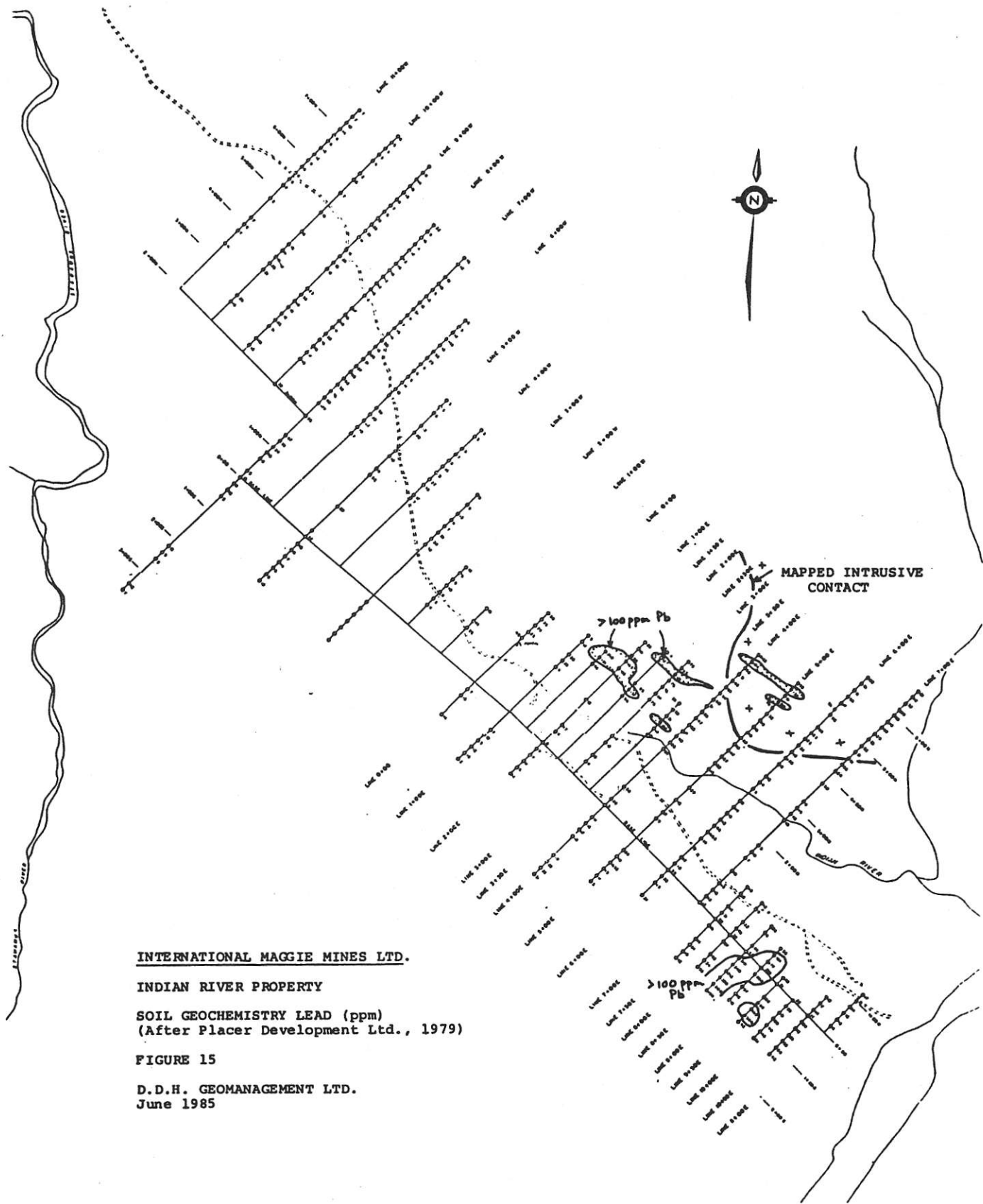
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INDIAN RIVER PROPERTY

SOIL GEOCHEMISTRY ZINC (ppm)
 (After Placer Development Ltd., 1979)

FIGURE 14

D.D.H. GEOMANAGEMENT LTD.
 June 1985



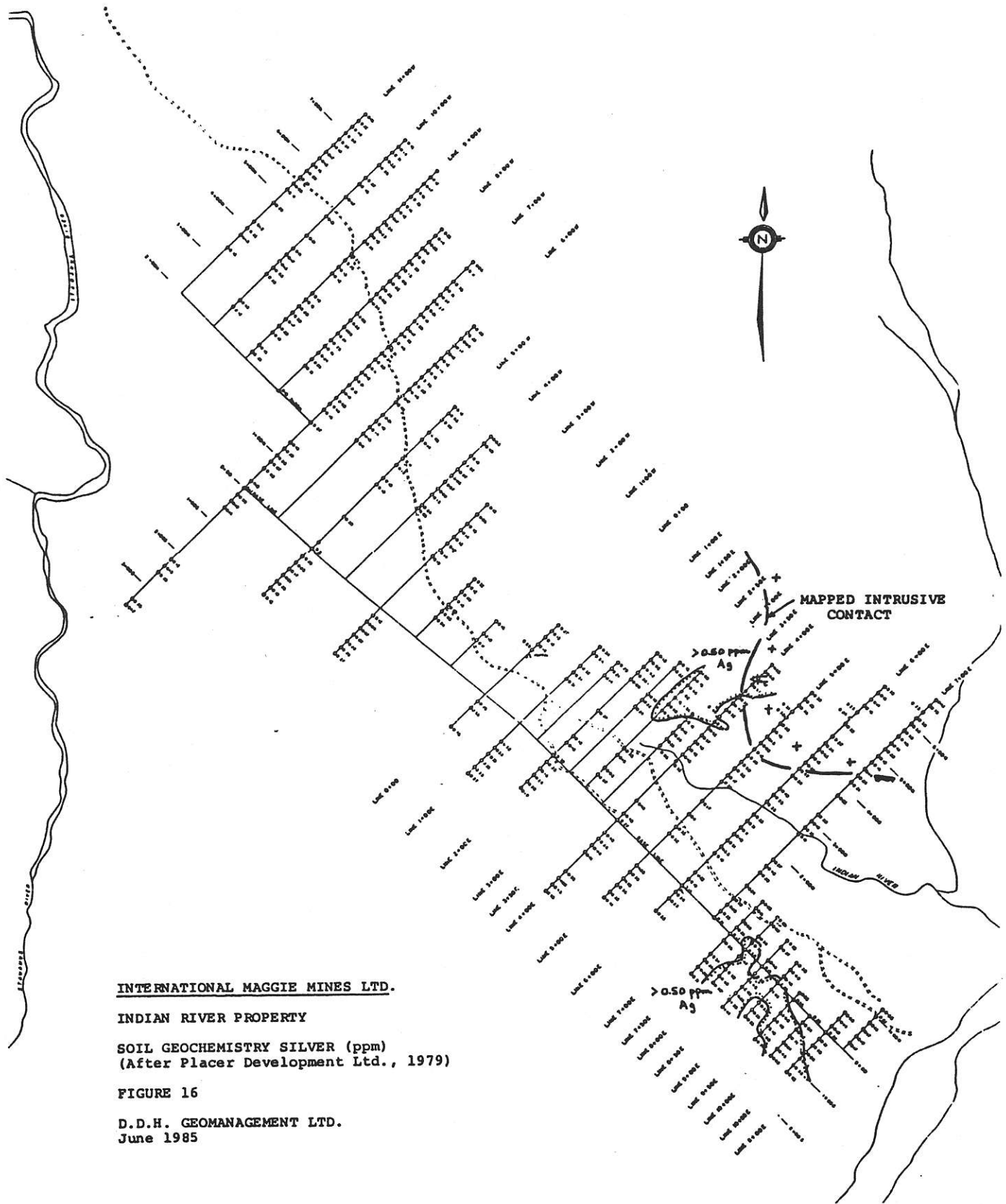
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INDIAN RIVER PROPERTY

SOIL GEOCHEMISTRY LEAD (ppm)
 (After Placer Development Ltd., 1979)

FIGURE 15

D.D.H. GEOMANAGEMENT LTD.
 June 1985



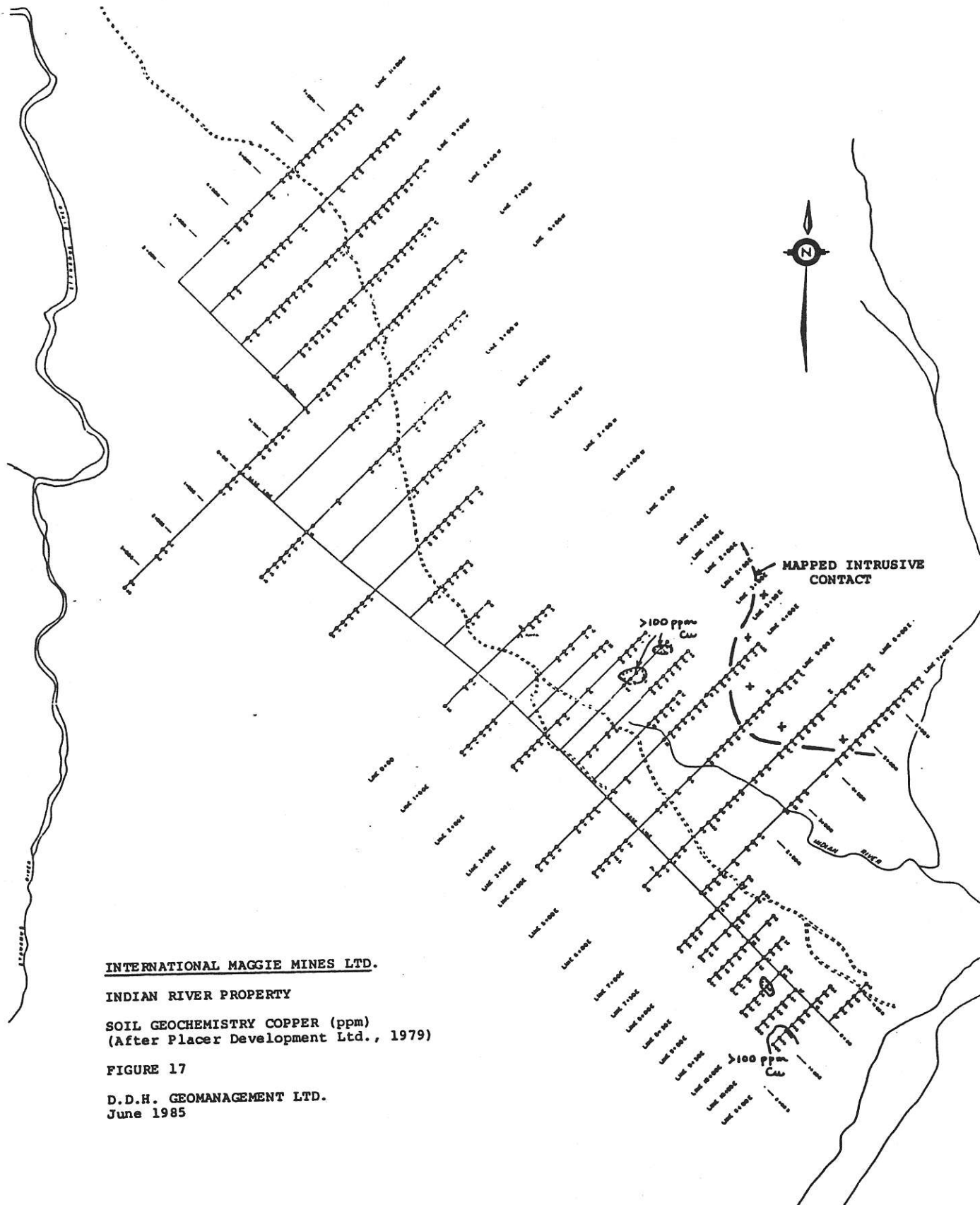
INTERNATIONAL MAGGIE MINES LTD.

INDIAN RIVER PROPERTY

SOIL GEOCHEMISTRY SILVER (ppm)
(After Placer Development Ltd., 1979)

FIGURE 16

D.D.H. GEOMANAGEMENT LTD.
June 1985



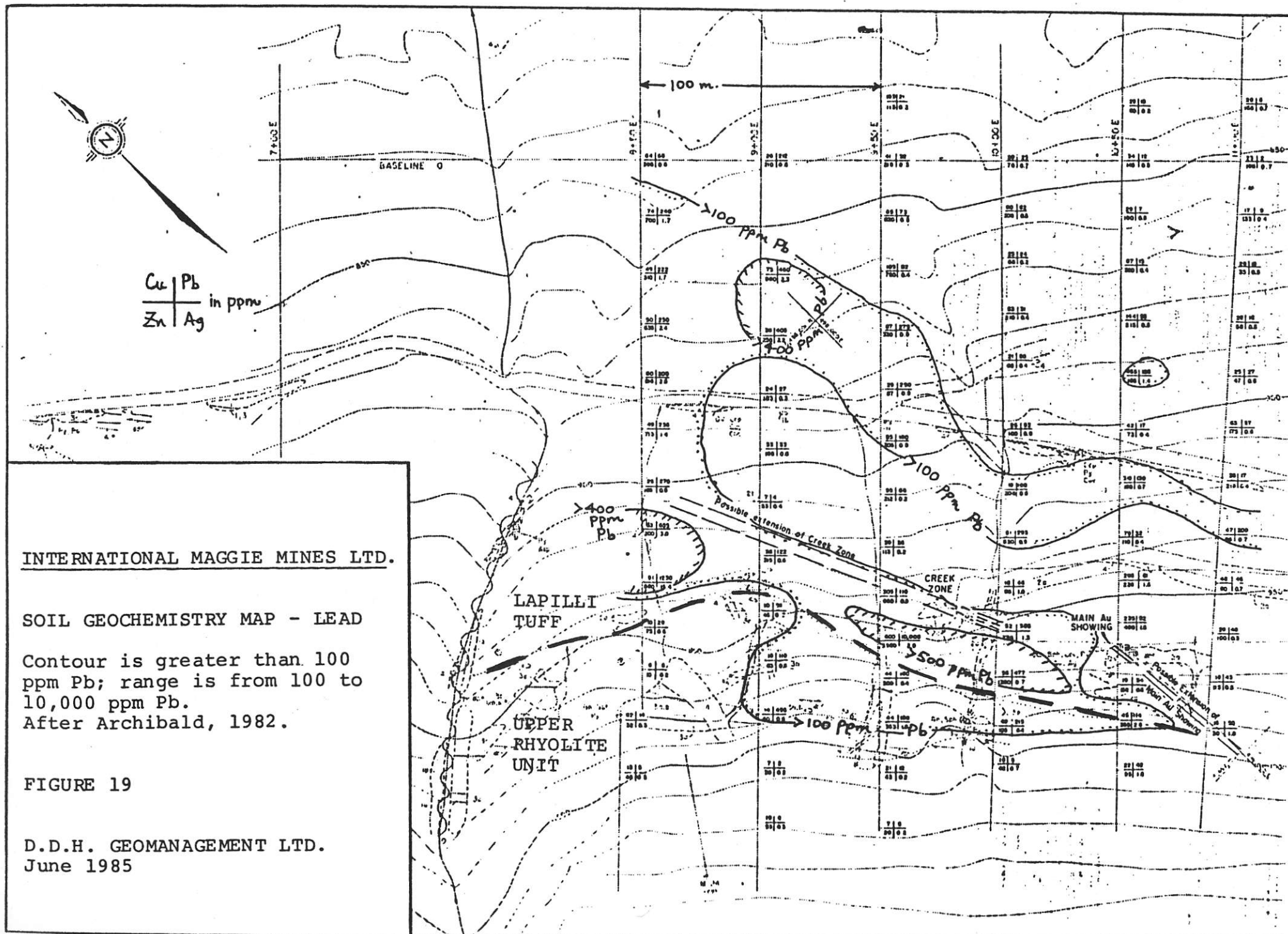
INTERNATIONAL MAGGIE MINES LTD.

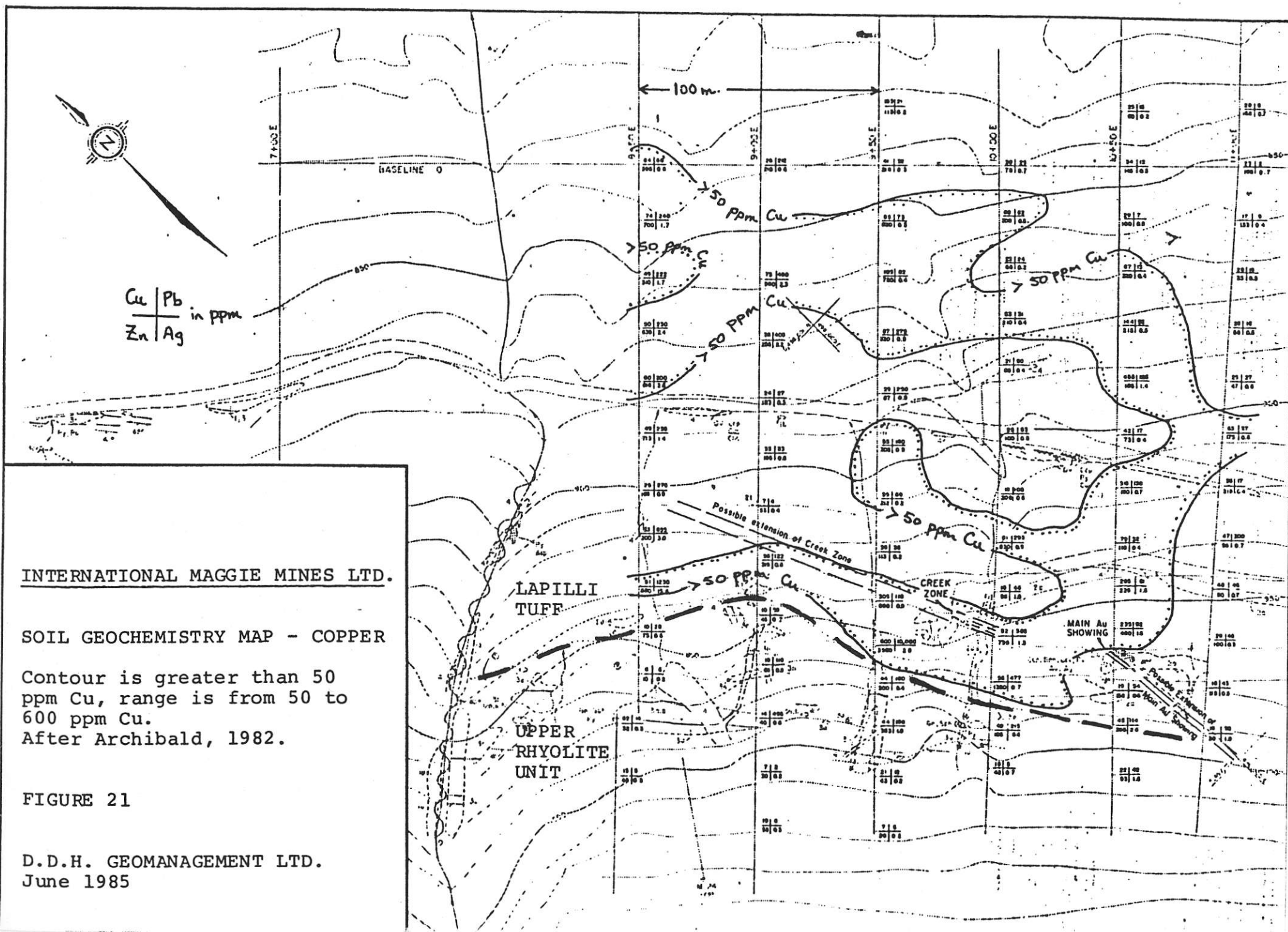
INDIAN RIVER PROPERTY

SOIL GEOCHEMISTRY COPPER (ppm)
(After Placer Development Ltd., 1979)

FIGURE 17

D.D.H. GEOMANAGEMENT LTD.
June 1985





Sutherland (1981) attempted an induced polarization survey from Line 8W to 9+50E (see baseline for location in Figure 7). The conducting results are inconclusive as all anomalous responses paralleled the road directly beneath the B.C. Hydro high voltage power line.

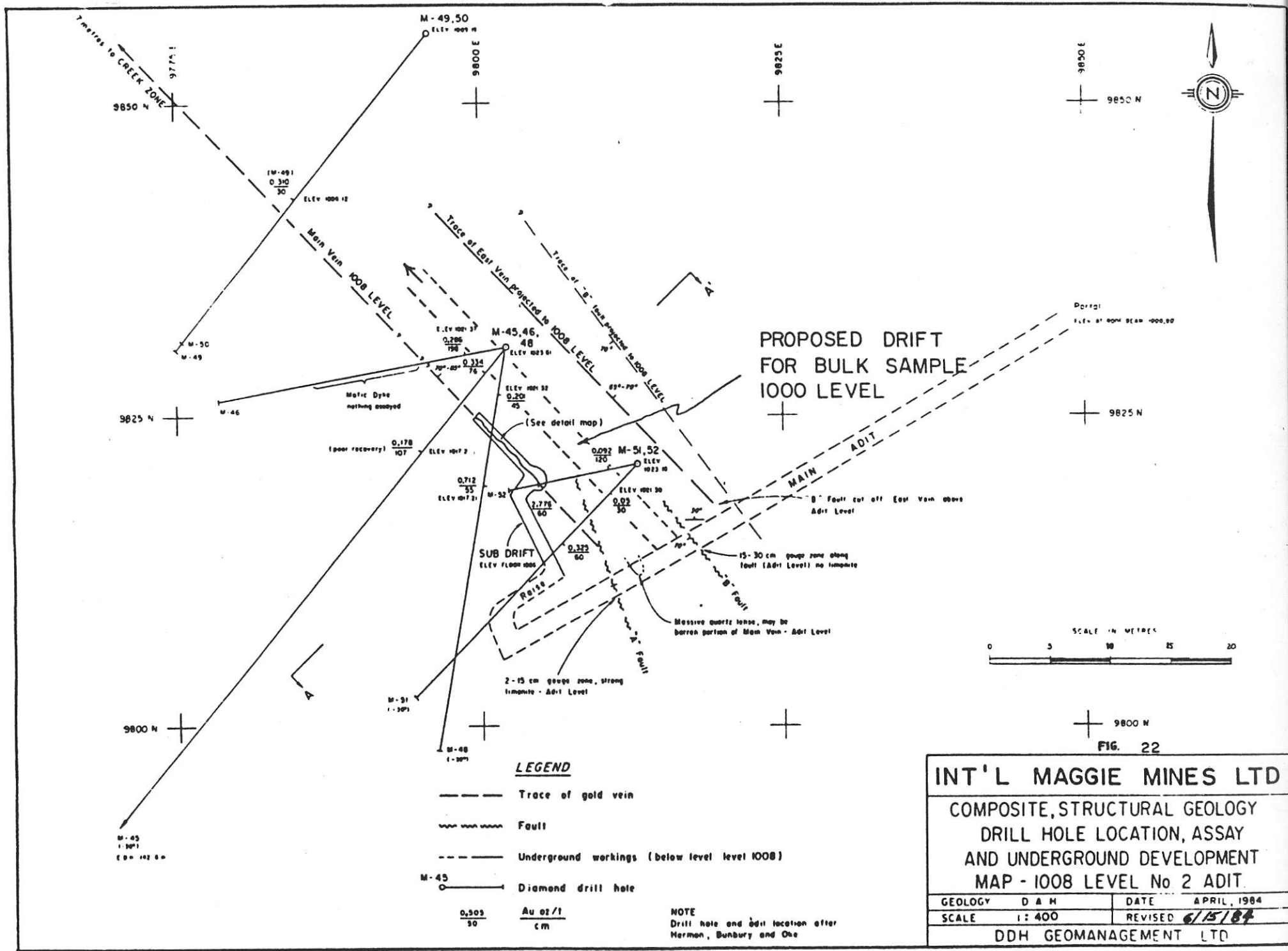
(g) Slumach Gold Zone

Howard (1984) studied the vicinity in and around the No. 2 adit (Figures 22, 23 & 24). The No. 2 adit is mainly in massive brown biotite tuff and lapilli tuff containing some disseminated pyrite. Dark green very fine grained andesite dykes are common in the area, although few have been intersected in the adit to date.

A follow up diamond drill program and an underground exploration program has resulted in defining two parallel mineralized zones, one (Slumach Zone) of which had earlier been discovered by surface prospecting and soil geochemistry (Howard, 1982).

The two parallel mineralized zones (Figures 22 & 24) strike N44W and dip 65 to 85 degrees northeast. The main vein has been intersected on the sub-drift level (1008 level) and drifted on for about 8 metres. The zone has been intersected by diamond drill holes M-45, 48, 49, 51 and 52 over a strike length of about 40 metres and contains high grade widths that range from 30 to 107 centimetres. Lower grade values are commonly present in either or both the foot and hanging walls of the veins. At the present time the total length of the Main Vein is not known but it can be safely assumed that it is in excess of 70 metres, i.e. from sub-drift workings to the Creek Zone as shown in Figure 22.

The East Vein (Figure 24) is located 9 metres northeast of the Main Vein and has been intersected by diamond drill holes M-45, 46, 48, 51 and 52 over widths that range from 30 to 198 centimetres and along strike for about 20 metres. The East Vein is not exposed in the underground workings due to an offset along the "B" fault (see section A-A, Figure 24). Movement along the "B" fault has not been determined, but one would expect that the continuation of the vein system would be north of the present workings, i.e. toward the valley if the fault has a normal movement. The "B" fault may also effect the Main Vein near the No. 2 adit level. It should be noted here that although the Main Vein appeared to be absent in the walls of the No. 2 adit there was



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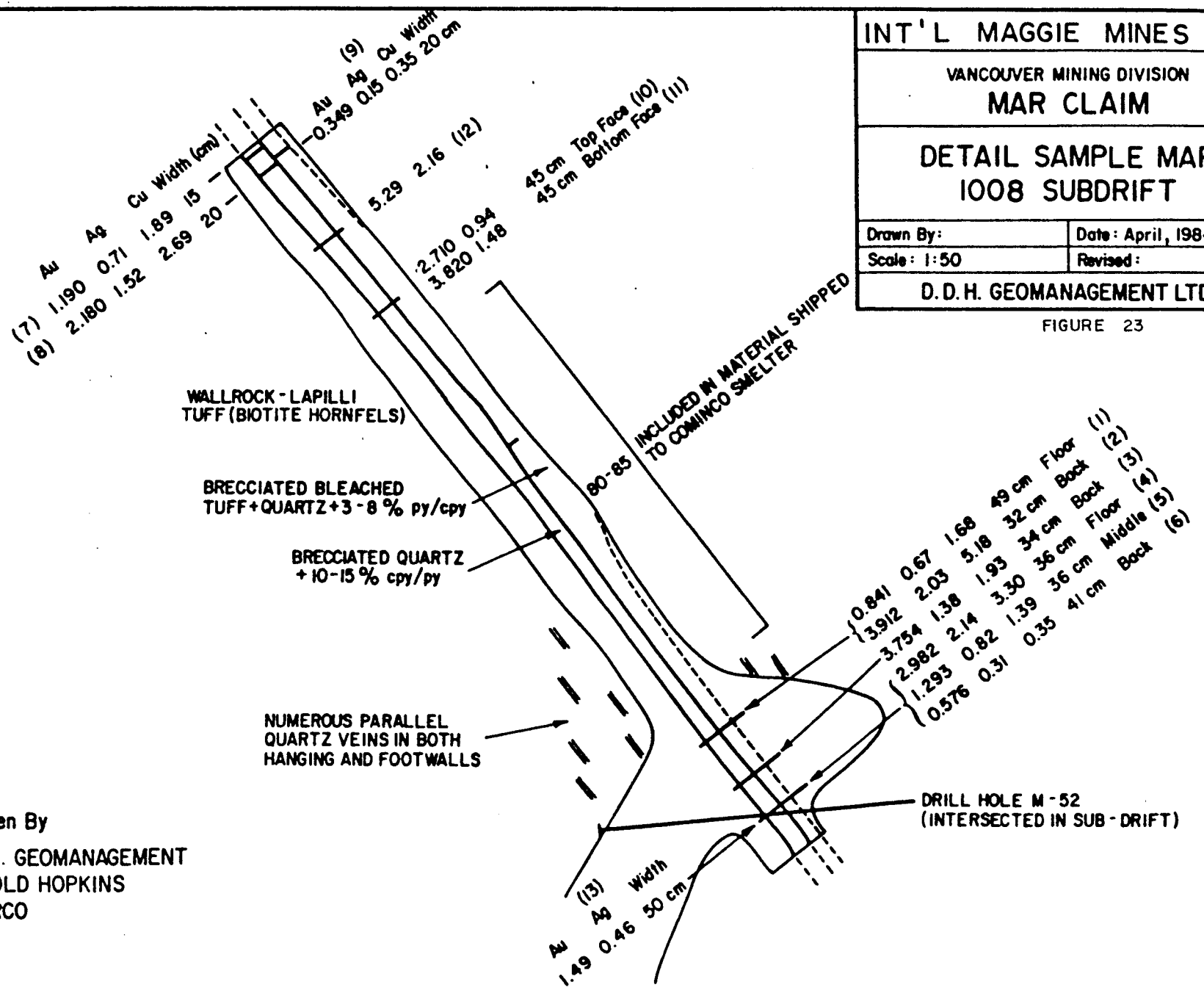
VANCOUVER MINING DIVISION
MAR CLAIM

DETAIL SAMPLE MAP
1008 SUBDRIFT

Drawn By:	Date: April, 1984
Scale: 1:50	Revised:

D. D. H. GEOMANAGEMENT LTD.

FIGURE 23



Samples Taken By

1-9 D.D.H. GEOMANAGEMENT

10+11 HAROLD HOPKINS

12+13 ASARCO

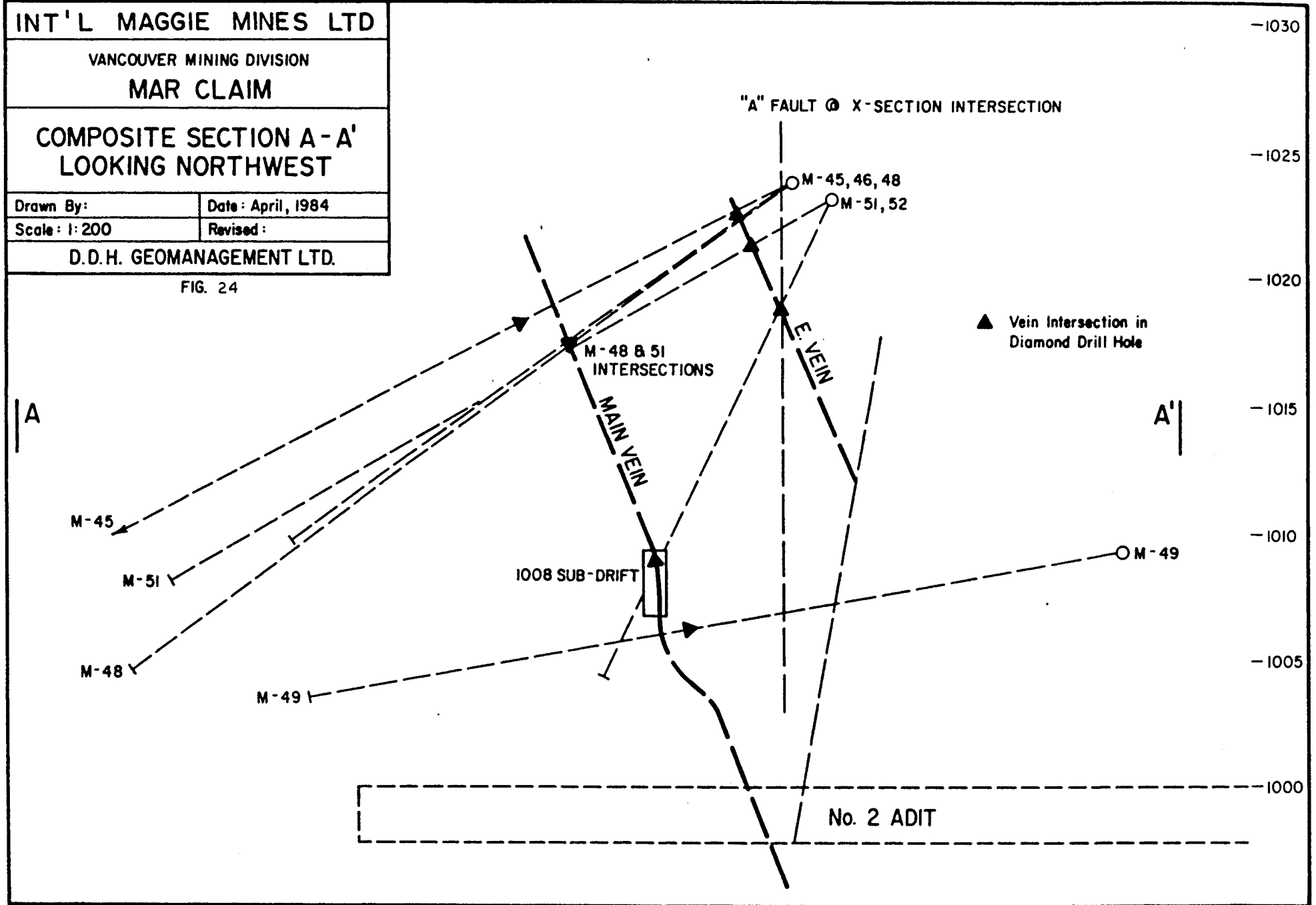
INT'L MAGGIE MINES LTD

VANCOUVER MINING DIVISION
MAR CLAIM

COMPOSITE SECTION A-A'
LOOKING NORTHWEST

Drawn By:	Date: April, 1984
Scale: 1:200	Revised:
D.D.H. GEOMANAGEMENT LTD.	

FIG. 24



an indication on the floor of the adit that the structure was still present, i.e. narrow section containing high sulphide which was not sampled when intersected and subsequently covered by track.

Both the Main Vein and East Vein consist of a 1 - 2 metre wide quartz flooded, brecciated shear zone within which occurs a 5 centimetre to 30 centimetre wide zone of massive intensely fractured quartz containing 5 - 15 percent sulphide. The sulphide mineralization consists of disseminated chalcopyrite, pyrite, local sphalerite and traces of galena plus values in gold and silver. Very fine grained free gold has been reported to be present.

Assay results seem to indicate that there is some relationship between copper content and gold content, although the relationship is quite variable. In general the higher the copper content the higher the gold content will be, but metallurgical tests by Kamloops Research and Assay Laboratory Ltd. show that a considerable amount of the gold occurs as a solid solution with pyrite and as free gold. Metallurgical tests by Kamloops Research on material with a head grade of 3.4 oz/ton gold, 1.8 oz/ton silver, 4.2 percent copper and 4.8 percent zinc gave the following recoveries:

<u>Element</u>	<u>Percent Recovery</u>	<u>Grade</u>
Gold	96.1	10.8 oz/ton
Silver	96.2	5.8 oz/ton
Copper	98.5	13.9 percent
Zinc	98.8	15.8 percent

Assays for the diamond drill holes and No. 1008 sub-drift are shown on the composite map (Figure 22) and detail map (Figure 23).

A weighted average grade of sub-drift samples (Main Vein) collected by the writers at various times averaged 1.908 ounces gold over a 31 centimetre.

The foot and hanging walls up to several metres either side of the Main Vein are intensely fractured and contain numerous hairline to 10 cm parallel quartz veins which rarely contain much sulphide except for a 30 - 60 centimetre zone immediately adjacent to the Main Vein. The adjoining portion of the vein is commonly bleached,

brecciated and can contain up to 8 percent sulphide (mainly pyrite and minor chalcopyrite). Assays of this material ranges from 0.03 to 0.05 ounces per ton. The presence of gold plus the intense fracturing and veining in foot and hanging wall portions of the main structure suggests that the possibility of the Main Vein widening is very good.

Asarco Exploration Company of Canada Ltd. in July 1984 examined the sub-drift. Their report is summarized in Figure 25 which outlines their sampling results on the Slumach zone.

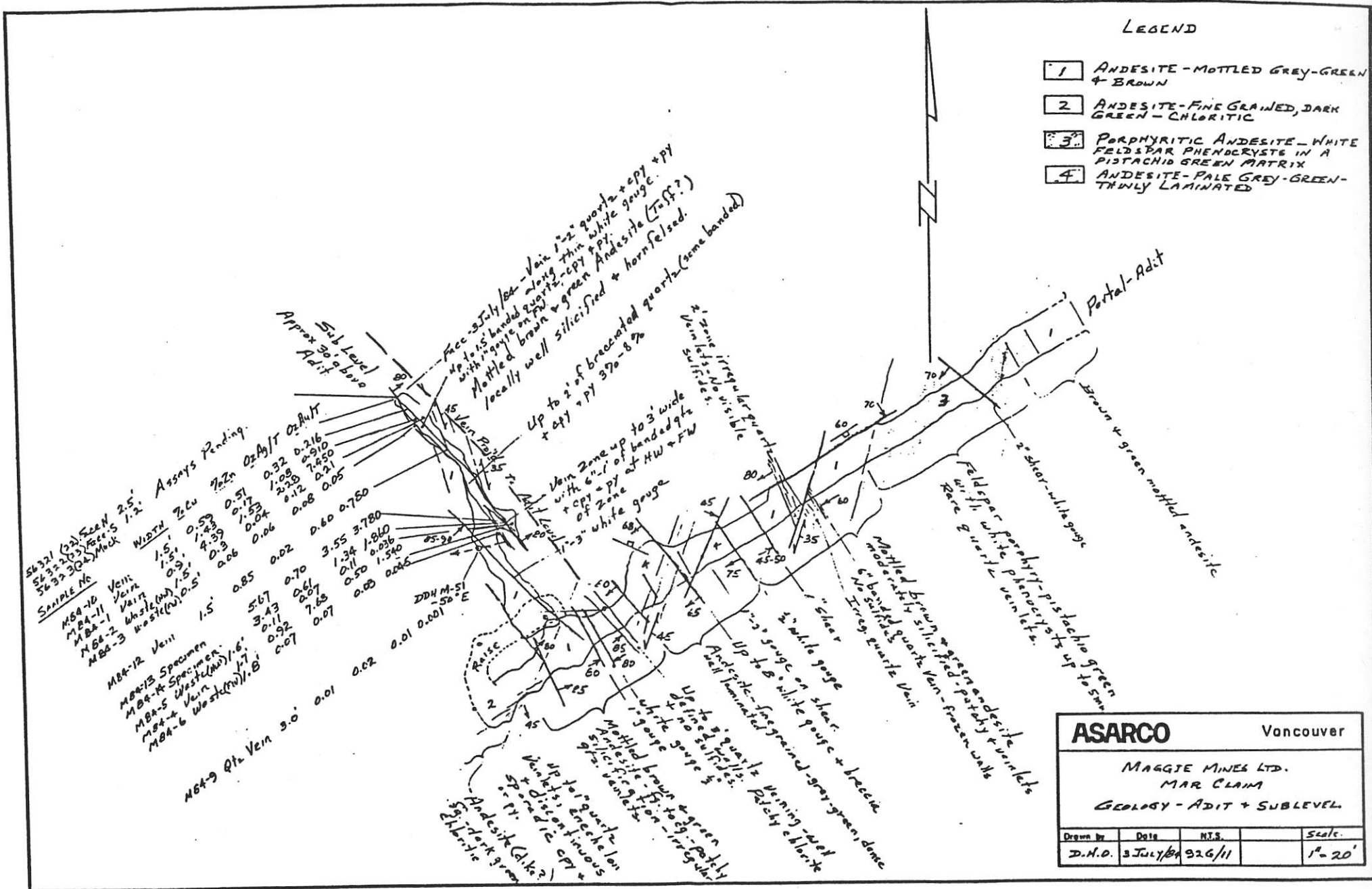
VOLCANOGENIC MASSIVE SULPHIDE MODEL WITH REFERENCE TO THE SLUMACH GOLD ZONE

The type of model employed is outlined graphically by the late Julian Boldy (1981) whose idealized section is reproduced in Figure 26.

The correlation of geological units based on their stratigraphic position to the occurrence of zinc-copper mineralization is in agreement with a volcanogenic massive sulphide model for the Indian River property of International Maggie Mines Ltd. The pyritic siliceous rhyolite chert horizon associated with the top of the lower rhyolite unit as exposed on the property appears to be on the marginal portion of the basin. Following this concept, the model suggests that the inferred massive sulphide body lies within the hill to the southwest of the baseline. This concept also correlates well with the increase in zinc to the southwest as seen in the geological sections.

The existence of chloritic alteration and quartz vein stringer copper mineralization in the stratigraphically lower dacite tuff-breccia unit also agrees with a volcanogenic model. The geological sections indicated that an inferred chlorite quartz stringer alteration pipe may occur to the southwest of the present information.

Vein mineralization such as exposed in the Slumach gold zone (No. 2 adit area) in the lapilli tuff section of the dacite volcanoclastic unit and the lead-silver-zinc-barite quartz vein exposed in the upper rhyolite unit occur stratigraphically above the lower rhyolite unit which contains the siliceous basin.



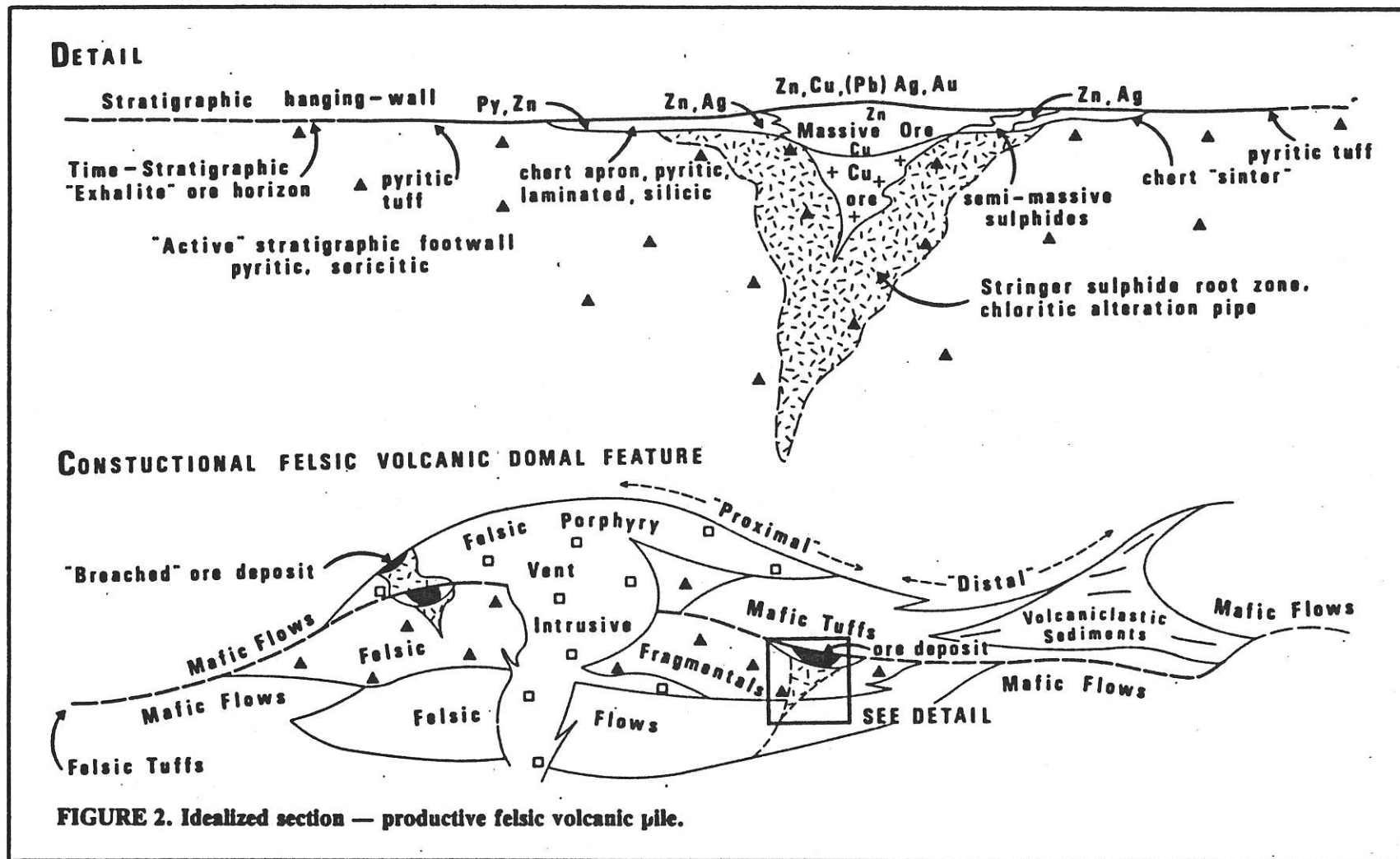
INTERNATIONAL MAGGIE MINES LTD.

Reduced scale 1" = 31'

ASARCO - GEOLOGY, ADIT AND SUBDRIFT : INDIAN RIVER PROPERTY

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FIGURE 25



INTERNATIONAL MAGGIE MINES LTD.

INDIAN RIVER PROPERTY

VOLCANOGENIC MODEL
IDEALIZED SECTION
 (After G. D. J. Boldy 1981)

D.D.H. GEOMANAGEMENT LTD.

FIGURE 26

Geochemical response in the vicinity of the No. 2 adit is relatively better in terms of magnitude than elsewhere on the property. It is noted that geochemical response presumably associated with the projection of the lower rhyolite unit to the northeast of the baseline are best adjacent to the intrusive contact. This is suggestive that some degree of remobilization has occurred. The No. 2 adit area is not far removed from an intrusive contact. It is possible that the Slumach gold bearing sphalerite-chalcopyrite - pyrite quartz vein as well as the galena - barite - silver - sphalerite vein are remobilized from constituents lower in the stratigraphic sequence. It is further possible given the above concept that a massive sulphide body may underlie the No. 2 adit area.

Figure 27 illustrates the volcanogenic massive sulphide model as it applies to the property and illustrates the known data from the inferred location of the postulated massive sulphide deposit. Figure 27 also illustrates the relationship of the remobilized vein mineralization relative to the inferred location of the massive sulphide body.

CONCLUSION ON EXPLORATION POTENTIAL

The Indian River property of International Maggie Mines Ltd. located at the headwaters of Indian River, near Squamish, B.C. is the site of a volcanogenic basemetals deposit in Lower Cretaceous Gambier Group rocks.

Compilation of available data using a stratigraphic concept has indicated that stratiform zinc-copper mineralization is associated with the lower rhyolite unit. Past work has indicated that a zinc relative to copper ratio increases towards the southwest at a moderate dip.

The presence of the gold-bearing Slumach zone in the No. 2 adit area indicates that remobilized mineralization occurs above the project location of a possible massive sulphide body. From this compilation, the past work has defined a marginal type of mineralization evaluated along strike and has suggested mineral gradients to the southwest. Further evaluation by drilling is required to test the model.

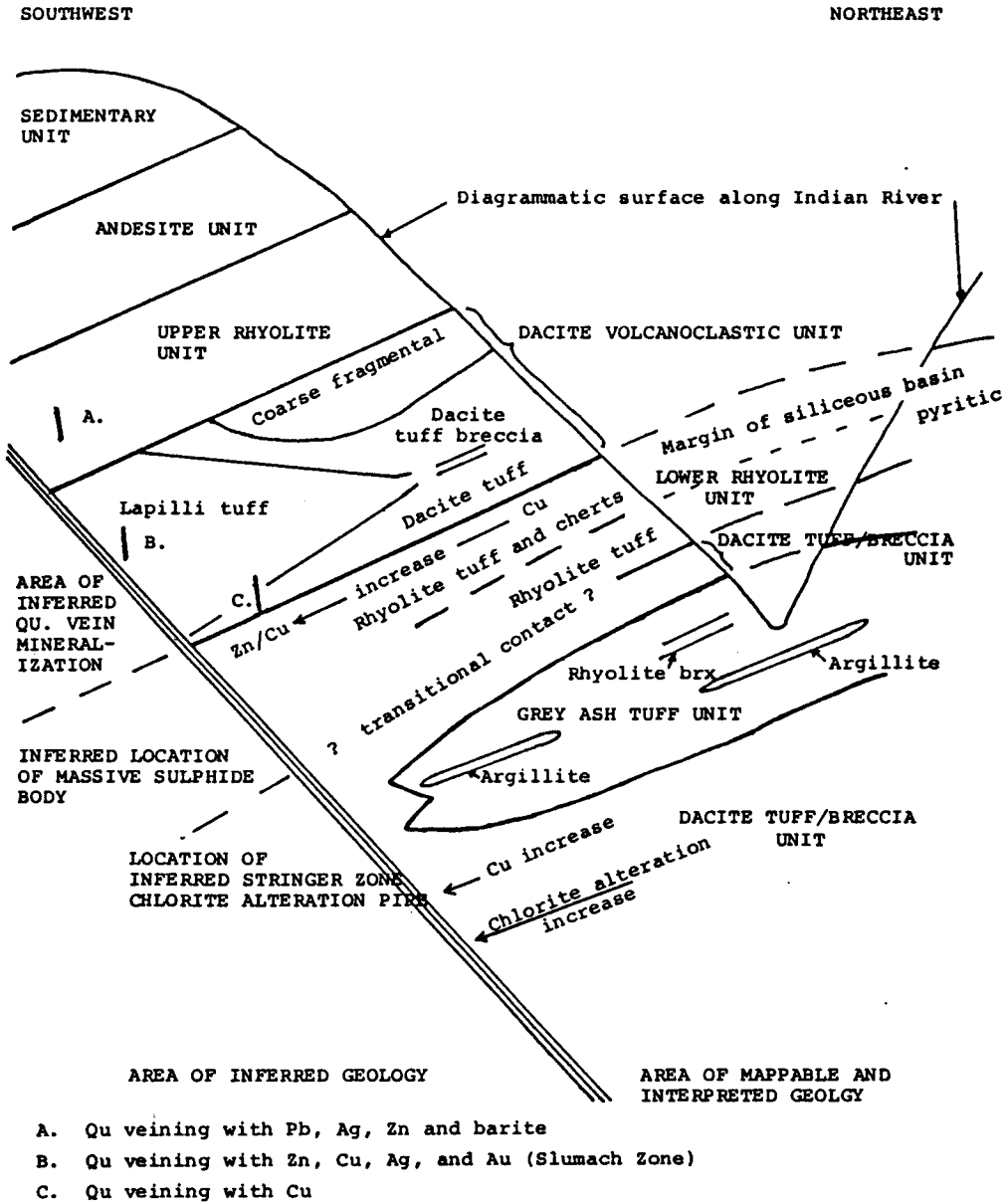


FIGURE 27

IDEALIZED CROSS SECTION OF VOLCANOGENIC MODEL ILLUSTRATING INFERRED LOCATION OF MASSIVE SULPHIDE AND POSITION OF REMOBLIZED VEIN MINERALIZATION RELATIVE TO KNOWN STRATIGRAPHY

RECOMMENDATIONS

In light of the foregoing, it is recommended that the indicated mineral gradients for (1) a massive sulphide body and (2) an extension of the remobilized gold mineralization be tested by a two stage drill program. Such drilling to be directed to the southwest of the known information, i.e. down dip of the indicated mineral gradients, to test the location of the lower rhyolite unit and its tenor. As the remobilization or leakage mineralization overlies the lower rhyolite unit, such drilling will also test the strike and down dip extension of such veins as that exposed in the Slumach (No. 2 adit).

ESTIMATED COST OF PROPOSED PROGRAM

PHASE I

Diamond drilling

Section 11+00E 2 holes for 600m
Section 9+00E 2 holes for 500m
Section 7+00E 2 holes for 500m
Section 4+00E 2 holes for 400m
2,000m

@ \$82.50/m including
mobilization/demobilization
and mud costs

\$ 165,000.00

Assays	7,000.00
Vehicle rental and operating cost	1,500.00
Camp Operation	5,000.00
Geology, core logging and supervision	10,000.00
Engineering report	<u>5,000.00</u>
Subtotal Phase I	\$ 193,500.00
Contingency (10% +/-)	<u>19,500.00</u>
TOTAL PHASE I	\$ 213,000.00

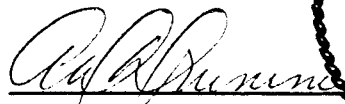
PHASE II

Contingent upon favourable results and an engineering report recommending further work, Phase II will require additional definition drilling.

Allow	TOTAL PHASE II	\$ 500,000.00
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Total estimated cost of Phase I and II is \$713,000.00.

Respectfully submitted,

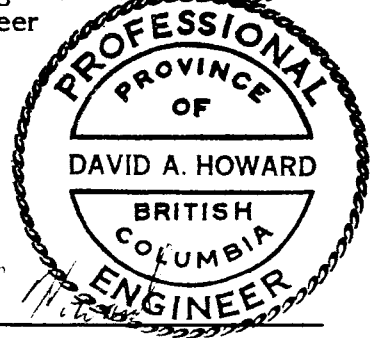


A.D. Drummond, Ph. D., P. Eng.
D.D.H. Geomanagement Ltd.
Geological Engineer





D. A. Howard, M.Sc., P. Eng.
D. D. H. Geomanagement Ltd.
Geological Engineer




D.D.H. GEOMANAGEMENT LTD.

CERTIFICATION

I, Arthur Darryl Drummond of the City of Vancouver, Province of British Columbia, hereby certify as follows:

- 1) I am a geological engineer residing at 3249 West 35th Avenue, Vancouver, B.C. and employed by D.D.H. Geomanagement Ltd., with an office at 422 - 470 Granville Street, Vancouver, B.C.
- 2) I am a registered Professional Engineer of the Province of British Columbia, Certificate No. 5778. I graduated from the University of British Columbia in 1959 with a B.A.Sc. in geological engineering and in 1961 with a M.A.Sc. in geological engineering. I graduated from the University of California in 1966 with a Ph.D. in geology.
- 3) I have practised my profession continuously for 24 years with the Placer Development Group of Companies at Craigmont, Endako and Gibraltar mines and in mineral exploration in Canada, United States of America, Chile, Argentina, Mexico and the Philippines.
- 4) I am a co-author of this report which is based on published and unpublished reports, and from personal experience by visits to the property, the latest being in November 1983.
- 5) I have no interest, direct or indirect, in the property discussed in this report or in the securities of International Maggie Mines Ltd.
- 6) This report may be utilized for development of the property, providing that no portion may be used out of context in such a manner as to convey a meaning which differs from that set out in the whole.
- 7) Consent is hereby given to International Maggie Mines Ltd. to reproduce this report or any part of it for the purposes of a prospectus or a statement of material facts for development of the property, or facts relating to the raising of funds.

Dated at Vancouver, B.C. this 17th day of June, 1985.


A.D. Drummond, Ph.D., P. Eng.
D.D.H. GEOMANAGEMENT LTD.
Geological Engineer

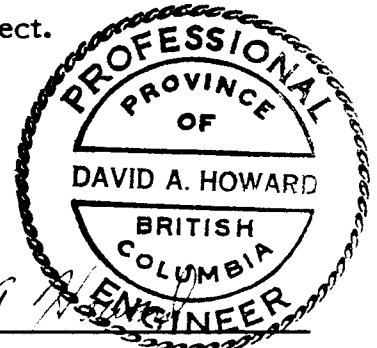
D.D.H. GEOMANAGEMENT LTD.

CERTIFICATION

I, David A. Howard, of the City of Vancouver, Province of British Columbia, hereby certify as follows:

1. I am a geologist residing at 9040 Glenallan Gate, Richmond, B.C., with an office at 422 - 470 Granville Street, Vancouver, B.C.
2. I am a registered Professional Engineer of the Province of British Columbia. I graduated from Montana State University in 1964 and from the University of Washington in 1967.
3. I have practised my profession continuously since June, 1966.
4. The information contained in this report is derived from data contained in company files, prior knowledge of the property, government publications, and several examinations the latest being March, 1984.
5. I have no interest, direct or indirect, in the claims of International Maggie Mines Ltd., or in the securities of International Maggie Mines Ltd. or its affiliates, nor do I expect to receive any.
6. I consent to the use of this report in or in connection with a statement of material facts relating to the raising of funds for this project.

Dated at Vancouver, B.C., this 17th day of June, 1985.



David A. Howard, M.Sc., P. Eng.
D.D.H. Geomanagement Ltd.
Geological Engineer

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