# RICHARDSON GEOLOGICAL CONSULTING LTD.

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ON THE
WHIPSAW PROPERTY

SIMILKAMEEN MINING DIVISION, BRITISH COLUMBIA

NTS 92H/7

Latitude 49°16' N; Longitude 120°45' W

**FOR** 

MARTECH INDUSTRIES INC.

BY

PAUL W. RICHARDSON, Ph.D., P.Eng.

Vancouver, B.C.

GEOLOGICAL SURVEY BRANCH ASSESSMENT REPORT

P.W. RICHARDSO

# TABLE OF CONTENTS

.

SUMMARY	******
INTRODUCTION	
LOCATION AND ACCESS	2
CLAIMS	
HISTORY	
GEOLOGY	
THE 1998 DIAMOND DRILLING PROGRAM	
COSTS OF THE 1998 PROGRAM	11
CONCLUSIONS	
RECOMMENDATIONS	
REFERENCES	
STATEMENT OF QUALIFICATIONS	

APPENDIX 1 - Diamond Drill Logs

APPENDIX 2 - Assay Certificates

# LIST OF ILLUSTRATIONS

	<u> </u>	OLLOWING PAGE
FIGURE 1 - LOCATION MAP		2
FIGURE 2 - ACCESS MAP	1:250,000	2
FIGURE 3 - CLAIM MAP	1:50,000	2
FIGURE 4 - PORPHYRY AREA	1:2,500	In Pocket
FIGURE 5- CROSS SECTION A-A'	1:1,000	In Pocket
FIGURE 6- DDH M98-10	1:1,000	9

## SUMMARY

The Whipsaw property contains mineralization that includes copper, gold, silver, molybdenum, zinc and lead and is related to the Whipsaw Porphyry stock. The stock intrudes the west-dipping mineralized contact between the Upper Triassic Nicola Group volcanics and sediments and the Jurassic-Cretaceous Eagle Granodiorite. Copper, molybdenum and gold mineralization has been found to date mainly in the Nicola rocks, and is related spatially to the perimeter of the Whipsaw Porphyry.

Intense copper-zinc stream sediment anomalies were discovered in 45 and 47 Mile creeks in 1959, and were traced upstream to the northern and southern contact areas of the Whipsaw Porphyry. Since 1959, various parts of the area of interest were covered by claim groups with separate and unrelated ownerships. In 1987, all the properties were consolidated by World Wide Minerals Ltd., and it was possible, for the first time, to plan an exploration program covering the entire area of interest.

Drilling programs, based on geophysics and geochemistry correlated with geology, have outlined extensive areas of 0.2-0.3% copper mineralization accompanied by some molybdenum, and the geochemistry has indicated an area of gold potential, the Skarn area, in the southern part of the Porphyry area.

A diamond drilling program was carried out in 1998 to continue the investigation for one or more economic porphyry copper deposits within this large property. The program consisted of two holes totaling 138.98m (456 ft), and cost \$24,706.13 (\$177.77/m).

# INTRODUCTION

The Whipsaw property, which is in the Similkameen District of British Columbia, contains mineralization that includes Cu, Au, Ag, Mo. Zn and Pb in several zones related to the Whipsaw Porphyry intrusion and which extends over a large area north and south of Whipsaw Creek. After the original staking of gold-bearing, quartzsulfide vein deposits in 1908, mineral claims covering various parts of the mineralized area had always been held by several owners. Major geochemical stream sediment and soil anomalies containing up to 1.8% copper were discovered in 1959 in two tributaries entering Whipsaw Creek from the north. The difficult ground situation became more complex after this discovery of the porphyry potential in the northern part of the present property. In 1987, for the first time, the ground was consolidated by World Wide Minerals Ltd., making it possible to plan exploration projects without property line constraints, as was the case in all the pre-1987 work (Richardson, 1988a).

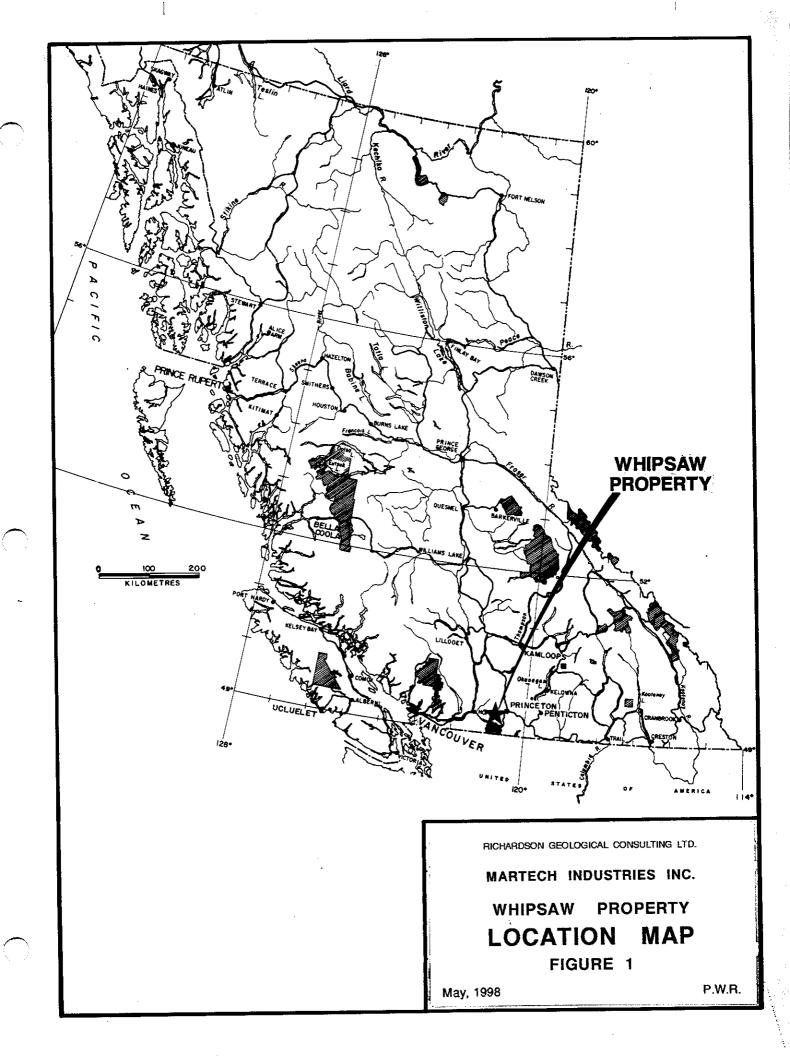
The Whipsaw property is at the early drilling stage of exploration, and no ore reserves have been defined as yet. For this stage of exploration, the Property has responded well, with several drill intersections containing greater than 0.2 % copper (Paulus, 1972). Some individual drill intersections assay between 0.4 and 0.5 % copper.

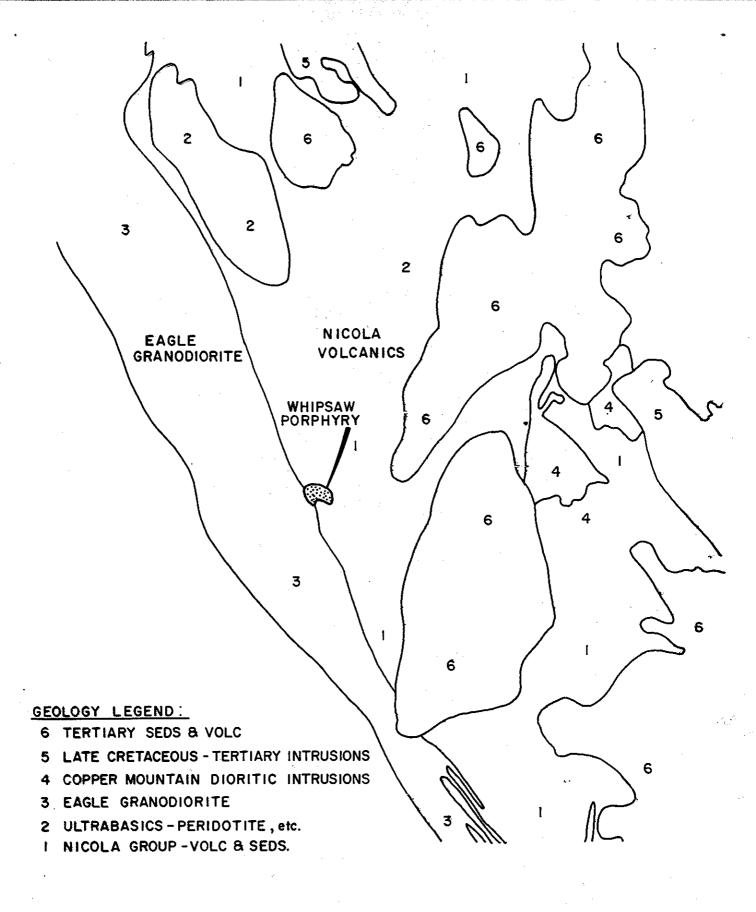
#### LOCATION AND ACCESS

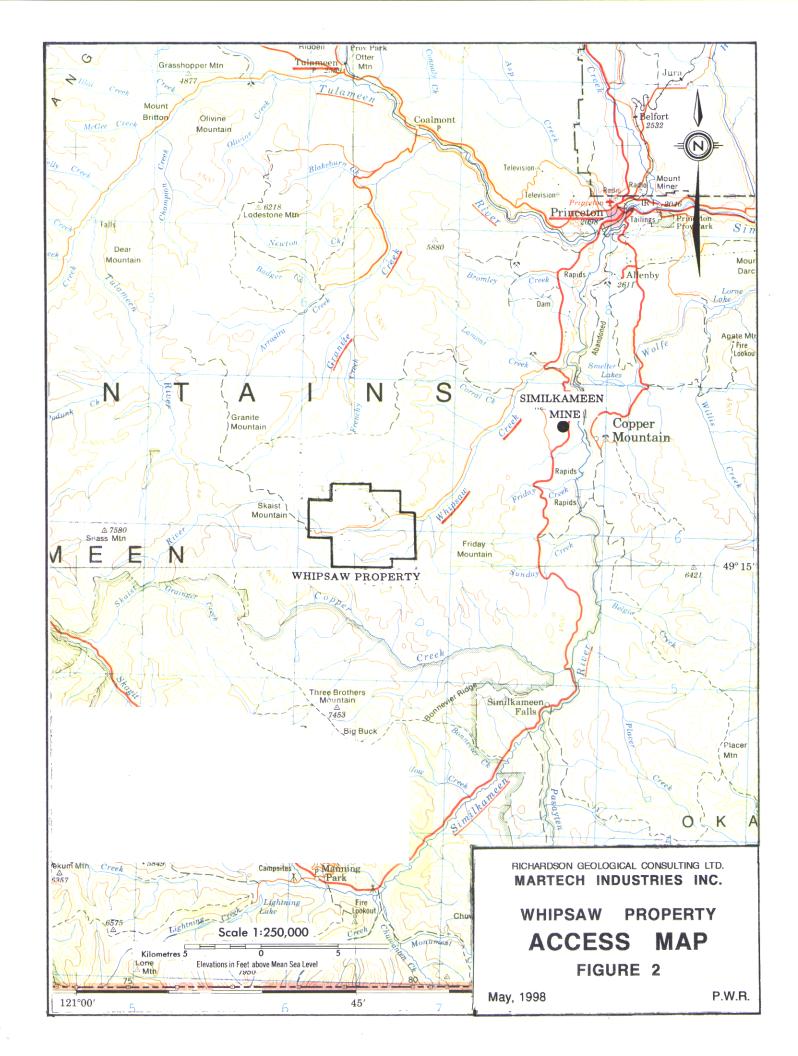
The Whipsaw property is in the Similkameen Mining Division, British Columbia at latitude 49°16' N, longitude 120°45' W on NTS Map 92H/7 (Figure 1). The property is 170 km east of Vancouver, and is 26 km southwest of Princeton. The Similkameen copper-gold mine is 15 km ENE of the property (Figure 2).

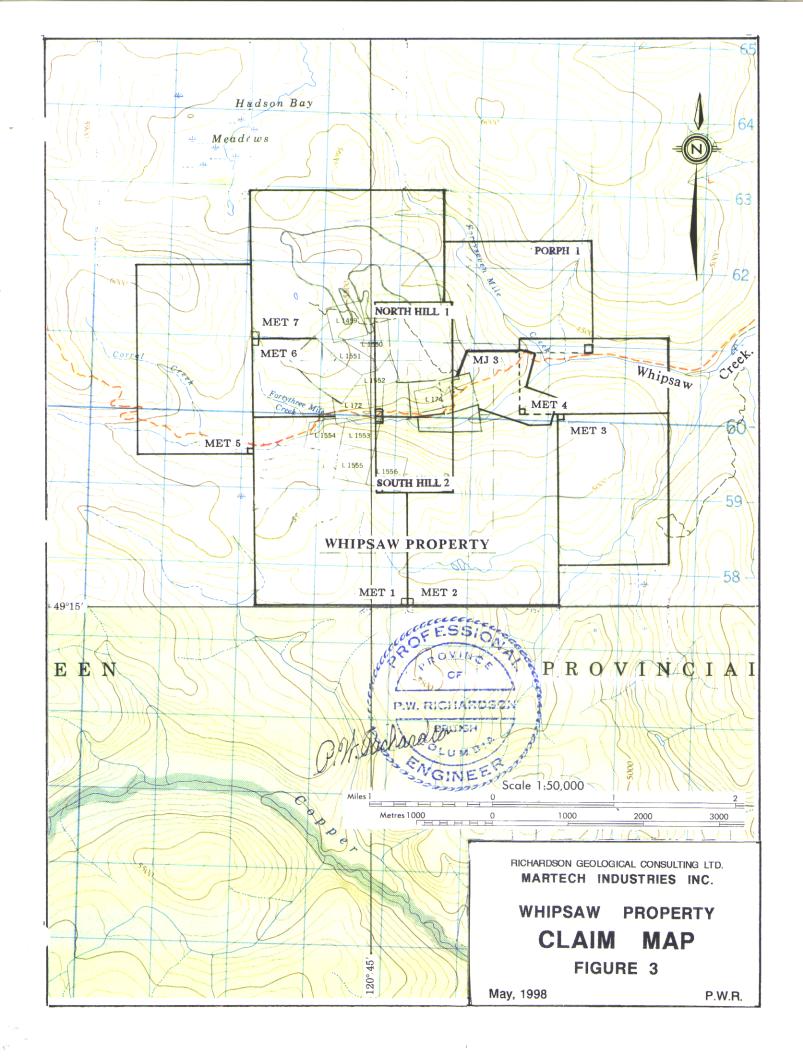
Access from Vancouver is via Highway 401 to Hope and Highway 3 to Princeton. Thirteen km south of Princeton, a good logging road leaves Highway 3 at Whipsaw Creek and goes southwestward along the north bank of the creek through the property, a distance of 20 km to the camp (Figure 2). Numerous logging and mining roads give good access to most parts of the property.

Whipsaw Creek flows eastward through the middle of the property (Figure 3). The topography within the property is generally moderate, but there are some deeply incised valleys. Elevations range from 1385 m to 1660 m. The property is covered with large stands of commercial evergreen trees. There is little undergrowth, but dense brush does occur locally. Extensive logging is currently being done, and there are increasing areas of clearcut which have obliterated the company's grid lines in some areas. In general, outcrop is sparse, but in many areas the overburden is less than one metre deep. Swampy areas occur near the sources of most of the creeks.









# **CLAIMS**

The Whipsaw property consists of two groups of mineral claims and one Mineral Lease totaling 47+ units (Figure 3). The pertinent claim data are as follows:

Name	Title No.	No. of Units	Record Date	Expiry Date
Mineral Lease #336(lots 172	250138 & 1549-15	1 🗸	Jan 13/64	Jan 13/99
#330(1015 172 OK#3 Fr.	250237	30) 1 <sup>⊬</sup>	Mar 18/66	Mar 18/2000*
		1 /	Mar 18/66	
OK#4 Fr.	250238	-		Mar 18/2000*
OK#5 Fr.	250239	1 >	Mar 18/66	Mar 18/2000*
MET 1	249225	20 🗸	May 13/87	May 13/2000
MET 2	249226	20 🐇	May 13/87	May 13/2000*
PORPH 1	301858	12 <sup>/</sup>	June 21/91	June 21/2000*
OK#6 Fr.	250326	1 /	June 25/71	June 25/2000*
OK#7 Fr	250327	1 '	June 25/71	June 25/2000*
Silvertip No.1	250241	1 ″	June 28/66	June 28/2000
Silvertip No. 2	250242	1	June 28/66	June 28/2000
OK#1	250180	1 ·	June 29/64	June 29/2000
OK#2	250181	1 🗸	June 29/64	June 29/2000*
OK#8	250328	1 *	July 09/71	July 09/2000*
NORTH HILL #1	302359	9 🗸	July 19/91	July 19/2001*
SOUTH HILL #2	302360	9 ⊭	July 22/91	July 22/2000*
MJ3	248611	6 ∗	July 26/77	July 26/2000*
MET 3	249277	12 ×	Nov 24/87	Nov 24/99*
MET 4	249278	<b>8</b> ·	Nov 24/87	Nov 24/99*
MET 5	249279	15 ∗	Nov 24/87	Nov 24/99*
MET 6	249280	9 🗸	Nov 24/87	Nov 24/99*
MET 7	249281	<u>20</u> /	Nov 24/87	Nov 24/99*
		151 units	<u> </u>	

\*Expiry date when the work applied for, supported by this report, has been approved.

The above data conform with the records in the Princeton and wanted Vancouver recording offices of the British Columbia Ministry of Energy and Mines. All claims are owned by Mr. Charles R. Martin Volume

DM Guchardso

# **HISTORY**

Placer deposits in the Tulameen and Similkameen rivers and their tributaries have been known since the 1860s. However, it was not until 1885 that rich placer deposits of gold and platinum were discovered in Granite Creek near the town of Tulameen (Figure 2). Shortly afterwards, gold and platinum placer deposits were discovered in Whipsaw Creek downstream to the east of the present Whipsaw property. Prospecting for bedrock deposits led to the staking of gold and silver-bearing veins in the central part of the property in 1908.

In 1959, reconnaissance stream sediment sampling by Texas Gulf Sulphur Company discovered major stream sediment Cu-Zn anomalies in 45 and 47 Mile creeks, tributaries entering Whipsaw Creek from the north (Bacon, 1960). Follow-up work outlined soil geochemical, electromagnetic and induced polarization anomalies near the headwaters of 47 Mile Creek (Figures 3 & 4; Bacon, 1960 & 1961; Holyk, 1962). This anomalous area was explored successively by several companies (Seraphim, 1963; Hallof 1963; Mustard, 1969; Macauley and Paulus, 1971). Also during this period, adjacent properties were held by several other companies and individuals. Despite the property boundary constraints to exploration programs, large areas of 0.2-0.3% Cu with accompanying molybdenum were discovered by limited diamond drilling programs while investigating the various geochemical and geophysical anomalies (Heim, 1987).

In 1985, World Wide Minerals Ltd. did soil sampling in the area of the BZ trenches to test for precious as well as base metals (Heim,

1985). It was found that the entire area of the BZ trenches was within a large Cu-Zn soil anomaly accompanied by anomalous Au, Ag and As values. In 1986, the trenches were extended and rock samples were cut which assayed as high as 11.62 g/t Au and 185.1 g/t Ag across 0.61 m in a shear zone (Heim, 1987).

In 1987, World Wide Minerals Ltd. succeeded in consolidating the property, and did a soil sampling program over its central part. A total of 5580 samples were collected and analyzed for Au and, separately, for 31 elements using the inductively coupled plasma (ICP) method. In late 1987 and January 1988, the company diamond drilled 30 holes totalling 3040.1 m (10,000 ft) on part of the BZ zone and on two zones south of Whipsaw Creek (Richardson, 1988b). Also in 1987, World Wide Minerals did an airborne combined magnetometer and very low frequency electromagnetometer (VLF-EM) survey over the southern part of the property (Walker, 1987). Several VLF-EM anomalies have yet to be examined in the field. An intense magnetic anomaly in the SE portion of the property probably indicates the presence of an ultrabasic intrusion.

In 1990, World Wide did a three hole diamond drilling program immediately north of the Whipsaw Porphyry (Richardson, 1990a and 1990b).

In 1991, the northern half of the Whipsaw property was optioned to Phelps Dodge Corporation of Canada, Limited. Their representatives conducted diamond drilling and percussion drilling programs in 1991 and an additional small diamond drilling program in 1992 (Fox, 1992; Fox and Goodall, 1992).

In 1990 and 1992, World Wide began a program of detail geochemical surveying to follow up the anomalous areas south of Whipsaw Creek that were discovered by the extensive 1987 reconnaissance geochemical survey.

In 1995, Martech Industries Inc. drilled seven diamond drill holes to continue testing the copper mineralization around the periphery of the stock, and, in 1997, drilled one additional diamond drill hole near the south boundary of the stock.

# **GEOLOGY**

The Whipsaw property covers 10 km of the regionally mineralized contact zone between the Upper Triassic Nicola Group and the Eagle Granodiorite (Figure 2). In the north-central part of the property, the west-dipping contact zone is intruded by the Whipsaw Porphyry. Dykes of feldspar porphyry extend north and south of the stock near and parallel to the Nicola-Eagle Granodiorite contact. The northwest portion of the Whipsaw Porphyry outcrops and has been mapped (Figure 5; Mustard, 1969). However, the southeast lobe of the porphyry stock occurs in an area of sparse outcrop, and the outline of this part of the stock is based mainly on magnetic and geochemical data.

The Whipsaw Porphyry is the apparent source of a large hydrothermal system with which at least two types of mineral deposits are related. Porphyry copper-molybdenum-gold mineralization occurs disseminated and in veinlets within the perimeter of the Whipsaw Porphyry but mostly in Nicola rocks bordering the porphyry. To the south, the porphyry Cu-Mo-Au mineralization decreases and Au-Ag-Cu-Zn mineralization occurs in pyrite-bearing quartz veins and associated disseminated deposits. An area with skarn zones occurs just north of Whipsaw Creek near the Nicola-Eagle contact (Figure 4). This skarn area coincides with the area of the highest soil gold geochemical anomalies on the property, but has not been examined in detail yet.

An intense magnetic anomaly in the southeast portion of the property is probably caused by a body of ultrabasic rocks, a number

of bodies of which lie south of the Tulameen ultrabasic intrusive which is known to contain platinum group elements (PGE). If so, this postulated body could be the source of the platinum in the placer deposits in Whipsaw Creek east of the Whipsaw property. A second possible source of the PGE-bearing placer deposits in the creek is the mineralization associated with the Whipsaw Porphyry. At nearby Copper Mountain, PGE have been reported to be associated with the copper-gold mineralization along the perimeter of the Copper Mountain Stock. Another possible source of the placer platinum in Whipsaw Creek is the Tertiary sediments in which platinum and gold were probably "parked" during and after the intense Tertiary erosion of the Tulameen ultrabasic rocks (Figure 2).

# The 1998 Diamond Drilling Program

DDH M95-4 had been drilled to test the eastern extension of long sections of 0.25% Cu in Nicola rocks intersected by DDH's W69-2 and W91-1 in an area where an IP anomaly is projected (Figures 4 and 5). DDH M95-4 intersected 0.2-0.3% Cu near its collar, but entered a wide porphyry dyke in which the hole was stopped. porphyry dyke was mineralized, and contained 0.15-0.25% Cu. This was the first time that extensive copper mineralization had been encountered in dykes or apophyses of the Whipsaw Porphyry, and was extremely important because it appeared that there could be Nicola rocks occurring ahead of the hole between the dyke and the main body of the Whipsaw Porphyry which lies further east. The hole was shorter than planned, and the IP target was not reached. target east of the hole remained to be tested. In 1997, DDH M97-8 was drilled to test the above target, but it was too short, and additional drilling was deemed necessary.

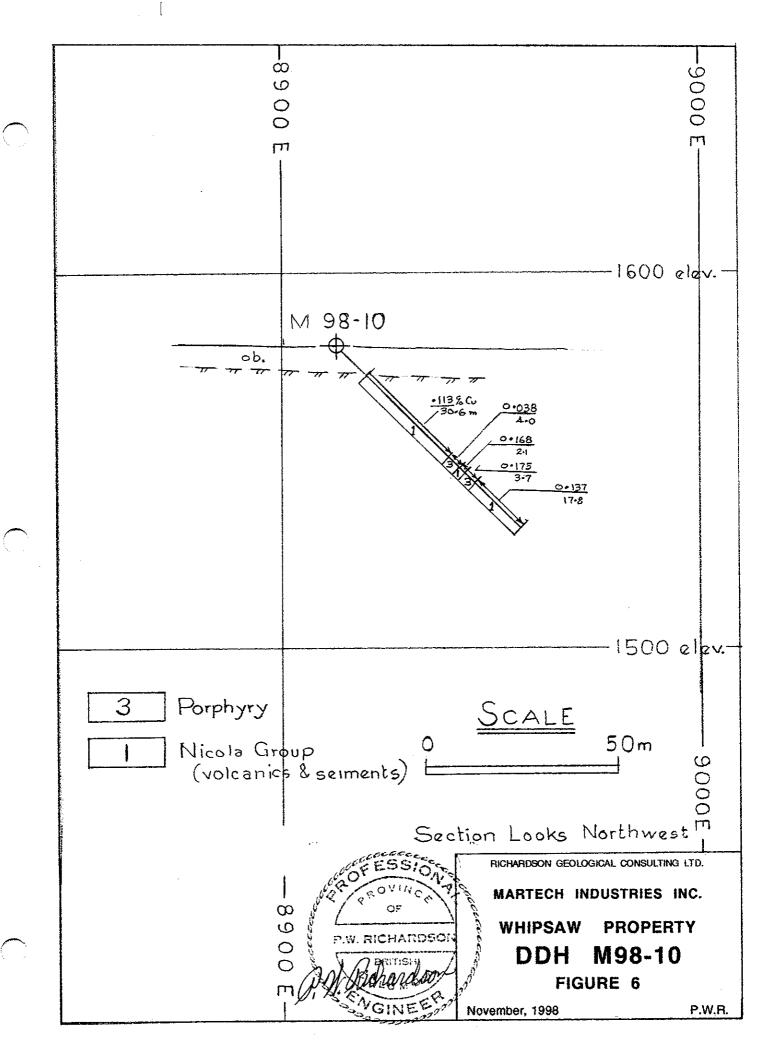
In 1998, two holes were drilled to continue the investigation of the area (Figures 4, 5 and 6).

## 1998 DIAMOND DRILL HOLES

(all data metric)

HOLE#	LATITUDE	DEPART.	AZIMUTH	DIP	LENGTH	ELEV
M 98-9	11,824 N	8,900 E	065°	-45°	70.40	1594
M 98-10	11,680 N	8,912 E	O65°	-45°	68.58	1580

DDH M98-9 tested the volcanics underlying the dyke, but intersected only lowgrade material (Figure 5: Appendix 1). DDH M98-



10 was drilled to test an induced polarization anomaly 130 m SSE of DDH M98-9. It intersected volcanics with abundant pyrite, but again the assays were low (Figure 6; Appendix 1).

The diamond drill core was taken to Vancouver for logging and splitting. When weather conditions permit, it will be taken to the core storage building on the property (Figure 4).

# COSTS OF THE 1998 DIAMOND DRILLING PROGRAM

Diamond Drilling (Adam Diamond Drilling Ltd.)\$14,646.59
Personnel
P.W. Richardson - Consulting, Report Writing
July 0.35 days
September 1.8 "
October 6.6 "
November 5.7 "
14.45 days @ \$500/day7,225
Charles Martin - 2 days.@ \$200/day4007,625.00
Accomodation and Meals194.41
Travel - Mileage, Gasoline and Diesel721.59
Core Splitting at Acme Analytical642.00
Assaying726.10
Map Printing, Xeroxing, Supplies100.44
Telephone
\$24,706.13



# **CONCLUSIONS**

- (1) Geological, geochemical and geophysical surveys, trenching and diamond drilling in the area around the perimeter of the Whipsaw Porphyry have led to the discovery of large areas of mineralization containing 0.2 to 0.3 % copper with some molybdenum and gold within and near the copper areas.
- (2) DDH W95-4 intersected a dyke or apophysis mineralized with copper, which could have indicated an intensely mineralized area.
- (3) DDH W97-8 only just penetrated the eastern (footwall) contact of the mineralized dyke. It was stopped short of the target and did not test it.
- (4) DDH W98-9 tested the Nicola rocks in the footwall of the dyke, but did not intersect high grade material as hoped.
- (5) DDH W98-10 tested an IP anomaly near DDH W98-9. Nothing of economic importance was intersected.
- (6) In 1995, DDH W95-7 intersected only very low grade material while testing a copper-rich spring, and it was concluded that the source of the copper in the spring probably had not been found. It was recommended that additional holes be drilled, but this has still not been done.

### RECOMMENDATIONS

- (1) Make a topography and geology map of the area from DDH M95-7 to the area of springs south of it.
- (2) Map the skarn area near 43 Mile Creek to seek the source of the gold-in-soil anomalies.
- (3) Review the several proposed holes that were not drilled in the 1995 to 1998 programs (Figure 4).

(4) Based on the results of the mapping and the review, propose a second of holes to be drilled in the fall of 1999.

P.W. RICHARDSON

VGINEE

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# STATEMENT OF QUALIFICATIONS

The writer is a graduate of the University of British Columbia with B.A.Sc.(1949) and M.A.Sc.(1950) degrees in Geological Engineering and a Ph.D.(1955) degree from the Massachusetts Institute of Technology in Economic Geology and Geochemistry.

The writer has done fieldwork in mines and on exploration programs, except in periods at university, since 1945, and has participated in numerous exploration programs which included geochemistry since 1953. He has a working knowledge of the major types of geophysics based on fieldwork in the Maritimes, Northern Ontario and Quebec and British Columbia. He has carried out or supervised many diamond drilling programs since 1950.

The writer has been a Member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia since returning in 1966 to live in British Columbia.

The writer has worked on the Whipsaw property for several years. Elsewhere in the Quesnel Trough, the writer has worked on other properties associated with alkalic porphyry systems, particularly at Copper Mountain, at the Lorraine Property and at the QR gold deposit during the early stages of exploration.

APPENDIX 1 - Diamond Drill Logs

# MARTECH INDUSTRIES INC.

CATION:	11,824	N, 8,900 E	DRILL REC	HOLE NO 198-9										
	065°	DIAMONU	DRILL NE	PROPERTY: WHIPSAW										
ZIMUTH: P: -4		LENGTH: 70.40 m	LENGTH: 70-40 m ELEVATION: 1594 m CLAIM NO: ME											
		7 1998 CORE SIZE: BQ Wireline	DATE LO	GGED: Oct	21-22/9	98	SECTION:							
TARTED:		er 12, 1998 CORE SIZE: BQ Wireline					LOGGED E	Y: P.W	.Richa	rdson				
URPOSE		30 m ahead of M97-8 to test volcanics seen in toe o	fM97-8											
METI from 1	RES	DESCRIPTION	SAMPLE No.	from	RES to	LENGTH METRES	Cu ppm	Au ppb:	Ag ppm	Zn ppm	Ni ppm	Fe %		
trom	10													
0 3-96	73.96 27.20	CASING PORPHYRY - Aphanitic with (2013-402)	200551	3.00	6.00	3.00	2108	3	0.7	33 36	8	1.49		
J- 76	21-20	- 151 f t 1	52		9.00	3.00	3044 915	12	2.6	55	5	1.60		
			· 53 54	9.00	15.00	3.00	879	22	3.1	51	9	1.47		
			55		18.00	3.00	1580	17	3.3	136	20	2.50		
		melachile on stockwork of	56	18.00	21.00	3-00	4939	25	7.6	305	88	4.62		
		closely spaced fracture	57	21.00	24-00	3.00	<sup>1</sup> 1737	19	4.5	89	10	1.51		
			58	24.00	27.20	3.20	1418	17	3.0	73	9	1.66		
07.00	46.00	VOLCANICS - Schist, fine-grained	59	27.20	30-20	3.00	2194	14_	2.3	558	87.	5.56 4.05		
27-20	46.00	1	, 60		33-20	3.00	1.834	13	2.0	371	59	4.58		
		to 34.0. Then somewhat chlorite 02000	N 61	33.20	36.20	3.00	1758	15	1.7	325 431	128	6.01		
	·	with fine grained pyrite on 18.8	62.	36.20	39.20	3-00	1892	<u>16</u> 15	2.2	637	122	5.88		
	1	schutgeit, (+60°) and fractures.		39.20	42.20	3.00	- <u>2424</u> 2283	23	3.1	652	84	5.43		
		Very rage chalcopyrite.	64	42.26	46.00	3-80	2283	43	3:1	1-0-2	<del> </del>			
				<del>                                     </del>	1000	3.00	284	9	0.5	43	8	1.86		
46.00	72.23	PORPHYRY. Aphanitic ground -	45	46.00	49.00 52.00		1099	16	1.3	63	21	2.43		
		mass, 15% 2-3 mm feldspar plieno-	66	49.00 52.00	55.00		1990	22	2.5	77	32	3-11		
		crysts, lightgray. Shearing w. miner	. 67	55.00	56.70		682	7	8.0	73	43	2.33		
	<u> </u>	Chalcopyrite 56.70-57-80 & 60-10	N 69	56.70	57.80		- 4465	37	4.4	108	33	4.66		
		, ZON	70	57.80	60.80		1892	36	2.6	58	18_	3.16		
	<del> </del>	End of Hole at 70-40 m	71	60.50	63.80		1970	25	2.1	44	7	2.34		
	-		72	63.80	66-80		1125	25	1.6	40_	15	2-51		
	<del> </del>	Casing left in hole.	13		69.90		1909	34	3.0	69	36	4-03		
	<b></b>	<u></u>	74		70.40	0.60	508	6	0.8	34	1_11_	1 6		

MARTECH INDUSTRIES INC.

PROPERTY: WHIPSAW   PROP													
CASING	PROPERTY: WHIPSAW												
CLAIM No.   MET 7													
Care   14, 1998   Core size: BQ Wiveline   Date Logged: October 22/23, 98 section:													
Description													
Description													
Dip Tests   Dip	hardson	<u> </u>											
Netres   Description   Sample   No.   Netres   Length   Cu   Description   Descripti													
NETRES   DESCRIPTION   SAMPLE   NO.   ITEMES   LENGTH   Cu   ppm   ppb   ppm													
No.	<del></del>	I NE LE											
Trom   to   DESCRIPTION   No.   160m   10   20	ppm.	Ni Fe											
O CASING  II-DO OVERBURDEN (no cesing)  Boulders in clay including  I-oom powhery houlder 060  major clay includer  Molecular of the careined  II-oo 41:60 VOLCANICS - (inc. greined)  Scoler bening at 80°-90°  Scoler bening at 80°-90°  TA 10:00 20:00 3:00 129 8 2:7  Scoler bening at 80°-90°  TA 20:00 23:00 3:00 1575 9 1:4  80°-90°  TA 20:00 23:00 3:00 1449 8 1:2  80°-90°  TA 20:00 3:00 1449 8 1:2  80°-90°  TA 20:00 3:00 1449 8 1:2  TA 20:0	+												
11-00 OVERBURDEN (no cessing)   Boulders in clay including   1-00 m postularly boulder. O-60   11-00 m postularly boulder. O-60   11-00 m cored clay including   1-00 m cored clay included   1-00 m cored clay inclu													
1.00   1.00		<u> </u>											
Marcone   Marc		<del> </del>											
11.00 41.60 VOLCANICS—Circ-gerined 2005 13 1.00 17.00 3.00 405 6 1.3 1.3 1.00 1.30 1.30 1.30 1.30 1.30 1		30 2.8											
high argenish argy, Schidosis,   77   17.00   20.00   3.00   11.29   8   2.7		30 2.8											
Secolar barring at 80°-90°   17   1700   23.00   3.00   1575   9   1.4	42 96	112 5.9											
5 % py in reducible free tures   18   20:00   20:00   3:00   1449   8   1:2	153	151 6.8											
80 26.00 29.06 3.00 1452 8 1.3  81 29.06 32.00 3.00 1547 10 1.3  81 29.06 32.00 3.00 1547 10 1.3  82 32.00 35.00 3.00 1084 5 .8  83 35.00 38.00 3.00 1084 5 .9  84 38.00 41.60 3.60 1084 6 .9  84 38.00 41.60 3.60 1084 6 .9  85 41.60 43.60 2.00 329 6 .5  86 43.60 45.60 2.00 425 4 .4  87 45.60 47.70 2.10 1625 13 1.0  47.70 51.40 PORPHYRY-25 45.60 with 18 98 47.70 49.50 1.80 2253 10 1.9	131	132 6.2											
85 26-00 37.00 3.00 1547 10 1-3  81 29.00 37.00 3.00 1547 10 1-3  82 37.00 35.00 3.00 10.84 5 .8  83 35.00 38.00 3.00 10.84 5 .8  84 38.00 41.60 3.60 10.84 6 .9  85 41.60 43.60 2.00 329 6 .5  41.60 45.60 PORPHYRY-Aphenitic w 20% 38.00 41.60 43.60 2.00 329 6 .5  41.60 45.60 PORPHYRY-Aphenitic w 20% 38.00 45.60 45.60 2.00 425 4 .4  41.60 45.60 PORPHYRY-Aphenitic w 20% 38.00 45.60 47.70 2.10 1625 13 1.0  45.60 47.70 VOLCANICS - 25 to 41.60 .165. X 98 47.70 49.50 1.80 2253 10 1.9	169	126 5.9											
81 29:00 35:00 3:00 14:29 14 1:4  82 32:00 35:00 3:00 10:84 5 :8  83 35:00 39:00 3:00 10:84 6 :9  84 38:00 41:60 3:60 10:84 6 :9  85 41:60 43:60 2:00 329 6 :5  86 43:60 45:60 2:00 425 4 :4  87 45:60 47:70 70:10 1625 13 1:0  88 47:70 51:40 PORPHYRY-25:045:60 with 18:00 1:00 12:46 10 1:00	117	83 5.8											
83 35.00 38.00 3.00 10.84 5 .8  83 35.00 38.00 3.00 10.84 5 .8  84 38.00 41.60 3.60 10.84 6 .9  84 38.00 41.60 43.60 2.00 329 6 .5  85 41.60 43.60 45.60 2.00 425 4 .4  86 43.60 45.60 47.70 2.10 1625 13 1.0  87 45.60 47.70 VOLCANICS - 25 to 41.60 .167. X 87 45.60 47.70 2.10 1625 13 1.0  88 47.70 51.40 PORPHYRY-25 to 45.60 with .18 88 47.70 49.50 1.80 2253 10 1.9	152	114 6.9											
Y 84 38.00 41.60 3.60 1084 6 .9  41.60 45.60 PORPHYRY-Aphenitic w 20% 95 41.60 43.60 2.00 329 6 .5  white 2-3 mm feldspar crystels 1 .60	98	91 6.											
45.60 47.70 VOLCANICS - 25 to 41.60 .162. X 87 45.60 47.70 2.10 1625 13 10 1.90 47.70 51.40 PORPHYRY- 25 to 45.60 with .15 20 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1	127	77 6.											
45.60 47.70 VOLCANICS - 25 to 41.60 47.70 49.50 1.80 2253 10 1.90	96_	23 3.											
45.60 47.70 VOLCANICS - 25 to 41.60 47.70 49.50 1.80 2253 10 1.90	116	79 . 6"											
4770 51.40 PORPHYRY- 25 to 45:60 with 150 150 150 150 150 150 150 150 150 150		31 4.											
47/0 1 3/1-0 1 3/1 11 12 12 12 12 12 12 12 12 12 12 12 12		28 4.											
Short sections of volcanics 99 49:50 51:40 3:00 1440 8 1.5		49 5.1											
51.40 68.58 VOLCANICS - As to 41.60 90 51.40 34.40 3.00 1784 20 1.9		40 5.											
92 57.40 60.40 3.00 1118 6 .9													
93 60:40 63:40 3:00 1674 6 1:0	98												
94 63.40 66.40 3.00 1286 6 1.2	123												
End of Hole at 68-58 m. Casing left in hole \$ 95 66.40 68.58 2.18 1157 6 .9	15	1 30 1 3											

APPENDIX 2 - Assay Certificates

ACME ANALYTICAL LABORATORIES LTD. (ISO 9002 Accredited Co.)

852 E. HASTINGS ST. VANCOUVER BC V6A 1R6

PHONE (604) 253-3158 FAX (604) 253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Martech Industries Inc. PROJECT DDH M1-98-9 File # 9804796 4569 W. 13th Ave, Vancouver BC V6R 2V5 Submitted by: Paul Richardson

	N- 0.4	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Вi	٧	Ca	P	La	Cr	Mg	Ba	Τi	В	Αl	Na	K	W	Au*
SAMPLE#	Mo Cu ppm ppm		ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ррт	%	%	ppm	ppm	%	ррп	%	ppm	<u>%</u>	%	<u> %</u>	ppm	ppb
B 200551 B 200552 B 200553 B 200554 B 200555	4 2108 8 3844 11 915 9 879 24 1580	6 8 6 4 4	33 36 55 51	.7 1.1 2.6 3.1 3.3	8 6 5 9		198 107 131 117 232	1.37 1.60 1.47	2 4 4 4 6	<8 <8 <8 <8	<2 <2 <2 <2 <2	<2 <2 <2 2 <2	42 23 30 28 26	<.2 .3 <.2 <.2	ও ও ও ও	<3 <3 <3 <3 <3	30 18 49 48 106	.26 .28 .25	.098 .097 .115 .105	10 18 12 12 6	15 6 21 14 46	.37 .14 .76 .81 1.48	736 545 94 78 102	.01 <.01 .01 .02	4	.69 .49 1.04 1.00 1.71	.06 .04 .08 .08	.18 .21 .27 .28 .72	<2 <2 <2 <2 <2	3 12 19 22 17
B 200556 B 200557 B 200558 B 200559 B 200560	181 4939 79 1737 83 1418 84 2194 70 1793	11 11 11	305 89 73 558	7.6 4.5 3.0 2.3 2.0	88 10 9 87 58	40 8	416 371 142 511 398	1.51 1.66 5.56	15 7 5 10 7	<8 <8 <8 <8	<2 <2 <2 <2 <2	<2 <2 <2 <2 <2	19 27 31 32 31	.4 <.2 <.2 2.6 1.6	ব ব ব ব ব	ও ও ও ও	224 47 57 237 179	.25 .26 .43		5 7 5 3 5	17 16 227	3.44 .73 .77 3.99 2.77	147 66 83 145 134	.26 .06 .08 .37	<3 3 <3	3.31 1.08 .96 3.73 2.57	.09 .08 .09	1.88 .19 .30 1.80 1.55	<2 <2 <2 <2	25 19 17 14 12
RE B 200560 RRE B 200560 B 200561 B 200562 B 200563	58 1822 78 1888 105 1758 88 1892 103 2424	10 64 11	325 431			46	405 408 439 468 438	4.16 4.58 6.01	6 8 9 12 13	<8 <8 <8 <8	<2 <2 <2 <2 <2	<2 <2 <2 <2 <2	32 33 44 28 34	1.7 1.6 .9 1.3 2.6	उ उ उ उ	<3 <3 <3 <3	186 182 240	.50 .89 .67	.102 .103 .087 .070 .054	6 4 4	136 259 339	2.83 2.85 3.61 4.37 4.08		.32 .26 .36	<3 <3 <3	2.62 2.66 3.23 3.64 3.66	.09 .11 .08	1.58 1.63 1.57 1.94 2.01	<2 <2 <2 <2 <2	13 14 15 16 15
B 200564 B 200565 B 200566 B 200567 B 200568	108 2283 8 284 60 1099 355 1990 53 682	10	43 63 77	3.1 .5 1.3 2.5		41 9 16 19 14	131 184 236	1.86 2.43 3.11	18 4 2 4 3	<8 <8 <8 <8	<2 <2 <2 <2 <2	<2 <2 <2 <2 <2	41 52 50 61 71	2.9 .2 .2 <.2 <.2	<3	<3 <3 <3 <3	30 59 80	1.09 1.44 2.03	.075 .105 .096 .097	7 9 8	16 48 84	3.37 .70 1.19 1.61 1.66	141 25 26 32 27	.02 .02 .04	<3 3 <3	3.12 .85 1.23 1.55 1.59	.11 .06 .05 .06	1.65 .17 .30 .51	<2 <2 <2 <2 <2	9 16 22
B 200569 B 200570 RE B 200570 RRE B 200570 B 200571	245 4465 143 1892 151 1986 121 2033 111 1518	: 6 5 8 6 10	55 59 59	2.7 2.5 2.6		31 29 31 31 20	155 165 162	3.02 3.21	4 6	<8 <8 <8 <8	<2 <2 <2 <2 <2	<2 <2 <2	29 26 27 27 49	.2 .2	<3 <3 <3	<3 <3 <3 <3	61 65 66	.80 .84		4	14 15 15	1.99 1.03 1.08 1.10 .87	23 24	.06 .06 .07	<3 <3 ' <3	2.16 1.15 1.20 1.20 1.08	.09 .08 .08 .07	.25	2 <2 <2 <2 2	38 33 38
B 200572 B 200573 B 200574 STANDARD C3/AU-R STANDARD G-2	68 1125 162 1909 6 508 26 66	) 17 3 3 5 3!	7 69 3 34	3.0 .8 5.2	36 11 35	27 9	161 751	4.03 1.79 3.30	<2 55	<8 <8 24	<2 <2 3	<2 <2 21	55 86 30	.3	<3 <3 17	<3 3 16	86 30 79	1.94 1.52	7 .096 .048 2 .111 3 .085 3 .088	5 7 18	113 12	1.60 .73 .58	26 20 1 <b>3</b> 9	.01	<3 3 19	1.86		.40 .14 .17	<2 2 <2 14 2	34 6 494

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 HCL-HN03-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND MASSIVE SULFIDE AND LIMITED FOR NA K AND AL. ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB AU\* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.(10 GM) - SAMPLE TYPE: CORE

Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

NOV 5/98 SIGNED BY....

.D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

ACME ANALYTICAL LABORATORIES LTD. (ISO 9002 Accredited Co.)

852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE (604) 253-3158 FAX (604) 253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Martech Industries Inc. PROJECT DDH M-98-10-95 File # Submitted by: Paul Richardson

4569 W. 13th Ave, Vancouver BC V6R 2V5 W Au\* Τi В Αl Cr Mg Ва Sb Вi Ca La Sr Cd Th Au Co Mn Fe Νi ppb Pb Zn Ag % % % % mag Cu ppm SAMPLE# ppm maa % ppm % ppm ppm ppm ppm mag ppm ppm % ppm ppm ppm mag mag ppm mag mag mag ppm 2 .36 6 <3 1.44 67 1.30 273 .05 54 2.44 .080 <3 96 <.2 <3 <2 436 2.83 3 <8 <2 19 30 <2 42 .6 73 <3 1.53 .08 B 200575 7 126 26 1.17 .07 <3 73 .30 .105 6 <3 <2 <2 40 <.2 2 <8 115 2.14 5 31 405 5 42 1.3 19 2 8 89 .12 <3 3.31 .05 .61 B 200576 764 3.26 <3 <3 165 .51 .076 6 50 <.2 <2 2 <2 <8 245 5.90 2.7 112 14 2 9 96 .15 2.06 108 1129 6 <3 4.62 B 200577 396 5.15 92 . 25 .62 .051 3 <3 <3 248 52 .3 <2 <8 <2 <2 44 364 6.81 153 1.4 151 4 Я 57 1575 <3 4.06 .19 2.02 383 4.47 101 .26 в 200578 <3 234 .79 .063 2 48 <.2 <3 <2 8 325 6.22 1.2 132 43 131 91 1449 B 200579 <2 8 .24 < 3 3 85 .21 1.89 105 338 3.86 207 .92 .062 <.2 <3 <3 <2 <2 55 300 5.98 <8 <2 7 169 1.3 126 41 3 10 62 1452 <3 3.46 .21 1.60 .21 193 3.11 86 B 200580 <3 190 .80 .062 3 <2 54 .2 <3 2 <8 <2 39 266 5.88 83 2 14 7 117 1.3 <3 4 14 .26 1.66 103 1547 287 3.81 86 .23 B 200581 <3 232 1.05 .065 <3 <8 <2 <2 60 <.2 <2 37 330 6.91 3 5 32 1429 14 152 1.4 114 6 4.02 .25 1.48 .21 B 200582 251 3.51 88 224 1.06 .065 <3 <3 2 79 .2 <2 <2 <8 33 281 6.20 98 .8 91 .25 1.66 <3 <3 3.99 71 1084 .20 B 200583 3 197 3.50 90 236 .96 .059 <3 <3 62 <.2 <2 <8 <2 <2 37 285 6.54 .9 77 127 108 1084 B 200584 6 .08 .51 67 <3 1.47 .08 .44 .095 62 1.46 <3 82 30 <.2 <3 2 5 <8 <2 186 3.40 .5 23 14 .07 .51 <2 96 40 329 18 17 1.02 94 .09 <3 1.15 R 200585 8 71 .37 .111 <.2 <3 <3 3 <2 <2 29 <8 9 140 2.43 13 30 61 .4 11 <3 4.19 .28 1.68 3 13 425 .23 190 3.37 94 B 200586 3 <3 <3 230 1.12 .061 <2 75 <.2 <2 <2 <8 38 253 6.69 79 .11 .68 <2 11 1.0 69 1625 15 116 <3 1.61 B 200587 5 55 1.30 61 .07 93 .38 .042 .2 <3 <3 2 34 <2 <8 <2 166 4.21 25 31 <2 10 104 2258 13 121 1.8 .08 <3 1.65 .12 .70 62 в 200588 .39 .044 5 56 1.33 95 2 35 .2 <3 <3 <2 <2 <8 171 4.27 15 125 1.9 32 25 102 2312 RE B 200588 9 <2 .11 .66 61 .07 <3 1.55 5 53 1.24 90 .37 .041 2 33 .3 <3 <3 3 <8 <2 23 163 3.82 3 10 115 1.9 30 5 1.76 .12 .67 10 96 2190 54 1.23 77 .06 RRE B 200588) 6 <3 <3 102 .46 .065 2 34 .3 <2 3 <8 25 193 4.03 112 1.0 28 <2 8 5 .19 1.60 33 1246 95 .14 <3 3.29 B 200589 91 2.46 .73 .056 3 <3 194 49 .2 <2 <8 <2 <2 34 270 5.53 20 49 <2 180 1440 7 148 1.5 4 2.89 .16 1.41 103 2.35 89 .12 B 200590 158 .58 .057 3 2 41 9.3 <3 <3 <2 <2 <8 249 5.24 40 31 <2 6 31 1871 1.9 <3 2.21 .11 1.23 124 1784 75 85 1.95 .10 B 200591 .36 .048 27 <3 <3 146 <.2 <2 <2 156 5 37 <2 <8 33 .9 42 92 119 1118 B 200592 .18 1.56 2 6 <3 3.17 72 .13 146 2.68 179 .68 .053 <3 <3 <2 46 <.2 <8 <2 43 192 7.25 <2 62 <2 98 1.0 < 3 3.89 .32 1.34 6 225 1674 90 .13 B 200593 201 2.95 180 1.26 .056 <3 <2 <2 121 .2 <3 <8 267 5.59 <2 35 123 1.2 79 3 6 78 1286 29 .22 <3 3.55 .23 1.75 100 в 200594 140 3.06 <3 <3 207 .88 .058 <2 <2 63 <.2 <2 <8 183 5.44 75 .9 50 28 14 495 .04 .17 76 1157 7 .07 16 1.95 138 в 200595 .61 .086 19 176 .59 83 32 23.2 16 18 22 53 19 3 13 765 3.34 2 168 5.6 36 1 35 <3 .94 .08 .45 STANDARD C3/AU-R 27 65 77 .54 245 .10 .64 .086 8 38 74 <.2 <3 <3 <2 <8 <2 5 5 517 1.86 39

> ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 2-2-2 HCL-HN03-H20 AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND MASSIVE SULFIDE AND LIMITED FOR NA K AND AL. ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB AU\* - IGNITED, AQUA-REGIA/MIBK EXTRACT, GF/AA FINISHED.(10 GM)

- SAMPLE TYPE: CORE DATE REPORT MAILED: SIGNED BY SIGNED BY LOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

OCT 23 1998

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STANDARD G-2

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