LOG NO: 0719	RD.
ACTION:	
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GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL & TRENCHING

REPORT ON THE FIDELITY PROSPECT

ATLIN MINING DIVISION,
SWIFT LAKE AREA, BRITISH COLUMBIA

LOCATION:

N.T.S.: 1040/13
LATITUDE: 59° 48'N.
LONGITUDE: 131° 45'W.
B.C. GOVERNMENT MINERAL INVENTORY 1040 - 11 & 24

CLAIMS:

SAM (2955), RAM (2956), AZTEC (2981), MIKE (2982)

OPERATOR

ARNICA RESOURCES LTD.
320-1333 JOHNSTON STREET
VANCOUVER, B.C. V6H 3R9

PREPARED BY:

Peter A. Christopher Ph.D., P.Eng.
PETER CHRISTOPHER AND ASSOCIATES INC.
3707 WEST 34TH AVENUE,
VANCOUVER, B.C. V6N 2K9

PROFESSIONAL ENGINEER, PROVINCE OF BRITISH COLUMBIA, P. A. Christopher

JULY 6, 1990

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INTRODUCTION

Arnica Resources Ltd. presently holds Ram Property situated in the Atlin Mining Division, northwestern British Columbia. The property consists of four metric mineral claims which cover approximately 20^2 kilometers. Peter Christopher & Associates Inc. was retained by the management of Arnica Resources Ltd. to carry out the geological, geochemical and geophysical part of the Stage 1 program recommended by DiSpirito et al. (1988).

The field program on the Ram Property was conducted by the writer, geophysical operator Gerry Hayne B.Sc., and two prospectors between June 5th and June 12th, 1990. The program consisted of geological mapping, rock and soil sampling, VLF-EM and magnetic surveys and hand trenching with about 15.4 line kilometers surveyed and 260 geochemical samples taken.

This report summarizes the results of the Stage 1 program, but the results of this and the previous surveys for Arnica Resources do not justify continuing with the Stage 1 drilling program recommended by DiSpirito et al. (1988). No further work is recommend for the Ram Project by Arnica Resources Ltd.

LOCATION AND ACCESS (Figures 1 & 2)

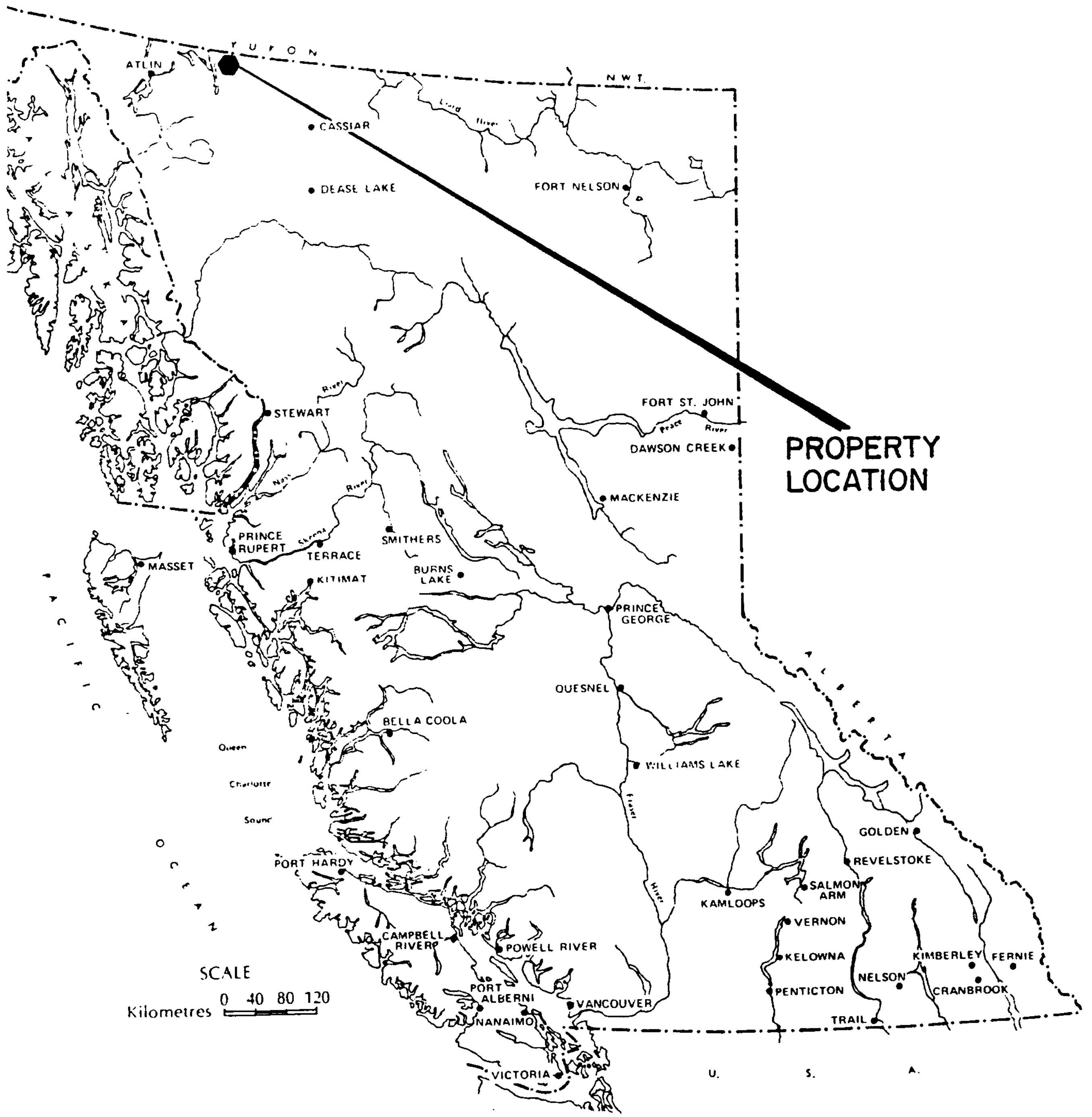
The property is located about 2.5 miles (4 km.) east of Swift Lake in the Mountains about 10.5 km. south of kilometer 1220 on the Alaska Highway. The claims are centered at about geographic coordinates 59° 48'N latitude and 131° 45'W longitude in N.T.S. map sheet 104-0-13.

Access to the Swift Lake area is via Helicopter from Atlin, B.C. and Whitehorse or Watson Lake, Yukon with distances ranging from 110 (Atlin) to 190 (Whitehorse) kilometers. Supplies were ferried by helicopter from a fishing camp at the west end of Smart Lake but heavy equipment could be moved by float plane to Swift Lake.

Local access is via an all terrane vehicle track which extends southerly from mile post 753 on the Alaska Highway. An old drill camp at about 4300 feet was used for the 1990 work program. The camp is near tree line and the common legal corner post for the Mike and Aztec claims with mainly alpine meadows above about 4500 feet.

Property elevations range from 3200 feet (975 meters) in creeks draining into Swift Lake to 5895 feet (1797 meters) at a peak near the eastern claim boundary. Lower slopes contain forests of cedar, fir, pine and spruce. Caribou, porcupine, bear and dear are commonly seen on the property.

An old drill camp at about 4300 feet was near tree line and the common legal corner post for the Mike and Aztec claims with mainly alpine meadows above about 4500 feet. Lower slopes contain forests of cedar, fir, pine and spruce. Caribou, porcupine, bear and dear are commonly seen on the property.



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P. A. Christopher

N

ARNICA RESOURCES LTD.

RAM PROJECT

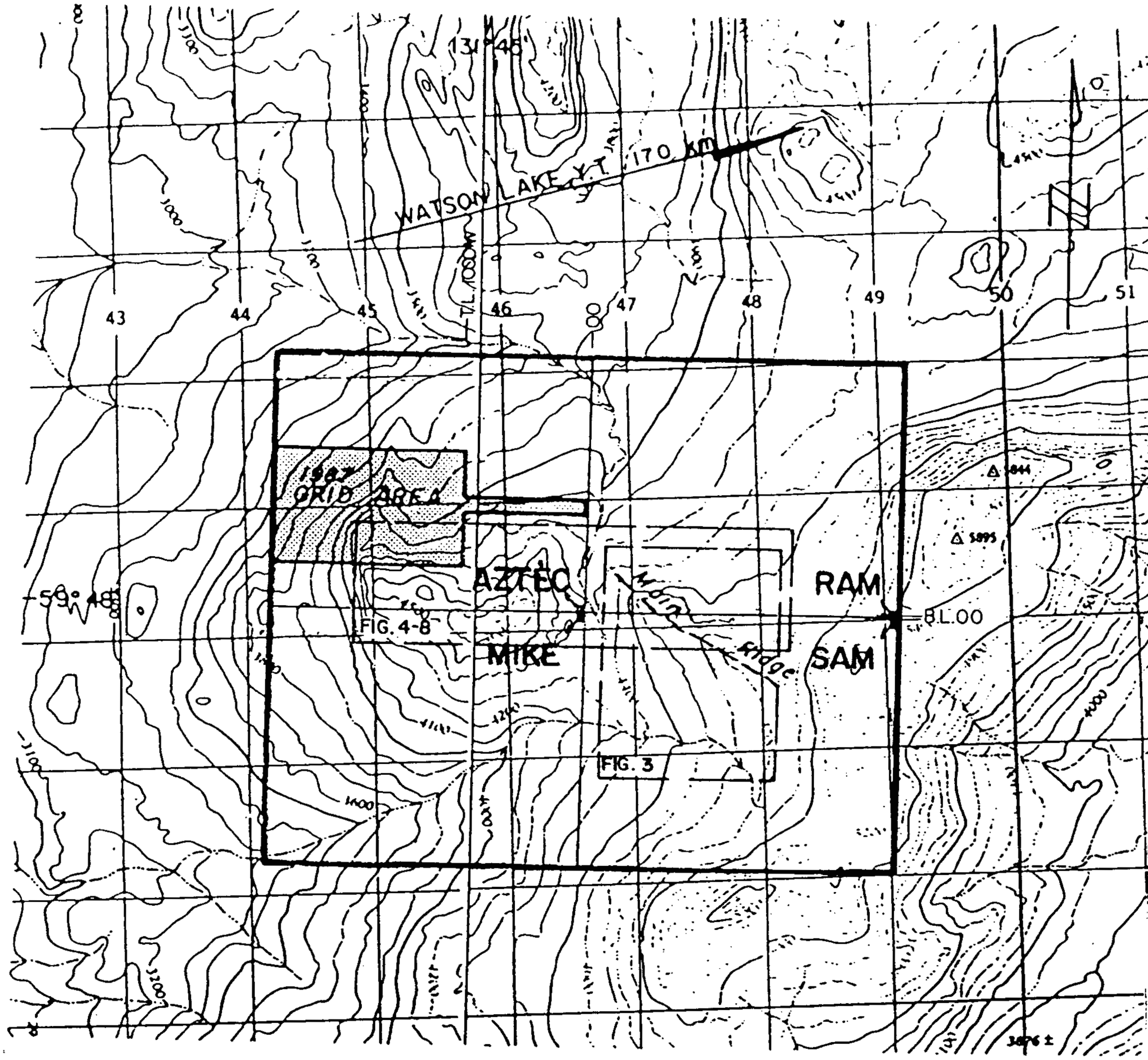
LOCATION MAP

N.T.S. 104 O-13 LIARD M.D., B.C.

P.A. CHRISTOPHER & ASSOCIATES INC.

SCALE	JUNE 1990	FIGURE 1

CHONG



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P. A. Christopher

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ARNICA RESOURCES LTD.

RAM PROJECT

CLAIM MAP

N.T.S. 104 O-13 | LIARD M.D., B.C.

0 1 2 3 KM.

P.A. CHRISTOPHER & ASSOCIATES INC.

SCALE 1:50,000	JUNE 1990	FIGURE 2

CHONG

PROPERTY DEFINITION

The Ram Property, consisting of Ram, Sam, Aztec and Mike modified grid claims totalling 80 metric units, covers about 2,000 ha. (4,942 acres) in the Atlin Mining Division and Swift Lake area of northwestern British Columbia. The Ram and Sam claims were staked by Michael Renning of Coquitlam, B.C. on June 11, 1987 and the Aztec and Mike claims were staked by Gordon Heynen of Atlin, B.C. on June 29, 1987. The claims were sold to Amber Minerals Limited by bill of sale recorded August 31, 1987 and then optioned to Louis Mikulic, the present recorded owner, by agreement dated September 15, 1987. Arnica Resources Ltd. holds an option to acquire 100% interest in the claims from Mikulic pursuant to an assignment of the Amber Minerals Ltd. agreement.

Pertinent claim data for the Ram Property is summarized in Table 1 with claim locations shown on Figures 1 and 2.

TABLE 1. PERTINENT CLAIM DATA FOR THE RAM PROPERTY.

NAMES	RECORD #	UNITS/SHAPE	REC. DATE	EXPIRY*	RECORDED OWNER
Sam	2955	20/5Ex4S	June 12/87	1990	Louis Mikulic
Ram	2956	20/5Ex4N	June 12/87	1990	Louis Mikulic
Aztec	2981	20/5Wx4N	June 29/87	1990	Louis Mikulic
Mike	2982	20/5Wx4S	June 29/87	1990	Louis Mikulic

* Before recording 1990 work program.

HISTORY

The Ram Property covers the Ram and Top occurrences which have B.C. Government Mineral Inventory #'s 104-O-24 and 11, respectively. Copper mineralization was discovered on the property in the early 1940's by Hudson Bay Mining and Smelting Ltd. The area was staked as the Top claims for K. J. Springer with geological, geochemical and geophysical programs conducted in 1967 (Sawyer, 1967). A report of 0.10 oz Au/t over 3m was made, but has never been corroborated.

Early in 1970, the Ram Group was acquired by Bolivar Mining Corporation, a subsidiary of Cyprus Mines Corporation Ltd., which carried out a program of airborne EM, magnetometer, geochemical, induced polarization and geological surveys. A 16 kilometer tote road and 2 small bridges were constructed to provide access from the Alaska Highway for drilling. The best anomalies were tested with four holes totalling 1,080 meters in 1971.

In 1972, J.J.A. Altenburg was reported to be the owner with Nizi Zinc & Metal Mining Limited (GEM 1972 p.559) reported to be the operator of the Ram 1 to 20 claims. A work program consisting of 800 soil and silt samples and 60 feet of trenching was completed.

No further work was reported till 1979 when drill hole 1979-1 was completed to a depth of 442 meters by Rebel Developments Ltd. with two copper intersections below 300m averaging 0.49% over 3.0m (Sawyer, 1979) and 0.22% voer 6.7m (Phendler, 1981). In 1981, Rebel Developments drilled hole 1981-1 to a depth of 457 meters (1500 feet).

DDH 81-1 was drilled at the northwest end of an IP anomaly and encountered 27.6m (106.6 - 134.2m) of moderate to heavy sulphides with 0.20% copper over the first 15.15m and 0.05% copper over the final 12.45m of the sulphide rich interval (Phendler, 1981).

The Ram Property was staked for Amber Minerals Ltd. in 1987 and acquired by Arnica Resources Ltd. from Louis Mikulic by agreement dated December 31, 1987. In 1988, Shangri-La Minerals Limited completed a geological, geophysical and geochemical exploration program on the property (DiSpirito et al., 1988) and in 1989, Amber Minerals Ltd. completed a prospecting program on the property (Ross, 1989). Recommendations were for ground access construction, grid extensions, further prospecting trenching and drilling.

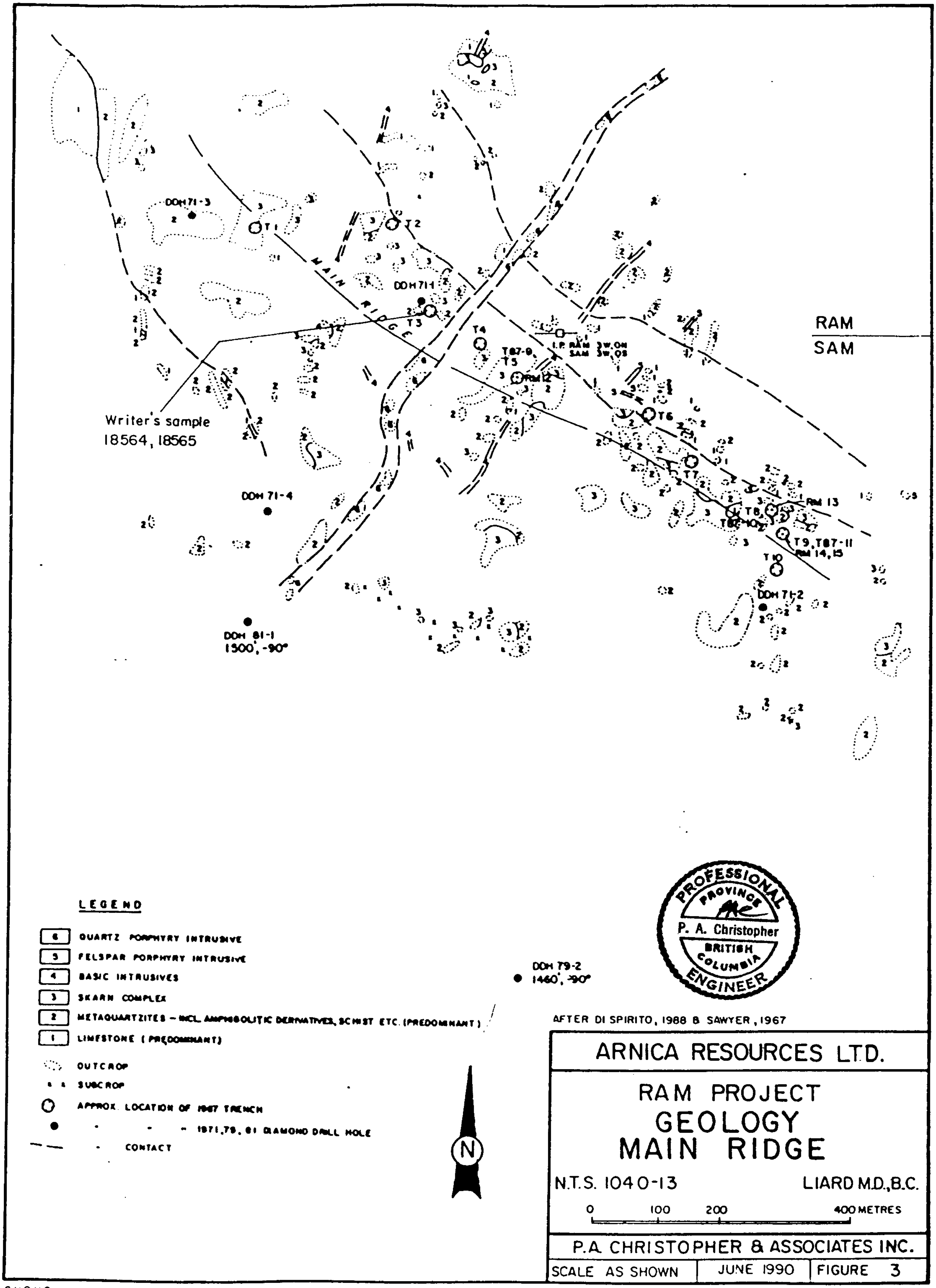
In 1990, Arnica Resources Ltd. retained Peter Christopher & Associates Inc. to conduct expanded grid coverage as recommended by DiSpirito et al. (1988) and prospecting as recommended by Ross (1989).

1990 WORK PROGRAM

The 1990 exploration program was conducted during the period June 5 to July 12, 1990 with Peter A. Christopher P.Eng., PhD. of Peter Christopher & Associates Inc. retained to supervise the field program and prepare a report on the property. Mr. Gerry Hayne B.Sc. collected data for the magnetic and VLF-EM surveys and prospectors Donald Williams and Kirk McKibbon constructed grid, cleared old trenches, prospected and collected soil samples. Geological mapping and rock sampling was conducted by the writer. F.Y. Chong of Chong Drafting was retained to plot magnetic data and calculate, plot, and contour Fraser Filter values for the VLF-EM surveys. Geochemical values were plotted and contoured by Chong Drafting.

The 1990 work program consisting of geological mapping, geochemical sampling, VLF-EM and magnetic surveys and limited hand trenching in old trenches. Geochemical and geophysical surveys were conducted over extensions of the 1988 grid area and along 1.6 kilometers of line 0+00 east.

A total of about 15.4 line kilometers of grid was chained and flagged at 20 meter intervals and pickets placed at 200m intervals along line 0+00. A soil and rock geochemical program was conducted over the grid area with a total of 18 rock samples and 242 soil samples. Soils were collected at 40 meter intervals with the B horizon sampled at a depth of about 25 centimeters, placed in kraft soil bags and shipped to Acme Analytical Laboratories Ltd. in Vancouver for 30 element ICP and selective gold geochemical analyses. Contoured geochemical maps for arsenic/silver, and copper/zirc are presented as Figures 5 and 6 with gold values plotted on Figure 6. Rock samples were collected mainly from Trench 3, old diamond drill holes, and prospect sites with sample locations shown on Figures 3 and 4, and sample description presented in Appendix A. Analytical values are presented in Appendix B along with statistical treatment of soil geochemical data.


RAM
SAM
Writer's sample
18564, 18565
DDH 71-3
DDH 71-1
DDH 71-4
DDH 71-2
DDH 81-1
1500', -90°
DDH 79-2
1460', -90°
MAIN RIDGE
T1
T2
T3
T4
T5
T6
T7
T8
T9, T87-11
RM 14, 15
T10
T87-9
RM 12
RM 13
T87-10
I.P. RAM 3W, OH
SAM 3W, OS
LEGEND
6 QUARTZ PORPHYRY INTRUSIVE
5 FELSPAR PORPHYRY INTRUSIVE
4 BASIC INTRUSIVES
3 SKARN COMPLEX
2 METAQUARTZITES – INCL. AMPHIBOLITIC DERIVATIVES, SCHIST ETC. (PREDOMINANT)
1 LIMESTONE (PREDOMINANT)
OUTCROP
SUBCROP
APPROX. LOCATION OF 1967 TRENCH
" " " 1971, 79, 81 DIAMOND DRILL HOLE
" CONTACT
N
PROFESSIONAL
PROVINCE
P. A. Christopher
BRITISH COLUMBIA
ENGINEER
AFTER DI SPIRITO, 1988 & SAWYER, 1967
ARNICA RESOURCES LTD.
RAM PROJECT
GEOLOGY
MAIN RIDGE
N.T.S. 104 O-13
LIARD M.D., B.C.
0 100 200 400 METRES
P.A. CHRISTOPHER & ASSOCIATES INC.
SCALE AS SHOWN
JUNE 1990
FIGURE 3

CHONG

A Geonics EM-16 electromagnetic receiver and a Scintrex MP-2 proton magnetometer were used to survey about 10 line kilometers. VLF-EM readings were taken using the Seattle transmission station. Fraser Filter values were calculated for VLF-EM data and presented and contoured on Figure 8. Contoured magnetic data is presented and contoured on Figure 7. Base station readings indicated diurnal magnetic variations of less than 50 gammas during the survey and no correction for diurnal variation was made. A total of about 15.4 km of magnetic and VLF-Em survey was completed. A cost statement for the 1990 work program is presented as Appendix C to this report.

REGIONAL GEOLOGY

The Ram Property is in the Jennings River map area and Omineca Tetonic Belt of Canadian Cordillera. The Jennings River area has been mapped by Gabrielse (1970). Gabrielse shows the area east of Swift Lake to be underlain by the Big Salmon Complex of Mississippian age. A granitic body called the Simpson Creek batholith is southeast of the Ram Property.

The Big Salmon Complex consists predominantly of gneisses and schist with lesser quartzites, shales, limestones and dolomites. The Big Salmon Complex is part of a metamorphic belt which is bounded to the West by the Teslin lineament. The northerly extension of the metamorphic belt, in the Teslin and Laberge Map areas, has been mapped as the Yukon Group.

LOCAL GEOLOGY (Figure 3 & 4)

Geologic mapping was completed by the writer over part of the grid area (Figure 4). Three map units, all part of the Salmon River Complex, were distinguished: limestone, schist and quartzite. The units are interbedded but folding could repeat the sequence. The units strike about 330° and generally dip 30-60° SW.

Limestone is either grey or brown weathering with some siliceous zones (PCR 2). The limestone unit is a ridge forming unit. The quartzite units are also ridge forming and generally have a micaceous component. As mica content of the quartzite unit increase, a mica schist unit is formed. The gullies which form between resistant units may reflect bedding plane faults or a less resistant unit.

A northerly trending fault follows a creek which passes just west of the camp area. A 030° fault forms a prominent gully in the central part of the grid area. Folding of the metamorphic sequence is evident and measurements of minor folds indicates a fold axis with a southerly plunge at about 15°.

Garnet-diopside ± magnetite and epidote skarns were observed in diamond drill core from the West Ridge area but were not seen in outcrop within the 1990 grid area.

MINERALIZATION

The Ram Property covers the Top (Arsenault) and Ram mineral occurrences which have been designated Government mineral inventory occurrences ~~82K/NW~~ 104Ø-11 and 24, respectively. The Top prospect is reported to contain disseminated chalcopyrite in garnet-diopside and garnet-diopside-magnetite skarn. The Ram prospect is reported to contain chalcopyrite, native gold and tellurides in a shear zone. Several attempts have failed to corroborate previously reported gold values (0.70% copper & 0.10 oz Au/ton over 3m., Sawyer, 1967).

Diamond drill core from the 1971 drill program remains in core racks on the property. A 1988 sampling program by DiSpirito et al. (1988) returned values up to 3949 ppm copper and 42 ppb gold in core and up to 9439 ppm copper and 275 ppb gold in surface rock samples. Prospecting by Ross (1989) resulted in float samples with values up to > 10,000 ppm copper and 340 ppb gold for angular float from the East Ridge area. Check samples of float collected by the writer from the East Ridge area contained up to 7811 ppm copper and 57 ppb gold. The writer's rock sample results are summarized in Table 2 with sample descriptions present in Appendix A.

Table 2. Summary of writer's sample results.

Sample #	Type	Width	Location	Cu ppm	Ag ppm	Au ppb
18551	grab	-	BL 1+25W	10	0.1	1
18552	Chip	1'	LO 4+70W	5	0.1	1
18553	Core	10'	71-1 698-798'	135	0.1	4
18554	Core	13'	71-1 179-192'	455	0.1	7
18555	Core	17'	71-1 192-209'	98	0.1	3
18556	Core	10'	71-1 251-261'	1402	0.7	3
18557	Core	14.5'	71-3 638.5-653	87	0.1	1
18558	Core	1'	71-3 637.5-638.5'	191	0.2	1
18559	Core	17.5'	71-3 616-633.5	595	0.3	5
18560	Core	10'	71-3 452-462'	117	0.3	1
18561	Core	23'	71-3 523-546'	295	0.1	1
18562	Core	13'	71-4 790-803'	453	0.2	7
18563	Core	13'	71-4 807-820'	30	0.1	3
18564	Chip	20'	T-3 E. 71-1	8144	5.2	300
18565	Chip	10'	T-3 E. 71-1	7307	5.1	330
18566	Grab		75M E. Ram15	7811	2.3	57
18567	Grab		as above	1127	1.1	50
18568	Grab		Ck of Ram 15 750M @ 139° from T87-8	1214	0.9	48

GEOCHEMICAL PROGRAM (Figures 4 and 5)

The geochemical program consisted of 18 rock samples and 242 soil samples (about 9.5 line kilometers). Samples were submitted to Acme Analytical Laboratories Ltd. in Vancouver for 30 element ICP with 71 samples with elevated silver (≥ 0.5 ppm), arsenic (≥ 10 ppm), and copper (≥ 100 ppm) selected for gold geochemistry by atomic absorption. Soil samples were collected with a mattock from 25cm to 50cm depths with an attempt made to collect B horizon material. Rock description are presented in Appendix A with analytical results presented in Appendix B and rock sample locations shown on Figure 3. Soil geochemical results and statistical evaluations are presented in Appendix B with gold-silver-arsenic and copper-zinc plotted and contoured on Figure 5 and 6, respectively.

Gold

Gold values in 71 soils vary from the detection limit of 1 ppb to 10 ppb with no samples considered anomalous (>20 ppb). Rock geochemical values up to 330 ppb were obtained from Trench 3 which was tested by previous drill hole 71-1.

Silver

Silver values in soils range from the detection limit of 0.1 ppm to 1.9 ppm with 31 values of 0.5 ppm considered anomalous and contoured on Figure 5. Anomalous silver values occur in isolation with no sizeable anomalous areas. Silver values up to 5.2 ppm were obtained from trench 3.

Arsenic

Arsenic values range from 2 ppm to 194 ppm with 51 values over 10 ppm considered anomalous and contoured on Figure 5. The high value for arsenic is at 0+80W on L400N in a northerly trending zone of anomalous values.

Zinc

Zinc values in soils range from 28 ppm to 239 ppm with 21 values over 150 ppm considered anomalous and contoured on Figure 6. Anomalous zinc values have no strong concentration within the grid area. The strongest zinc response for rock samples is 132 ppm.

Copper

Copper values range from 7 ppm to 314 ppm with 11 values over 100 ppm considered anomalous and contoured on Figure 6. The high value for copper is at the east end of L525N with no zones of anomalous copper indicated. The strongest copper response from rock samples was from trench 3 with a value of 8144 ppm.

GEOPHYSICAL SURVEYS

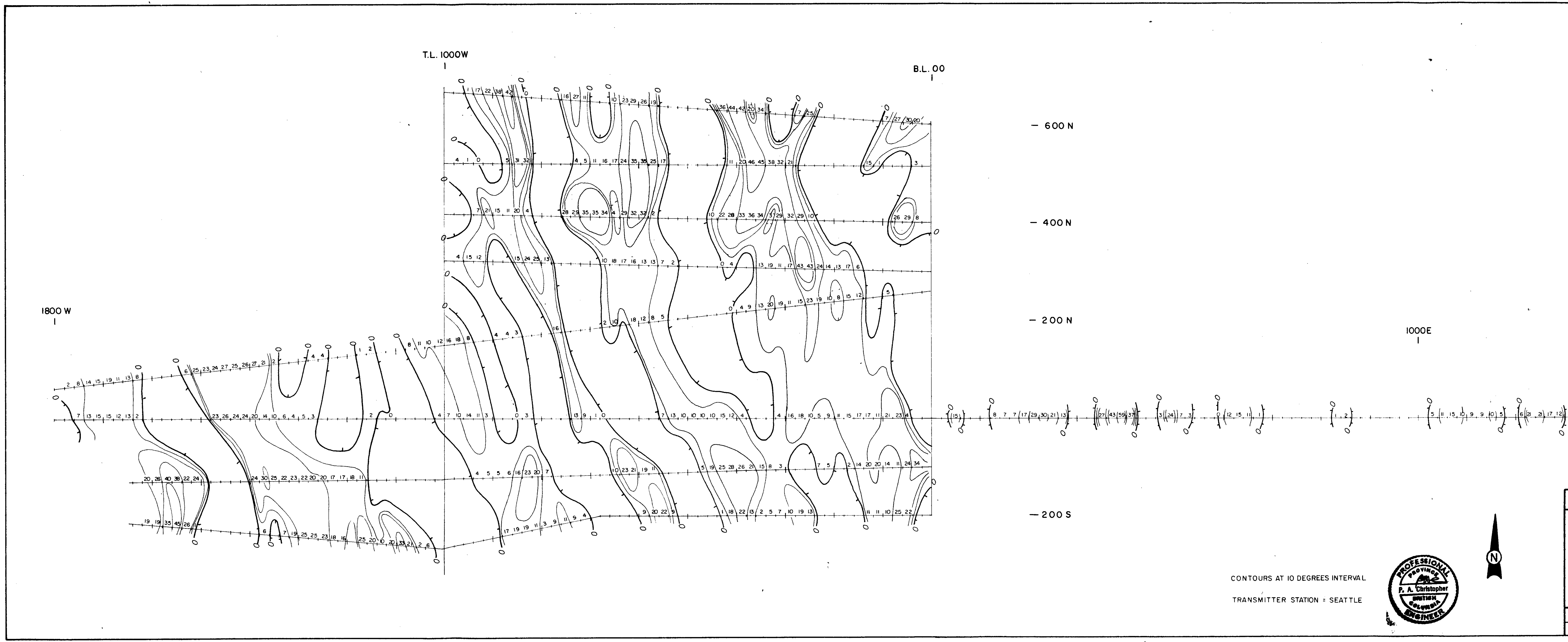
A total of about 15.4 line kilometers of VLF-EM and magnetics was completed during the 1990 field season. The VLF-EM and magnetic surveys were completed over the southerly extension of the 1987 grid area with a single 1.6 kilometer line run easterly (Figures 7 and 8). A Geonics EM-16 unit was employed for the VLF-EM survey with Seattle signal used for station 1 readings. Fraser filtered values were calculated and contoured on Figure 8.

LEGEND
BIG SALMON COMPLEXS
Ia Limestone
Ib Schist
Ic Quartzite
Outcrop
Contact
Fault
Bedding
Foliation
Plunge of minor fold
Trench
Claim post
Diamond drill hole
Creek
PCR-14 Writer's sample
GEOLOGICAL BRANCH
ASSESSMENT REPORT
20,137
T.L. 1000W
B.L. 00
1800 W
600 N
400 N
200 N
00
200 S
1000E
1600 E
SEE FIG. Nº 3
AZTEC
RAM
MIKE
SAM
Camp
PCR-1
PCR-2
PCR-14
PCR-15
T-3
DDH 71-1
LCP
Old camp
Stripping
Road
Old cut I.P. lines
Dam
DRILL POND
Ib,c minor Ia
ARNICA RESOURCES LTD.
RAM PROJECT
GRID AREA
GEOLOGY
N.T.S. 104 O-13
LIARD M.D., B.C.
0 100 200 300 METRES
P.A. CHRISTOPHER & ASSOCIATES INC.
SCALE 1:5000
JUNE 1990
FIGURE 4
PROFESSIONAL ENGINEER
P. A. Christopher
BRITISH COLUMBIA
CHONG

T.L. 1000W
B.L. 00
600 N
400 N
200 N
200 S
1800 W
1000E
1600 E
00
20137
LEGEND
67 / 123
Copper in ppm
Zinc " "
Cu contours at 100, 200 ppm
Zn contour at 150ppm
PROFESSIONAL ENGINEER
P. A. Christopher
BRITISH COLUMBIA
N
ARNICA RESOURCES LTD.
RAM PROJECT
SOIL GEOCHEMISTRY
COPPER & ZINC
N.T.S. 104 O-13
LIARD M.D., B.C.
0 100 200 300 METRES
P.A. CHRISTOPHER & ASSOCIATES INC.
SCALE 1:5000
JUNE 1990
FIGURE 6
CHONG


GEOLOGICAL BRANCH
ASSESSMENT REPORT
20,137
T.L. 1000W
B.L. 00
1800 W
1000E
1600 E
600 N
400 N
200 N
00
200 S
LEGEND
15 Gold in ppb
1.0 Silver in ppm
20 Arsenic " "
Ag contour at .5 ppm
As " " 10 "
N
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
P. A. Christopher
ARNICA RESOURCES LTD.
RAM PROJECT
SOIL GEOCHEMISTRY
GOLD, SILVER & ARSENIC
N.T.S. 104 O-13
LIARD M.D., B.C.
0 100 200 300 METRES
P.A. CHRISTOPHER & ASSOCIATES INC.
SCALE 1: 5000
JUNE 1990
FIGURE 5

CHONG



GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,137

ARNICA RESOURCES LTD.

RAM PROJECT

VLF-EM 16 SURVEY
FRASER FILTERED

N.T.S. 104 O-13 | LIARD M.D., B.C.

0 100 200 300 METRES

P.A. CHRISTOPHER & ASSOCIATES INC.

SCALE 1: 5000	JUNE 1990	FIGURE 8

CHONG

A Scintrex MP-2 proton procession magnetometer with a pack mounted sensor was used for collecting magnetic field readings. Magnetic data was contoured on Figure 7 by Chong Drafting. Diurnal variations in the magnetic field were evaluated by looping to established base stations. The diurnal variations were found to be low in comparison to total magnetic relief and machine readings were employed without correction for diurnal variation.

VLF-EM Results

Fraser filtered VLF-Em values for dip angle readings obtined for the Seattle station were contoured on Figure 8. The values were obtained to compare and extend 1987 survey data to the south. Contoured readings extending from about 14+50W on line 1N to about 12+50W on line 2S and confirm the southerly extensions of the strongest 1987 anomaly. The general 330-340° trend of anomalous patterns suggest conductivity along bedding planes. Positive Fraser Filter values up to 46 occur west of the creek and fault zone which sub-parallels baseline 0+00. Lack of significant soil geochemical response suggest strong contrast in conductive and not significant sulphide mineralization.

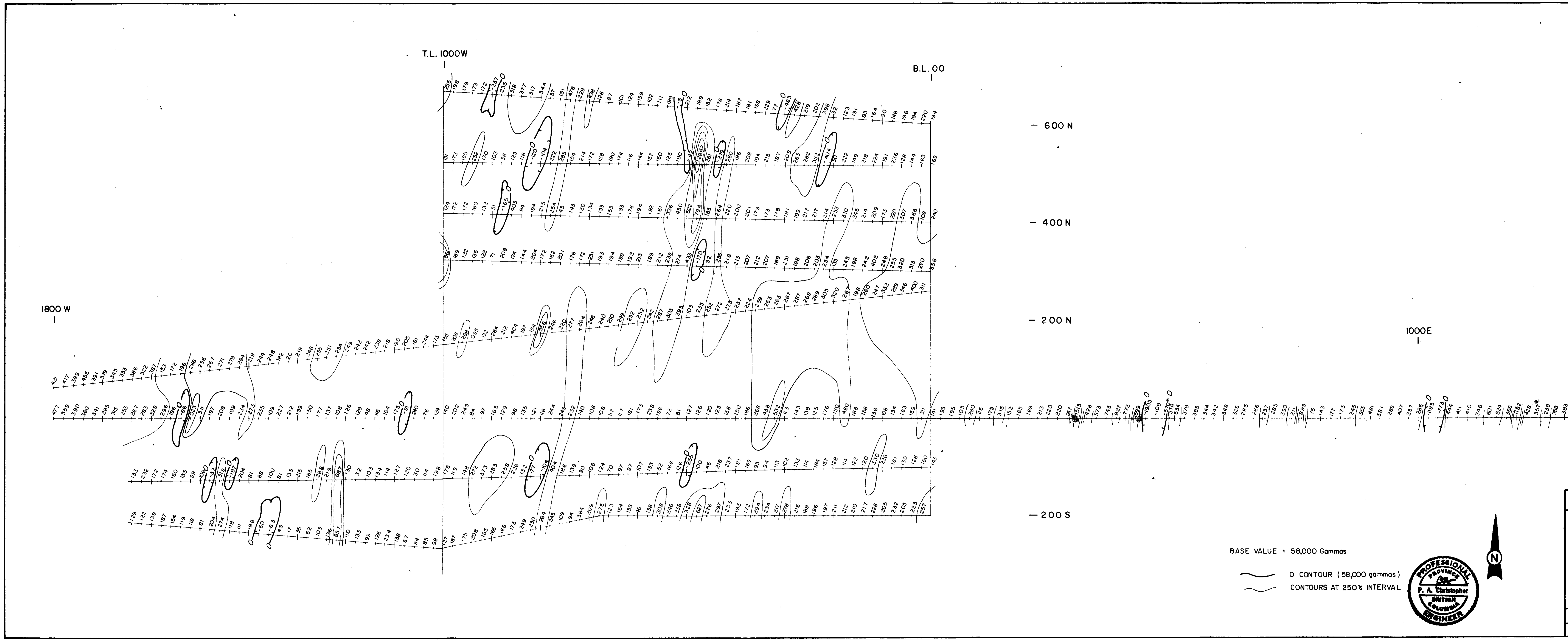
Magnetometer Results

Magnetic intensity was measured at 20 meter intervals along lines in the grid area with values ranging from a low of 56,095 gammas at 4+20E on line 0 to a high of 59,599 gammas at 4+00E on line 0. Values from the 1989 survey were contoured with a 250 gamma contour interval on Figure 7. The strong magnetic feature on line 0 east may reflect magnetite bearing garnet-diopside skarn. Northerly magnetic trends in the main grid areas sub-parallel stratigraphy and probably reflect varying magnetic characteristis of rock types. Northerly trending magnetic low (i.e. 4+50W) may reflect altered fault structures. Strong magnetic lows at 4+50E and 10+50E on line 0 probably reflect faults for which trending require definition.

CONCLUSIONS AND RECOMMENDATIONS

The Stage 1 program of ground follow-up recommended by DiSpirito et al., (1988) has been completed. The expanded geophysical program and an expanded geochemical program have not outlined targets that warrant drilling at this time.

Considering that the main geochemical and geophysical (I.P. & VLF-Em) anomalies on the 'Main' and 'East' ridges (Ross, 1989), situated in mountainous terrane, has previously been trenched, drilled (at least 6 holes totalling over 2000 meters) and prospected without locating economic concentrations in the sulfide bearing skarn, the writer does not recommending further drilling by Arnica Resources Ltd. Future assessment work programs should concentrate on the northwest part of the 1987 grid and on locating the higher grade gold values reported by Sawyer (1967).



ARNICA RESOURCES LTD.

RAM PROJECT

MAGNETOMETER SURVEY

N.T.S. 104 O-13 LIARD M.D., B.C.

0 100 200 300 METRES

P.A. CHRISTOPHER & ASSOCIATES INC.

SCALE 1:5000 | JUNE 1990 | FIGURE 7

CHONG

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CERTIFICATE

I, Peter A. Christopher, with business address at 3707 West 34th Avenue, Vancouver, British Columbia, do hereby certify that:

1) I am a consulting geological engineer registered with the Association of Professional Engineers of British Columbia since 1976.

2) I am a Fellow of the Geological Association of Canada and a member of the Society of Economic Geologists.

3) I hold a B.Sc. (1966) from the State University of New York at Fredonia, a M.A. (1968) from Dartmouth College and a Ph.D. (1973) from the University of British Columbia.

4) I have been practising my profession as a Geologist for over 20 years.

5) I have no direct or indirect interest, nor do I expect to receive any interest directly or indirectly in the property or securities of Arnica Resources Ltd.

6) I have based this report on all available geological data on the property and adjacent mineral deposits. An the results of the 1990 geological, geochemical, geophysical and trenching program conducted under my personal field supervision between June 5, 1990 and June 12, 1990.

7) I consent to the use of this report by Arnica Resources Ltd. in any Filing Statement, Statement of Material Facts, or for filing assessment work.

Peter A. Christopher Ph.D. P.Eng.
July 6, 1990

APPENDIX A. DESCRIPTION OF ROCK SAMPLES

Sample #	Type	Width	Location	Description
18551	grab	-	BL 1+25W	Quartz float from nearby otc. in schist. Vein to 6".
18552	Chip	1'	LO 4+70W	Lms. with quartz pod no sulphides
18553	Core	10'	71-1 698-798'	Micaceous grey quartzite; 2-3% py + po. weakly magnetic.
18554	Core	13'	71-1 179-192'	Skarny quartzite; 5-7% qtz. vein.
18555	Core	17'	71-1 192-209'	Py. Micaceous Quartzite; 3-4% py
18556	Core	10'	71-1 251-261'	Py. Micaceous Quartzite; 5% py.
18557	Core	14.5'	71-3 638.5-653	Py. Micaceous Quartzite; 5% py 6" qtz. veining 649-650.
18558	Core	1'	71-3 637.5-638.5'	chloritic quartzite with 1-2% py coarse grained near 637.5.
18559	Core	17.5'	71-3 616-633.5	Micaceous Quartzite 2% py.
18560	Core	10'	71-3 452-462'	Skarnified quartzite; 2% py.
18561	Core	23'	71-3 523-546'	Epidote Bearing quartzite:; 2% py
18562	Core	13'	71-4 790-803'	Magnetic Epidote-Garnet Skarn, Tr. cpy; 2-3% py.
18563	Core	13'	71-4 807-820'	Epidote skarn; 2-4% py.
18564	Chip	20'	T-3 E. 71-1	sub-parallels layering in gneiss; 5% pyrite, malachite and limonite 10%. sample N20°W in trench.
18565	Chip	10'	T-3 E. 71-1	As above but 2' qtz pod at start Sample south of 18564.
18566	Grab		75M E. Ram15	Float of Actinolite skarn; po., py. & mal.
18567	Grab		as above	Float of quart rich material.
18568	Grab		Ck of Ram 15 750M @ 139° from T87-8	Rusty lms. with possible chalcocite, mal. & azurite stain.

APPENDIX B

CERTIFICATES OF ANALYSIS

STATISTICAL ANALYSIS OF SOIL GEOCHEMISTRY

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Peter A. Christopher PROJECT RAM 90-1 File # 90-1795 Page 1

3707 W. 34th Ave, Vancouver BC V6N 2C9

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm
L0 0+1300W	1	12	20	122	.1	23	13	851	5.01	2	5	ND	5	18	.2	3	2	93	.24	.028	25	62	.86	113	.67	3	2.10	.02	.12	1
L0 0+1280W	1	12	19	103	.1	31	12	849	4.54	2	5	ND	4	21	.2	3	2	78	.31	.024	14	55	1.03	141	.43	2	2.13	.02	.09	1
L0 0+1240W	1	24	13	105	.2	29	12	534	4.24	2	5	ND	5	30	.2	2	2	62	.39	.037	17	45	1.13	134	.34	3	2.33	.02	.12	1
L0 0+1200W	1	29	16	99	.1	35	16	915	3.91	2	5	ND	4	38	.2	2	2	50	.53	.060	28	41	1.38	128	.17	3	2.59	.02	.14	1
L0 0+1160W	1	35	12	98	.1	53	15	639	4.10	3	5	ND	4	36	.2	2	2	63	.48	.041	22	50	1.52	123	.23	7	2.70	.04	.16	1
L0 0+1120W	1	43	18	108	.1	47	16	960	4.39	2	5	ND	4	98	.2	2	2	60	1.34	.053	25	48	1.93	132	.19	6	3.26	.06	.17	1
L0 0+1080W	1	36	9	79	.1	48	12	470	3.38	2	5	ND	5	40	.2	2	2	80	.42	.033	13	57	2.21	106	.22	5	3.04	.03	.09	1
L0 0+1040W	1	38	18	93	.1	51	16	896	3.94	2	5	ND	7	71	.3	2	2	65	1.23	.043	24	47	2.06	111	.20	5	2.69	.04	.15	1
L0 0+1000W	1	13	13	57	.1	18	8	525	3.17	2	5	ND	5	23	.2	2	2	54	.33	.031	12	34	.85	78	.27	2	1.54	.01	.10	1
L0 0+960W	1	35	16	102	.1	41	12	599	3.52	8	5	ND	11	41	.2	2	3	62	.76	.064	25	49	2.03	164	.24	12	3.03	.03	.16	1
L0 0+920W	1	26	18	85	.1	37	11	546	3.67	2	5	ND	5	29	.2	2	2	61	.45	.050	17	46	1.58	126	.23	6	2.34	.02	.14	1
L0 0+880W	1	35	12	102	.1	42	15	709	3.68	5	5	ND	5	27	.2	2	2	65	.54	.056	19	52	1.58	131	.21	2	2.16	.02	.11	1
L0 0+840W	1	8	13	43	.1	6	3	179	1.21	2	5	ND	1	12	.2	2	2	31	.15	.037	8	15	.16	83	.12	2	.61	.03	.04	1
L0 0+800W	1	50	7	69	.1	43	13	397	3.56	3	5	ND	3	25	.2	2	2	61	.35	.026	12	40	1.00	155	.23	2	2.32	.02	.18	1
L0 0+760W	1	50	14	75	.1	46	14	984	4.35	2	5	ND	3	26	.2	2	3	77	.38	.046	18	53	1.78	198	.23	3	2.92	.02	.14	1
L0 0+720W	1	11	12	82	.1	21	12	1690	2.95	2	5	ND	2	33	.2	2	2	43	.72	.066	14	36	1.21	271	.14	2	1.94	.01	.10	1
L0 0+680W	1	20	12	69	.1	16	5	448	2.41	5	5	ND	1	26	.2	2	2	60	.60	.099	13	38	.42	166	.14	2	1.06	.01	.06	1
L0 0+640W	1	19	16	85	.1	32	15	1123	3.68	8	5	ND	7	19	.2	2	3	57	.39	.047	17	55	1.89	295	.22	2	2.64	.01	.08	1
L0 0+600W	1	22	13	74	.1	21	9	542	3.40	5	5	ND	3	19	.2	2	2	64	.34	.036	11	47	1.47	161	.23	6	2.11	.01	.09	1
L0 0+560W	1	28	28	126	.2	16	13	2343	3.07	2	5	ND	2	33	.6	2	2	54	.90	.063	18	32	.55	542	.20	2	1.31	.01	.07	1
L0 0+520W	1	34	16	138	.2	26	12	843	4.03	7	5	ND	4	46	.2	2	2	43	1.64	.075	19	41	1.31	264	.19	2	2.28	.01	.16	1
L0 0+480W	1	32	11	100	.2	22	7	470	1.99	3	5	ND	1	36	.2	2	2	30	1.46	.116	32	58	1.14	169	.05	2	1.58	.03	.05	1
L0 0+440W	1	33	23	116	.1	32	17	2337	3.90	12	5	ND	1	31	.3	2	2	56	1.25	.127	31	137	2.61	207	.11	4	2.99	.02	.14	1
L0 0+400W	1	65	14	94	.5	27	23	3456	1.72	3	5	ND	1	95	.9	2	2	22	3.87	.231	36	27	.64	433	.04	2	1.49	.01	.04	2
L0 0+360W	1	36	17	132	.3	30	30	1556	4.13	20	5	ND	3	29	.3	2	3	63	.78	.080	35	58	1.15	251	.20	2	2.06	.01	.13	1
L0 0+320W	1	16	22	101	.1	21	8	364	3.91	12	5	ND	2	20	.2	2	2	112	.38	.027	14	84	2.11	207	.53	2	2.53	.02	.10	1
L0 0+280W	1	21	14	99	.1	19	7	314	4.08	9	5	ND	3	24	.3	2	2	99	.40	.032	12	45	.53	281	.41	2	1.27	.01	.11	1
L0 0+240W	1	24	13	96	.1	48	12	461	3.57	3	5	ND	2	15	.2	2	2	61	.25	.040	12	69	1.17	112	.20	2	2.24	.02	.10	1
L0 0+200W	1	17	13	61	.1	26	7	429	3.05	4	5	ND	1	14	.2	2	2	72	.19	.024	8	51	.61	144	.22	2	1.55	.02	.07	1
L0 0+160W	1	29	17	107	.1	53	17	538	5.04	15	5	ND	4	21	.2	2	3	76	.22	.014	11	77	1.33	167	.28	2	3.17	.02	.13	1
L0 0+120W	1	9	24	56	.1	15	6	511	3.41	7	5	ND	1	7	.2	2	2	38	.16	.055	6	33	.74	48	.13	2	1.47	.01	.04	1
L0 0+80W	1	8	21	58	.1	43	7	388	2.51	3	5	ND	1	9	.2	2	2	49	.13	.025	7	56	1.03	60	.20	2	1.59	.01	.04	1
L0 0+40W	1	26	40	95	.1	28	12	2828	3.53	9	5	ND	2	45	.5	2	2	64	1.06	.068	15	58	1.09	264	.22	2	1.89	.01	.11	1
L0 0+00W	1	24	16	71	.1	26	9	475	3.26	7	5	ND	2	16	.2	2	2	60	.28	.029	11	41	.73	124	.21	2	1.88	.01	.08	1
L100 0+1300W	2	40	8	147	.1	45	15	1430	5.49	3	5	ND	3	29	.2	2	4	138	.51	.035	10	44	3.62	154	.22	3	4.85	.01	1.16	2
L100 0+1240W	1	16	14	77	.1	25	9	374	3.69	6	5	ND	2	22	.2	2	2	56	.26	.031	9	37	1.05	98	.19	2	2.05	.01	.13	1
STANDARD C	17	56	40	132	7.3	72	31	1020	3.95	43	21	6	37	52	18.4	15	23	57	.50	.086	37	58	.91	180	.09	36	1.90	.05	.14	11

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-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 LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: P1-P7 Soil P8 Core P9 Rock

DATE RECEIVED: JUN 15 1990 DATE REPORT MAILED: June 22/90. SIGNED BY. C. Leong ....D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
L100 0+1220W	1	19	17	97	.2	20	12	1287	4.04	13	5	ND	4	45	.2	2	2	71	.65	.066	17	34	.51	171	.39	7	1.33	.01	.10	1
L100 0+1180W	1	24	12	82	.2	27	10	745	2.65	7	5	ND	3	106	.2	2	2	34	2.38	.066	18	26	.82	96	.13	9	1.62	.02	.09	1
L100 0+1140W	1	8	14	38	.1	12	4	233	2.06	6	5	ND	2	20	.2	2	2	47	.30	.020	8	19	.48	82	.22	4	.99	.01	.07	1
L100 0+1100W	2	21	36	90	.1	17	7	1048	2.15	4	5	ND	1	28	.6	2	2	43	.38	.075	17	28	.54	92	.14	7	1.17	.01	.06	1
L100 0+1060W	1	17	15	80	.1	16	6	431	2.50	6	5	ND	1	40	.2	2	2	46	.61	.068	14	25	.44	90	.15	4	1.03	.01	.07	1
L100 0+980W	1	27	11	156	.1	20	20	1892	2.53	5	5	ND	2	105	.6	2	2	33	2.23	.173	29	29	.56	172	.08	8	1.46	.02	.07	1
L100 0+940W	1	36	9	70	.1	43	17	530	3.56	12	5	ND	7	33	.2	2	2	37	.50	.044	20	32	.98	108	.15	8	1.71	.01	.07	1
L100 0+900W	2	56	12	122	.5	35	8	1482	2.35	2	7	ND	2	106	.3	2	2	30	3.47	.130	50	32	1.11	187	.07	14	1.64	.01	.05	1
L100 0+860W	2	56	33	92	.2	63	21	1017	4.73	12	5	ND	7	94	.2	2	2	33	1.68	.091	38	27	.93	114	.15	8	1.70	.02	.07	1
L100 0+820W	1	11	12	58	.1	14	6	495	1.34	4	5	ND	1	63	.2	2	2	17	2.37	.064	13	11	.27	143	.07	6	.67	.01	.04	1
L100 0+780W	1	13	5	156	.1	5	3	822	.58	2	5	ND	1	81	1.2	2	2	9	3.55	.102	4	6	.14	120	.03	11	.37	.02	.05	1
L100 0+740W	1	15	7	58	.3	9	4	777	1.10	2	5	ND	1	63	.8	2	2	15	2.63	.250	10	13	.28	193	.03	10	1.15	.02	.04	1
L100 0+700W	1	23	15	119	.2	23	13	1930	3.06	4	5	ND	2	64	.7	2	2	42	2.32	.117	20	35	.98	321	.15	7	1.79	.02	.07	1
L100 0+660W	1	19	14	89	.1	11	6	1589	1.11	2	6	ND	1	85	.8	2	2	14	4.14	.144	10	13	.35	344	.04	8	.86	.01	.04	1
L100 0+580W	1	15	19	104	.1	11	8	588	3.22	2	5	ND	2	28	.2	2	2	60	.98	.094	20	29	1.74	423	.14	8	2.26	.01	.05	1
L100 0+540W	1	12	15	47	.1	9	3	261	2.21	40	5	ND	4	11	.2	2	2	64	.18	.022	8	19	.40	105	.29	2	.90	.01	.05	2
L100 0+500W	1	13	21	99	.1	29	12	1662	2.94	8	5	ND	6	39	.2	2	2	28	1.02	.074	26	31	1.14	252	.12	13	1.67	.02	.07	1
L100 0+460W	1	26	41	184	.1	15	6	1035	1.45	2	6	ND	1	81	1.2	2	2	17	4.17	.099	11	17	1.14	860	.06	14	1.22	.01	.05	1
L100 0+420W	1	28	10	156	.2	8	2	905	.35	2	5	ND	1	99	1.7	2	2	4	5.13	.129	6	4	.12	709	.01	14	.36	.01	.03	1
L100 0+380W	1	10	16	89	.1	29	9	579	4.60	16	5	ND	2	13	.2	2	2	85	.33	.029	8	102	1.35	87	.26	2	2.23	.01	.06	1
L100 0+340W	1	7	3	121	.1	29	9	1579	2.75	8	5	ND	9	18	.2	2	2	39	.94	.031	25	56	4.62	103	.19	9	4.19	.01	.03	1
L100 0+280W	1	24	7	102	.1	34	15	1171	3.21	11	5	ND	3	35	.2	2	2	61	1.19	.045	13	72	2.02	347	.17	7	2.56	.01	.07	1
L100 0+240W	1	56	8	76	.3	31	9	1373	2.68	6	6	ND	1	70	.6	2	2	37	2.95	.176	35	37	.78	365	.10	3	2.05	.01	.04	1
L100 0+200W	1	17	2	92	.1	6	1	182	.42	2	5	ND	1	90	.5	2	2	6	3.83	.078	6	6	.15	212	.02	7	.32	.01	.02	1
L100 0+160W	1	29	4	59	.1	10	3	915	.55	2	5	ND	1	137	.4	2	2	7	5.97	.102	8	8	.13	274	.01	7	.67	.01	.01	1
L100 0+120W	1	13	2	136	.1	187	60	1364	5.20	24	5	ND	1	42	.5	2	2	121	1.35	.077	4	413	2.56	300	.31	2	3.67	.03	.11	1
L100 0+80W	1	28	9	100	.1	36	20	1252	4.13	11	5	ND	2	17	.2	2	2	67	.40	.063	8	53	1.63	129	.27	3	2.47	.01	.08	1
L100 0+40W	1	14	20	31	.1	5	2	136	.92	2	5	ND	2	14	.3	2	2	38	.19	.014	11	17	.14	105	.28	2	.62	.01	.03	3
L100 0+00W	1	22	19	68	.1	11	6	452	2.61	3	5	ND	1	11	.2	2	2	58	.18	.054	10	23	.28	103	.26	2	.99	.01	.04	1
L100S 1500W	1	22	8	91	.1	31	11	482	4.00	4	5	ND	4	33	.2	2	2	63	.51	.021	11	49	1.42	117	.28	7	2.45	.02	.11	1
L100S 1480W	1	19	7	98	.1	24	12	743	3.22	4	5	ND	4	37	.2	2	2	49	.64	.030	13	36	1.15	142	.21	4	1.95	.01	.09	1
L100S 1440W	1	237	13	151	.4	56	15	1044	3.82	42	10	ND	1	82	.3	2	2	49	1.81	.109	65	43	.84	233	.16	2	2.42	.02	.08	1
L100S 1400W	2	96	6	78	.5	35	14	1667	2.82	10	7	ND	1	100	.2	2	2	42	1.96	.152	63	33	.64	231	.10	2	2.15	.02	.09	1
L100S 1360W	5	116	6	82	1.0	38	10	943	3.02	2	8	ND	1	94	.2	2	2	39	1.23	.222	108	33	.36	268	.10	2	2.59	.02	.03	1
L100S 1320W	2	136	2	102	.3	27	3	254	.61	2	8	ND	1	173	.5	2	2	9	5.75	.131	29	8	.10	87	.02	8	.59	.01	.03	1
L100S 1280W	3	23	9	49	.1	16	8	570	2.87	5	5	ND	3	43	.5	2	2	58	.67	.023	15	27	.74	151	.27	2	1.36	.01	.06	1
STANDARD C	17	57	35	131	7.3	70	31	1032	3.87	39	15	6	37	53	18.6	15	19	55	.50	.086	37	57	.90	180	.09	32	1.86	.05	.14	11

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
L100S 1240W	1	28	9	96	.3	11	5	717	1.09	3	5	ND	1	124	1.8	2	2	17	2.28	.131	10	10	.16	190	.04	7	.70	.01	.06	1
L100S 1200W	1	33	14	100	.2	34	13	790	3.53	10	5	ND	5	51	.2	2	2	49	.73	.048	23	38	1.19	111	.18	8	2.22	.02	.12	2
L100S 1160W	1	31	18	76	.1	44	15	762	3.59	7	5	ND	7	34	.2	2	2	50	.37	.028	24	40	1.32	99	.19	4	2.28	.01	.13	1
L100S 1120W	1	30	11	76	.1	32	11	477	3.67	6	5	ND	5	27	.2	2	4	56	.37	.025	13	41	1.40	91	.21	5	2.29	.01	.12	2
L100S 1080W	1	27	12	90	.1	33	10	797	3.14	5	5	ND	3	74	.2	2	2	65	1.13	.052	21	40	1.27	143	.16	8	2.15	.02	.09	1
L100S 1040W	1	27	10	83	.1	33	10	561	3.43	3	5	ND	6	36	.2	2	3	57	.44	.041	15	42	1.77	164	.20	5	2.62	.01	.08	2
L100S 1000W	1	26	25	87	.2	23	10	973	2.96	2	5	ND	2	32	.2	2	2	96	.60	.059	10	53	2.06	221	.21	6	2.62	.01	.05	2
L100S 960W	1	22	8	152	.1	32	12	1427	3.47	5	5	ND	3	98	.3	2	2	97	1.54	.067	12	57	3.03	192	.23	6	3.97	.06	.16	3
L100S 920W	1	25	11	83	.1	35	12	627	3.49	11	5	ND	4	25	.2	2	2	56	.35	.029	14	48	1.39	199	.18	6	2.56	.01	.08	2
L100S 880W	1	19	11	83	.3	15	9	1336	2.04	2	5	ND	1	107	.2	2	2	28	2.72	.138	13	21	.43	188	.07	5	1.21	.01	.04	1
L100S 840W	1	41	27	97	.2	35	15	864	2.99	2	5	ND	2	93	.2	2	2	33	1.70	.056	19	36	1.54	97	.12	18	2.03	.04	.07	1
L100S 800W	1	19	22	109	.1	23	13	1019	3.51	5	5	ND	3	37	.2	3	2	53	.65	.056	12	37	1.06	151	.25	13	1.54	.01	.18	1
L100S 760W	1	28	34	78	.3	30	13	1826	3.02	6	5	ND	2	121	.2	2	2	30	2.51	.113	14	25	.57	199	.08	6	1.41	.01	.08	1
L100S 720W	1	21	15	91	.1	30	19	824	3.32	3	5	ND	4	20	.2	2	2	48	.34	.052	13	42	1.11	167	.19	9	1.98	.01	.10	1
L100S 680W	1	20	16	76	.1	33	15	613	3.61	5	5	ND	6	30	.2	2	3	51	.23	.022	16	42	1.46	123	.20	10	2.43	.01	.17	1
L100S 640W	1	58	7	107	.2	20	5	826	1.01	3	7	ND	1	117	.4	2	2	13	4.91	.171	37	14	.27	233	.02	12	.78	.01	.03	1
L100S 600W	1	17	28	64	.1	33	11	1461	3.42	3	5	ND	5	35	.2	2	2	21	.89	.061	35	21	1.10	74	.07	9	1.70	.01	.04	1
L100S 560W	1	14	13	63	.1	20	8	489	3.27	4	5	ND	3	20	.2	2	2	53	.36	.031	12	34	1.00	107	.21	4	1.84	.01	.07	1
L100S 520W	2	156	11	109	.5	50	13	1022	3.90	29	5	ND	1	28	.9	2	4	55	.55	.103	47	64	.90	163	.14	8	1.92	.01	.06	1
L100S 480W	1	39	24	114	.2	28	20	2288	4.36	7	5	ND	2	25	.2	2	4	50	.61	.066	18	41	.76	387	.27	8	1.98	.01	.04	1
L100S 440W	1	44	20	147	.3	43	28	594	4.36	7	5	ND	6	27	.2	2	3	35	.78	.062	46	32	1.07	209	.18	8	2.26	.01	.60	1
L100S 400W	1	17	10	64	.1	26	9	242	2.84	6	5	ND	4	15	.2	2	2	42	.29	.036	22	34	.69	94	.17	7	1.44	.01	.13	1
L100S 360W	1	30	22	107	.1	27	13	717	4.21	8	5	ND	6	15	.2	2	4	71	.33	.040	29	49	.91	112	.39	5	1.60	.01	.15	1
L100S 320W	1	16	10	81	.3	40	13	438	3.27	9	5	ND	5	11	.2	2	2	46	.23	.035	13	55	1.20	154	.16	8	2.19	.01	.10	1
L100S 280W	1	18	11	89	.1	48	12	365	3.85	6	5	ND	2	11	.2	2	2	64	.21	.031	9	82	1.51	93	.28	3	2.49	.01	.08	1
L100S 240W	1	18	18	89	.1	30	9	434	4.19	11	5	ND	3	11	.2	2	2	75	.17	.024	9	56	1.15	149	.28	2	2.00	.01	.07	1
L100S 200W	1	13	15	69	.1	24	7	383	3.86	4	5	ND	2	12	.2	2	2	76	.12	.037	8	46	.71	86	.25	2	1.43	.01	.09	1
L100S 160W	1	12	29	67	.1	20	6	264	2.56	3	5	ND	1	9	.2	2	2	63	.11	.028	9	45	.56	75	.25	4	1.31	.01	.04	1
L100S 120W	1	20	18	67	.1	23	7	348	3.57	5	5	ND	2	10	.2	2	3	69	.10	.027	8	44	.58	88	.25	2	1.67	.01	.05	1
L100S 80W	2	36	9	71	1.1	19	27	6719	2.84	10	5	ND	1	44	.2	2	2	43	1.24	.306	12	39	.30	343	.02	4	1.62	.01	.03	1
L100S 40W	1	40	15	76	.1	38	12	683	3.55	20	5	ND	3	16	.2	2	2	50	.33	.064	11	41	.98	154	.14	4	2.29	.01	.07	1
L100S 0W	1	16	37	107	.1	17	8	653	3.68	6	5	ND	3	16	.2	2	3	48	.25	.044	10	35	1.00	59	.18	8	1.68	.01	.06	1
L200S 1500W	3	42	25	178	.1	37	11	2101	4.04	13	5	ND	1	58	2.4	2	2	34	1.66	.069	13	28	.55	156	.10	10	1.51	.01	.04	1
L200S 1460W	3	16	31	138	.1	41	7	2858	3.63	32	5	ND	1	16	.9	2	2	11	.40	.046	8	12	.19	79	.04	7	.58	.01	.01	1
L200S 1420W	4	227	27	224	.6	52	18	2716	3.87	54	9	ND	1	123	.3	2	3	34	2.74	.103	66	29	.53	134	.09	5	1.63	.02	.04	1
L200S 1380W	2	79	9	94	.5	24	8	1737	1.61	4	6	ND	1	161	1.0	2	2	20	3.82	.171	24	18	.26	154	.04	5	1.24	.01	.04	1
STANDARD C	18	60	37	132	7.3	70	31	1021	3.91	41	16	6	37	53	18.7	14	22	57	.50	.084	38	58	.91	181	.09	32	1.90	.05	.14	12

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
L200S 1340W	1	25	11	82	.1	30	12	698	3.81	7	5	ND	6	36	.3	3	2	70	.71	.020	14	45	1.61	76	.23	9	2.45	.01	.12	1
L200S 1300W	1	132	25	98	.5	40	12	939	3.00	6	7	ND	1	98	.8	2	2	43	2.09	.087	94	37	.93	114	.14	9	1.98	.02	.10	1
L200S 1260W	1	55	9	142	.4	21	7	814	1.60	3	5	ND	1	130	1.5	2	2	23	3.01	.104	34	19	.50	111	.06	10	1.21	.02	.06	1
L200S 1220W	1	23	15	97	.1	17	6	383	3.19	4	5	ND	1	43	.3	3	2	67	.65	.054	10	27	.53	138	.20	6	1.05	.01	.10	1
L200S 1180W	1	73	16	125	.4	35	21	1846	4.30	3	5	ND	2	55	.6	2	2	64	.78	.077	79	39	.70	140	.25	4	2.46	.02	.06	1
L200S 1140W	1	20	23	145	.1	30	15	672	3.91	4	5	ND	3	45	.2	3	2	50	.57	.036	14	34	1.08	104	.19	10	1.96	.01	.05	1
L200S 1100W	1	19	14	100	.2	19	10	752	3.28	6	5	ND	1	39	.4	2	2	58	.63	.087	26	50	1.06	169	.09	5	1.95	.01	.04	1
L200S 1060W	1	8	19	53	.1	8	3	312	1.88	3	5	ND	1	22	.2	2	2	50	.24	.049	12	21	.24	78	.18	4	.86	.01	.03	1
L200S 1020W	1	17	11	62	.1	11	5	427	1.47	2	5	ND	1	21	.3	2	2	26	.24	.067	10	17	.23	144	.06	8	.82	.02	.04	2
L200S 980W	1	17	20	78	.1	15	5	398	2.49	6	5	ND	1	15	.3	2	2	65	.20	.049	13	37	.60	97	.29	9	1.13	.01	.05	1
L200S 940W	1	22	18	115	.5	22	21	3497	3.39	3	5	ND	1	63	.9	2	3	58	1.05	.066	15	36	.84	479	.25	10	1.50	.02	.13	1
L200S 900W	1	27	22	120	.4	22	29	4985	3.94	2	5	ND	2	32	.5	3	3	55	.37	.058	21	27	.50	251	.25	6	1.24	.01	.05	1
L200S 860W	1	16	14	63	.1	17	7	423	4.30	6	5	ND	2	17	.2	3	2	73	.13	.057	11	27	.62	104	.26	4	1.45	.01	.07	1
L200S 820W	1	20	7	66	.1	22	9	429	3.54	3	5	ND	3	19	.2	3	2	59	.19	.032	12	39	1.05	104	.24	8	1.62	.01	.14	1
L200S 780W	3	21	14	100	.1	12	7	515	3.51	5	5	ND	3	23	.5	3	2	77	.29	.049	16	29	.40	100	.51	8	.78	.01	.12	1
L200S 740W	1	27	13	92	.3	27	11	812	4.05	9	5	ND	3	17	.2	2	2	60	.33	.059	20	43	1.38	104	.26	12	2.41	.01	.08	1
L200S 700W	1	15	11	86	.1	26	9	1108	3.18	2	5	ND	7	30	.2	2	2	72	.91	.039	20	45	3.71	89	.20	14	3.63	.01	.09	1
L200S 660W	2	44	11	88	.1	28	9	558	3.91	3	5	ND	17	22	.4	2	2	136	1.02	.033	51	79	5.84	46	.37	12	5.15	.01	.06	1
L200S 620W	3	85	26	113	.8	49	14	900	5.01	23	5	ND	4	27	.2	2	2	84	.36	.090	38	62	2.21	220	.22	6	3.63	.01	.09	1
L200S 580W	2	60	23	107	.5	31	11	667	4.53	9	5	ND	1	21	.2	3	2	76	.22	.077	27	42	.82	174	.26	4	1.86	.01	.06	1
L200S 540W	1	30	42	128	.4	22	11	1845	3.74	7	5	ND	1	98	.6	2	2	25	3.00	.242	43	18	.20	96	.08	8	1.47	.01	.02	1
L200S 500W	1	26	29	90	.2	20	13	1745	3.53	9	5	ND	3	64	.2	2	2	22	1.74	.119	46	22	.63	100	.08	12	1.68	.01	.08	1
L200S 460W	1	33	8	115	.3	70	31	2232	5.24	24	5	ND	1	36	.4	3	2	101	1.08	.128	78	259	2.20	209	.23	8	3.15	.01	.15	1
L200S 420W	3	27	13	84	.1	32	14	1141	3.53	16	5	ND	1	19	.2	3	2	76	.44	.073	41	91	1.26	116	.17	6	1.80	.01	.10	1
L200S 380W	1	26	11	79	.1	36	12	960	3.17	14	5	ND	8	20	.2	2	2	45	.69	.027	24	53	2.59	153	.20	12	2.68	.01	.12	1
L200S 340W	1	28	14	108	.1	49	15	844	3.96	12	5	ND	2	13	.2	2	2	53	.28	.055	17	66	1.69	145	.18	8	2.79	.01	.07	1
L200S 300W	1	22	18	83	.1	32	16	1664	4.33	7	5	ND	3	13	.2	2	2	62	.27	.065	14	50	1.47	162	.21	8	2.61	.01	.05	1
L200S 260W	1	61	11	83	.5	33	12	2679	3.69	20	5	ND	1	59	.3	2	2	52	1.94	.124	24	44	.82	558	.11	4	2.55	.01	.04	1
L200S 220W	1	40	8	75	.1	51	11	1119	4.18	12	5	ND	2	46	.2	2	2	46	1.30	.081	31	37	1.12	194	.28	10	2.35	.02	.03	1
L200S 180W	3	54	3	62	.1	36	5	335	1.39	4	15	ND	1	81	.5	2	2	50	3.78	.078	12	14	.25	153	.09	17	.96	.02	.01	1
L325 0+1000W	1	25	2	185	.1	9	2	530	.59	2	5	ND	1	167	.5	2	2	9	4.36	.091	12	6	.10	80	.03	17	.45	.02	.02	1
L325 0+960W	1	72	10	125	.4	28	9	889	2.15	4	7	ND	1	154	.2	2	2	27	3.92	.144	44	29	.55	143	.05	12	1.51	.02	.06	1
L325 0+920W	1	19	3	38	.1	7	2	114	.98	2	5	ND	1	117	.2	2	2	21	.47	.026	9	9	.15	47	.06	7	.53	.02	.02	2
L325 0+880W	1	16	11	48	.1	13	4	191	1.81	2	5	ND	1	33	.2	2	2	35	.20	.037	11	24	.44	77	.11	5	.97	.01	.04	2
L325 0+840W	1	16	11	45	.1	20	7	209	3.13	4	5	ND	2	27	.2	3	2	54	.13	.019	7	24	.45	56	.21	5	1.24	.01	.06	1
L325 0+800W	2	73	15	84	.7	32	15	2273	2.97	5	5	ND	1	97	.7	2	2	44	2.41	.173	34	32	.33	326	.08	5	1.46	.01	.04	1
STANDARD C	18	57	37	132	7.4	70	31	1033	3.91	41	15	6	37	52	18.6	16	18	56	.50	.086	38	58	.91	180	.09	32	1.89	.05	.14	11

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
L325 0+760W	1	35	14	128	.5	18	7	816	2.25	2	9	ND	1	75	.2	2	2	27	3.10	.233	33	29	.62	264	.05	2	1.71	.01	.05	1
L325 0+720W	1	9	8	50	.1	6	2	257	1.21	2	5	ND	1	41	.2	2	2	17	.74	.055	10	17	.79	107	.07	2	1.04	.01	.03	1
L325 0+640W	1	21	10	130	.1	21	7	739	1.34	3	9	ND	1	106	.3	2	2	19	4.33	.084	16	21	.48	335	.05	8	.99	.01	.05	1
L325 0+600W	1	14	8	161	.2	23	12	1694	2.81	2	5	ND	1	58	.4	2	2	82	2.78	.102	7	97	2.49	254	.13	7	2.45	.01	.06	1
L325 0+560W	1	31	17	79	.2	25	12	1067	3.16	6	6	ND	6	67	.2	3	2	44	2.76	.049	25	32	2.47	147	.17	6	2.48	.01	.08	1
L325 0+520W	1	15	14	92	.1	28	10	483	2.96	2	5	ND	6	25	.2	2	2	42	.64	.021	13	37	1.21	101	.18	4	1.85	.01	.06	1
L325 0+480W	1	19	17	87	.1	35	11	1055	2.98	2	5	ND	5	45	.2	3	2	39	1.27	.042	22	43	2.02	160	.17	7	2.20	.02	.07	1
L325 0+440W	1	51	26	139	.5	38	28	3043	2.82	4	5	ND	1	51	2.3	2	2	41	1.17	.105	27	38	.86	354	.10	5	1.72	.01	.11	1
L325 0+400W	1	40	13	82	1.9	19	13	1703	1.58	4	9	ND	1	84	.6	2	2	19	3.75	.250	97	16	.28	396	.02	4	1.30	.01	.04	1
L325 0+360W	1	11	5	28	.1	3	1	77	.37	2	5	ND	1	8	.2	2	2	10	.24	.014	7	5	.10	45	.06	2	.39	.01	.02	2
L325 0+320W	1	17	29	96	.1	22	10	489	3.03	10	5	ND	3	11	.2	2	2	54	.25	.029	13	40	1.50	112	.16	6	1.97	.01	.07	1
L325 0+280W	1	65	12	121	.1	28	13	1296	2.84	4	5	ND	1	56	1.3	2	2	44	2.38	.097	13	37	.56	212	.16	5	1.34	.01	.05	1
L325 0+240W	1	30	3	143	.1	10	3	570	.74	2	5	ND	1	106	1.6	2	2	11	5.29	.107	5	10	.15	279	.04	6	.51	.01	.02	1
L325 0+200W	1	24	11	131	.2	28	14	2081	2.84	3	5	ND	5	37	.6	2	2	27	1.28	.063	15	29	1.31	166	.12	9	1.69	.01	.12	1
L325 0+160W	1	60	12	145	.4	32	14	1280	3.17	11	5	ND	1	54	.9	3	2	46	1.67	.082	25	32	.84	216	.14	5	1.78	.02	.09	1
L325 0+120W	1	32	10	89	.2	20	10	514	4.42	10	5	ND	2	13	.2	2	2	93	.35	.061	6	29	.79	98	.27	4	1.57	.01	.09	1
L325 0+80W	1	31	8	55	.1	24	8	315	2.52	6	5	ND	2	17	.2	3	2	49	.33	.053	10	32	.63	112	.17	3	1.33	.01	.07	1
L325 0+40W	1	26	15	82	.1	22	9	319	4.01	16	5	ND	3	11	.2	2	4	73	.16	.028	8	33	.68	65	.25	2	1.75	.01	.08	1
L325 0+00W	1	21	11	50	.4	19	6	167	2.14	2	5	ND	1	14	.2	2	3	51	.18	.025	7	25	.44	93	.14	2	1.13	.01	.05	1
L400 0+1000W	1	129	15	239	.7	45	10	829	2.52	9	8	ND	1	151	.5	2	2	27	3.51	.131	173	31	.53	152	.06	3	1.94	.01	.10	1
L400 0+960W	1	41	6	122	.2	13	3	162	1.18	2	5	ND	1	92	.3	2	2	11	1.81	.141	37	15	.12	128	.04	2	.64	.01	.04	1
L400 0+920W	1	18	4	168	.2	6	2	154	.65	2	5	ND	1	93	.2	2	2	5	1.78	.114	14	5	.06	114	.02	10	.38	.01	.09	1
L400 0+880W	1	13	10	62	.1	6	2	91	.75	2	5	ND	1	22	.2	2	2	13	.36	.075	11	10	.08	77	.05	2	.46	.02	.05	2
L400 0+840W	1	10	3	165	.1	3	1	91	.37	2	5	ND	1	185	.2	2	2	7	4.21	.067	2	4	.05	59	.02	5	.25	.01	.02	1
L400 0+800W	1	19	2	120	.2	8	2	502	.22	2	5	ND	1	189	.6	2	2	4	6.15	.072	9	3	.05	173	.01	7	.27	.01	.02	1
L400 0+760W	1	29	11	157	.1	19	8	722	1.99	2	5	ND	1	85	.7	2	2	27	2.77	.137	13	30	.50	222	.07	3	1.25	.01	.07	1
L400 0+720W	1	41	8	122	.4	25	6	1027	1.46	2	6	ND	1	83	.3	2	2	17	2.42	.108	106	18	.38	244	.05	3	1.19	.02	.05	1
L400 0+680W	1	22	11	100	.1	30	10	683	2.68	6	5	ND	2	33	.2	2	2	38	.67	.067	16	45	1.11	186	.11	2	1.63	.01	.05	1
L400 0+640W	1	13	10	210	.1	17	6	356	1.42	2	5	ND	1	56	.3	2	2	20	1.64	.060	9	24	.56	137	.06	2	.87	.01	.03	1
L400 0+600W	1	23	18	197	.1	15	4	753	.83	2	5	ND	1	71	.4	2	2	10	3.12	.125	21	10	.21	589	.02	3	.59	.01	.07	1
L400 0+560W	1	69	9	151	.8	41	10	1923	2.21	11	6	ND	1	99	.7	2	2	26	3.58	.206	23	28	.57	447	.05	2	1.77	.01	.06	1
L400 0+520W	2	15	12	29	.2	5	2	175	.91	2	5	ND	1	11	.2	2	2	22	.34	.031	6	8	.09	63	.09	2	.47	.01	.02	2
L400 0+480W	1	14	12	54	.1	8	3	112	1.17	2	5	ND	1	14	.2	2	2	28	.16	.029	8	20	.22	49	.10	2	.79	.01	.04	2
L400 0+440W	1	20	13	73	.1	26	8	452	3.95	12	5	ND	2	14	.2	2	3	57	.20	.019	8	39	.89	97	.22	3	1.84	.01	.08	1
L400 0+400W	1	27	18	101	.1	35	13	1361	3.69	16	5	ND	5	36	.2	2	2	37	1.04	.043	20	37	1.69	168	.14	2	2.38	.01	.08	1
L400 0+360W	1	13	12	96	.1	20	10	1187	3.29	2	5	ND	5	28	.2	2	2	44	.64	.019	13	37	1.91	89	.17	2	2.38	.01	.09	1
STANDARD C	17	57	38	131	7.0	69	31	1028	3.88	42	22	7	36	52	18.3	15	22	55	.50	.084	37	57	.90	179	.08	32	1.87	.05	.14	11

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
L400 0+320W	1	44	11	81	.6	20	5	625	1.58	2	5	ND	1	95	.4	2	2	19	3.81	.151	42	20	.46	245	.04	4	1.69	.01	.03	1
L400 0+280W	1	12	15	69	.1	12	6	431	2.75	5	5	ND	2	18	.2	2	3	77	.46	.035	11	31	.56	259	.28	2	1.07	.01	.06	1
L400 0+240W	1	14	11	74	.1	15	5	395	2.35	4	5	ND	1	18	.2	2	3	49	.32	.041	13	49	.90	148	.16	5	1.33	.01	.04	1
L400 0+200W	1	16	16	177	.1	25	14	797	4.93	7	5	ND	3	14	.8	3	2	127	.18	.056	14	57	.66	133	.56	2	1.57	.01	.07	1
L400 0+160W	1	9	17	97	.1	21	8	398	3.32	9	5	ND	2	15	.3	3	2	76	.21	.038	10	41	.81	138	.32	2	1.49	.01	.06	1
L400 0+120W	1	16	15	92	.1	14	7	348	3.72	4	5	ND	1	11	.2	2	3	92	.16	.051	7	30	.48	115	.24	2	1.09	.01	.05	1
L400 0+80W	1	79	15	115	.2	29	15	1293	4.07	194	5	ND	1	8	.2	4	2	45	.10	.093	9	23	.58	59	.06	4	1.16	.01	.04	1
L400 0+40W	1	25	13	74	.1	32	10	349	4.63	14	5	ND	2	20	.2	2	2	100	.23	.026	7	46	.75	104	.27	2	1.99	.01	.05	1
L400 0+00W	1	18	11	57	.1	14	5	335	2.89	8	5	ND	1	13	.2	2	2	81	.17	.029	7	25	.43	54	.21	2	1.02	.01	.04	1
L525 0+1000W	1	85	10	139	.3	34	9	666	2.52	5	6	ND	1	132	.8	2	2	38	3.48	.132	33	37	.60	213	.08	10	1.81	.02	.08	1
L525 0+960W	1	70	6	66	1.2	25	6	358	1.32	3	7	ND	1	184	.4	2	2	19	4.88	.150	15	52	.25	272	.04	5	1.17	.01	.02	1
L525 0+940W	1	85	9	129	.5	41	16	1335	3.18	5	5	ND	1	86	.8	2	2	46	2.35	.110	25	46	.72	210	.13	8	2.03	.02	.08	1
L525 0+920W	1	54	10	138	.5	34	16	1561	2.49	9	5	ND	1	78	.5	2	2	36	1.95	.108	20	40	.66	240	.10	8	1.60	.02	.10	1
L525 0+880W	2	16	2	149	.2	7	2	817	.30	2	5	ND	1	175	.7	2	2	4	5.62	.077	3	4	.08	127	.01	14	.24	.01	.03	1
L525 0+840W	1	69	15	94	.1	70	25	1006	4.58	14	5	ND	8	29	.2	2	2	64	.59	.057	30	51	2.15	117	.15	7	3.06	.02	.07	1
L525 0+800W	1	7	25	35	.1	6	3	127	1.39	3	5	ND	2	10	.2	2	4	55	.11	.018	11	21	.20	53	.42	2	.84	.01	.04	2
L525 0+760W	1	22	8	41	.3	10	2	37	.82	2	5	ND	1	84	.6	2	2	14	1.94	.051	6	12	.08	175	.10	5	.48	.01	.02	2
L525 0+720W	1	15	10	89	.1	16	7	358	2.39	5	5	ND	2	26	.2	2	3	52	.65	.027	9	32	.61	134	.25	2	1.13	.01	.08	1
L525 0+680W	1	51	9	134	.2	35	10	488	2.89	2	5	ND	2	60	.3	2	2	43	1.78	.091	33	40	.92	183	.15	5	1.85	.02	.11	1
L525 0+620W	1	46	12	87	.3	47	15	2385	2.82	8	5	ND	1	66	.6	2	2	39	2.21	.111	18	49	.88	319	.10	4	1.84	.01	.06	1
L525 0+580W	1	19	4	215	.1	21	5	484	.74	2	5	ND	1	69	.4	2	2	10	2.29	.071	10	11	.18	195	.03	11	.54	.01	.03	1
L525 0+540W	2	16	13	53	.1	13	3	282	1.38	5	5	ND	1	26	.2	2	2	28	.82	.044	8	21	.37	92	.10	4	.78	.01	.05	1
L525 0+500W	3	63	11	110	1.1	31	10	905	2.75	13	5	ND	1	48	.2	2	2	33	1.35	.159	36	28	.74	132	.06	9	1.31	.01	.04	1
L525 0+460W	1	22	5	81	.2	7	2	232	.49	2	5	ND	1	116	.2	2	2	6	5.86	.102	6	5	.09	131	.01	8	.30	.01	.02	1
L525 0+420W	1	17	13	82	.1	12	7	1332	1.69	85	5	ND	1	25	.5	2	2	21	.88	.095	7	18	.29	115	.04	4	.85	.02	.03	1
L525 0+380W	1	15	9	95	.1	127	30	371	4.86	3	5	ND	1	12	.5	2	2	116	.52	.021	2	283	2.00	106	.25	2	2.89	.01	.03	1
L525 0+340W	1	17	19	104	.1	47	17	467	4.49	5	5	ND	4	24	.2	2	2	62	.35	.019	10	78	1.41	91	.24	2	2.18	.01	.06	1
L525 0+300W	1	40	4	89	.1	12	2	295	.49	2	5	ND	1	121	.3	2	2	5	6.78	.074	22	5	.06	198	.01	8	.70	.01	.01	1
L525 0+260W	1	103	24	89	.4	34	6	1612	1.92	12	5	ND	1	117	.7	2	2	11	5.16	.160	59	14	.19	186	.02	7	1.31	.01	.02	1
L525 0+220W	1	146	7	93	.7	26	6	800	1.79	9	8	ND	1	86	.3	2	2	23	3.86	.173	100	25	.28	157	.05	7	1.64	.01	.04	1
L525 0+180W	1	72	6	71	.3	17	4	1413	.70	2	5	ND	1	102	.9	2	3	9	5.01	.115	26	9	.07	188	.02	9	.81	.02	.02	1
L525 0+140W	2	49	6	108	.6	18	8	4927	1.13	2	5	ND	1	102	2.2	2	2	12	3.93	.188	20	13	.10	462	.03	4	1.19	.01	.02	1
L525 0+100W	1	15	9	91	.1	23	9	613	3.55	3	5	ND	2	15	.2	2	2	85	.35	.035	6	64	1.25	98	.27	2	2.07	.01	.05	1
L525 0+60W	1	23	12	96	.1	28	14	871	3.81	9	5	ND	2	24	.2	2	2	76	.43	.068	10	51	1.15	206	.19	2	2.00	.01	.06	1
L525 0+20W	2	52	17	112	.1	29	22	1001	4.76	77	5	ND	3	30	.2	2	2	64	.69	.073	19	34	1.51	92	.16	6	1.99	.01	.10	1
L525 0+00W	2	314	9	148	.5	47	8	1269	1.57	48	6	ND	1	110	.8	2	2	16	4.12	.235	76	20	.22	175	.03	6	1.75	.01	.02	1
STANDARD C	17	58	38	131	7.3	70	31	1031	3.85	38	21	7	37	53	18.9	15	22	56	.50	.085	37	57	.90	179	.09	32	1.86	.05	.14	11

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
L650 0+1020W	1	45	12	91	.2	32	10	524	2.42	4	5	ND	2	59	.2	2	2	37	1.90	.082	19	31	.76	143	.10	9	1.56	.02	.09	2
L650 0+960W	1	30	2	137	.1	14	3	154	.59	2	5	ND	1	96	.4	2	2	8	2.56	.081	12	6	.11	133	.02	3	.56	.01	.04	1
L650 0+920W	2	24	21	81	.2	39	12	379	3.87	8	5	ND	4	16	.2	2	3	47	.36	.049	12	44	.96	119	.13	3	2.08	.01	.09	1
L650 0+880W	2	13	23	66	.1	15	8	364	3.87	7	5	ND	3	10	.5	2	9	120	.13	.026	8	30	.30	50	.42	2	1.06	.01	.06	1
L650 0+840W	1	8	10	46	.1	9	5	189	1.97	2	5	ND	2	11	.2	2	7	50	.15	.018	7	20	.35	58	.18	5	1.03	.01	.05	1
L650 0+800W	2	13	27	60	.1	15	6	294	2.88	6	5	ND	3	10	.8	2	2	65	.13	.032	9	30	.48	62	.30	2	1.11	.01	.05	1
L650 0+760W	2	9	16	46	.1	13	6	237	2.25	2	5	ND	2	8	.2	2	3	52	.14	.023	7	22	.47	66	.19	3	1.10	.01	.05	1
L650 0+720W	2	14	11	59	.1	17	7	316	2.57	6	5	ND	2	16	.2	2	7	50	.39	.025	7	27	.71	78	.17	3	1.16	.01	.07	1
L650 0+680W	1	56	19	131	.4	31	11	459	3.30	2	5	ND	2	48	.3	3	4	48	1.68	.100	33	40	.96	171	.12	9	1.98	.02	.11	2
L650 0+640W	1	19	14	76	.3	16	7	366	2.04	8	5	ND	2	17	.3	2	2	39	.48	.049	9	22	.48	75	.10	8	.97	.01	.06	2
L650 0+600W	2	29	26	86	.3	29	8	366	2.57	4	5	ND	1	16	.2	2	4	42	.32	.041	10	32	.72	112	.09	5	1.59	.01	.07	2
L650 0+560W	3	44	11	113	.7	25	3	91	1.57	2	5	ND	1	51	.2	2	2	11	2.21	.135	41	10	.18	208	.01	6	.82	.01	.04	2
L650 0+520W	5	54	27	54	.7	20	8	502	2.35	3	5	ND	2	27	.8	2	2	34	.88	.083	29	26	.56	101	.08	4	1.05	.01	.06	2
L650 0+480W	1	31	18	71	.5	14	8	1418	1.25	8	7	ND	1	90	.2	2	3	16	4.55	.137	16	15	.27	208	.03	5	.84	.01	.03	2
L650 0+440W	1	28	52	87	.1	26	16	3035	3.26	15	5	ND	1	39	.9	2	2	42	1.43	.145	22	25	.43	236	.03	5	1.76	.01	.04	2
L650 0+400W	1	20	45	105	.2	21	11	1885	3.21	2	5	ND	5	28	.3	2	2	25	.90	.045	13	17	.52	170	.06	2	1.13	.01	.06	1
L650 0+360W	1	42	26	159	.1	121	22	548	4.97	10	5	ND	2	103	1.7	2	2	72	1.33	.038	6	135	2.02	262	.21	2	3.13	.01	.10	1
L650 0+320W	1	16	65	94	.1	29	16	2320	4.47	80	5	ND	3	37	.2	2	11	10	1.20	.053	20	14	.39	113	.02	5	.81	.01	.02	2
L650 0+280W	1	16	19	69	.2	11	6	504	2.21	12	5	ND	1	15	.8	2	2	52	.37	.031	12	20	.12	120	.26	2	.63	.01	.04	1
L650 0+240W	2	15	34	96	.1	16	8	421	3.36	7	5	ND	2	12	.8	2	7	78	.21	.048	9	32	.80	103	.25	4	1.73	.01	.07	1
L650 0+200W	2	23	13	71	.3	18	7	240	2.45	4	5	ND	1	19	.9	2	2	56	.40	.041	10	30	.37	133	.14	3	1.31	.01	.08	1
L650 0+160W	2	9	11	66	.1	12	5	219	1.77	2	5	ND	2	10	1.0	2	3	57	.15	.024	8	26	.34	55	.32	4	.80	.01	.04	1
L650 0+120W	2	14	24	102	.1	9	5	226	1.99	2	5	ND	1	16	.2	2	5	50	.20	.036	11	25	.28	100	.24	4	.82	.01	.06	1
L650 0+80W	2	135	24	140	1.0	47	20	1803	4.44	14	5	ND	3	96	1.5	3	6	38	2.47	.243	68	31	.40	330	.04	5	3.70	.01	.04	1
L650 0+40W	3	59	35	155	.1	21	38	2060	5.67	16	5	ND	10	22	1.8	2	2	89	.47	.058	24	36	.56	128	.41	6	1.97	.01	.05	2
L650 0+00W	1	32	9	106	.1	27	18	793	3.13	10	5	ND	2	30	.5	2	2	49	.93	.061	11	27	.68	137	.14	11	1.44	.01	.10	2
STANDARD C	18	57	38	132	7.2	67	31	1033	4.04	39	16	6	36	47	18.6	15	18	56	.52	.089	36	56	.94	173	.09	34	1.92	.06	.14	11

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
18553 D	3	135	17	75	.1	54	21	523	4.27	3	6	ND	14	81	.4	2	2	22	3.67	.034	26	26	2.02	33	.02	3	1.53	.01	.33	1	4
18554 D	19	455	5	15	.1	16	9	680	2.96	23	5	ND	2	140	.4	2	2	7	10.09	.052	2	6	.40	13	.06	4	.52	.02	.06	1	7
18555 D	4	98	4	47	.1	13	8	305	2.06	4	5	ND	1	355	.2	2	2	45	2.67	.022	2	13	1.83	96	.12	4	1.77	.03	.47	1	3
18556 D	2	1402	14	104	.7	22	13	877	6.21	27	5	ND	1	191	1.4	2	2	13	9.63	.029	3	14	1.25	13	.05	2	1.17	.01	.12	1	3
18557 D	1	87	9	54	.1	23	7	657	2.18	4	5	ND	8	194	.2	2	2	19	5.71	.026	16	20	1.40	20	.04	2	1.41	.01	.14	1	1
18558 D	1	191	9	80	.2	30	9	431	2.68	2	6	ND	9	59	.2	2	2	54	2.83	.048	16	41	2.43	84	.14	2	2.23	.02	.54	1	1
18559 D	1	595	5	56	.3	27	13	447	3.68	8	5	ND	5	27	.5	2	2	40	1.99	.032	8	32	1.95	65	.09	2	1.79	.03	.49	1	5
18560 D	1	117	8	31	.3	11	6	249	1.49	2	5	ND	5	33	.2	2	3	20	2.06	.037	6	19	.94	22	.07	2	.77	.03	.14	2	1
18561 D	10	295	2	4	.1	5	6	196	.74	3	6	ND	3	60	.2	2	2	10	2.39	.046	7	4	.11	1	.10	2	.29	.01	.01	1	1
18562 D	2	453	3	4	.2	6	8	637	5.83	9	5	ND	2	19	.4	2	3	16	6.43	.019	2	9	.04	1	.04	2	.42	.01	.01	1	7
18563 D	1	30	3	3	.1	3	1	280	1.55	2	13	ND	2	46	.2	2	2	12	4.26	.048	4	6	.08	1	.05	4	.28	.01	.01	1	3
STANDARD C/AU-R	18	56	39	131	7.8	73	31	1041	3.91	39	15	7	38	52	18.5	15	22	58	.50	.089	39	59	.90	181	.09	32	1.89	.05	.14	11	510

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb
18551 D	4	10	2	2	.1	12	1	94	.37	4	5	ND	1	5	.2	2	2	1	.26	.001	2	10	.01	2	.01	2	.02	.01	.01	1	1
18552 D	2	5	5	22	.1	14	2	512	.94	3	5	ND	2	41	.2	2	2	3	2.06	.005	2	8	.39	30	.01	7	.35	.01	.06	1	1
18564 D	2	8144	10	114	5.2	32	53	548	12.57	29	5	ND	3	30	4.1	2	3	5	5.34	.046	2	6	.07	3	.07	2	.25	.01	.01	1	300
18565 D	1	7307	8	108	5.1	27	43	878	7.81	51	5	ND	2	73	2.7	2	2	5	5.28	.040	2	7	.16	5	.05	2	.34	.02	.01	1	330
18566 D	2	7811	2	132	2.3	10	11	570	1.96	8	5	ND	2	88	2.7	2	2	6	6.34	.042	8	4	.29	16	.04	12	.30	.06	.01	1	57
18567 D	22	1127	3	44	1.1	10	24	2036	6.53	56	5	ND	2	201	1.5	3	2	8	10.11	.039	3	5	2.58	20	.01	2	.33	.01	.08	1	50
18568 D	16	1214	4	55	.9	7	10	1207	3.72	21	5	ND	1	160	.4	8	2	10	5.92	.048	5	5	2.10	63	.01	6	.46	.01	.20	1	48
STANDARD C/AU-R	18	58	40	131	7.2	71	32	1029	3.93	42	20	7	37	53	18.4	16	19	56	.50	.087	37	58	.91	179	.09	34	1.90	.05	.14	11	510

852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6
PHONE(604)253-3158 FAX(604)253-1716 DATE REPORT MAILED: July 5/90

GEOCHEMICAL ANALYSIS CERTIFICATE

Peter A. Christopher PROJECT RAM 90-1 FILE # 90-1795R Page 1
3707 W. 34th Ave, Vancouver BC

SAMPLE#	AU* ppb
L0 0+440W	1
L0 0+400W	2
L0 0+360W	10
L0 0+320W	1
L0 0+160W	1
L100 0+1220W	1
L100 0+940W	3
L100 0+860W	1
L100 0+540W	4
L100 0+380W	1
L100 0+280W	1
L100 0+120W	1
L100 0+80W	2
L100S 1440W	1
L100S 1400W	2
L100S 1360W	1
L100S 1320W	6
L100S 1200W	1
L100S 920W	2
L100S 520W	2
L100S 240W	5
L100S 80W	1
L100S 40W	4
L200S 1500W	1
L200S 1460W	1
L200S 1420W	4
L200S 1300W	2
L200S 940W	4
L200S 620W	3
L200S 580W	2
L200S 460W	1
L200S 420W	2
L200S 380W	2
L200S 340W	2
L200S 260W	3
L200S 220W	2
STANDARD AU-S	49

- SAMPLE TYPE: Soil Pulp AU* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

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

SAMPLE#	AU* ppb
L325 0+760W	3
L325 0+440W	8
L325 0+400W	4
L325 0+320W	1
L325 0+160W	2
L325 0+120W	2
L325 0+40W	3
L400 0+1000W	4
L400 0+560W	3
L400 0+440W	2
L400 0+400W	3
L400 0+320W	3
L400 0+80W	1
L400 0+40W	1
L525 0+960W	1
L525 0+940W	2
L525 0+920W	2
L525 0+840W	2
L525 0+500W	4
L525 0+420W	1
L525 0+260W	5
L525 0+220W	5
L525 0+140W	1
L525 0+20W	5
L525 0+00W	2
L650 0+560W	1
L650 0+520W	1
L650 0+480W	1
L650 0+440W	2
L650 0+360W	1
L650 0+320W	1
L650 0+280W	2
L650 0+80W	3
L650 0+40W	1
L650 0+00W	1
STANDARD AU-S	51

242 SAMPLES

ELEMENT	Min.	Max.	Mean	Med.	Std D	
Mo	1	5	1	1	1	ppm
Cu	7	314	35	24	36	ppm
Pb	2	65	15	13	9	ppm
Zn	28	239	98	92	36	ppm
Ag	0.1	1.9	0.2	0.1	0.2	ppm
Ni	3	187	27	25	19	ppm
Co	1	60	11	10	7	ppm
Mn	37	6719	936	683	850	ppm
Fe	0.22	5.67	2.89	3.06	1.22	%
As	2	194	8	5	16	ppm
U	5	15	5	5	1	ppm
Au	2	2	2	2	0	ppm
Th	1	17	2	2	2	ppm
Sr	7	189	50	33	41	ppm
Cd	0.2	2.4	0.4	0.2	0.4	ppm
Sb	2	4	2	2	0	ppm
Bi	2	11	2	2	1	ppm
V	4	138	48	48	26	ppm
Ca	0.10	6.78	1.38	0.67	1.48	%
P	0.014	0.306	0.074	0.059	0.053	%
La	2	173	21	14	21	ppm
Cr	3	413	38	33	38	ppm
Mg	0.05	5.84	0.90	0.72	0.77	%
Ba	45	860	169	140	110	ppm
Ti	0.01	0.67	0.16	0.16	0.11	%
B	2	18	6	5	3	ppm
Al	0.24	5.15	1.68	1.62	0.82	%
Na	0.01	0.06	0.01	0.01	0.01	%
K	0.01	1.16	0.08	0.06	0.09	%
W	1	3	1	1	0	ppm

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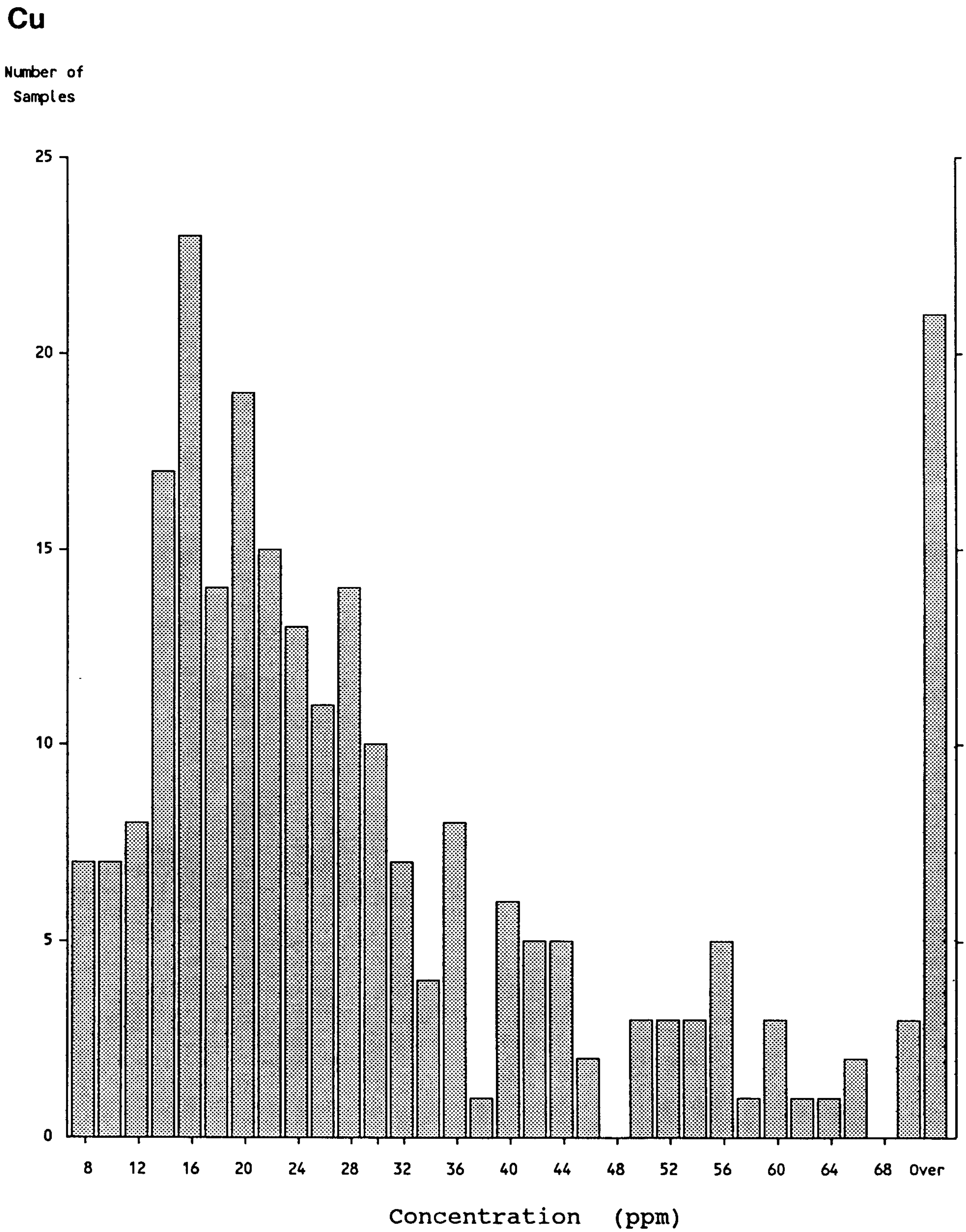

242 Samples

Maximum: 314
Minimum: 7

Mean: 35
Median: 24
Standard Deviation: 36

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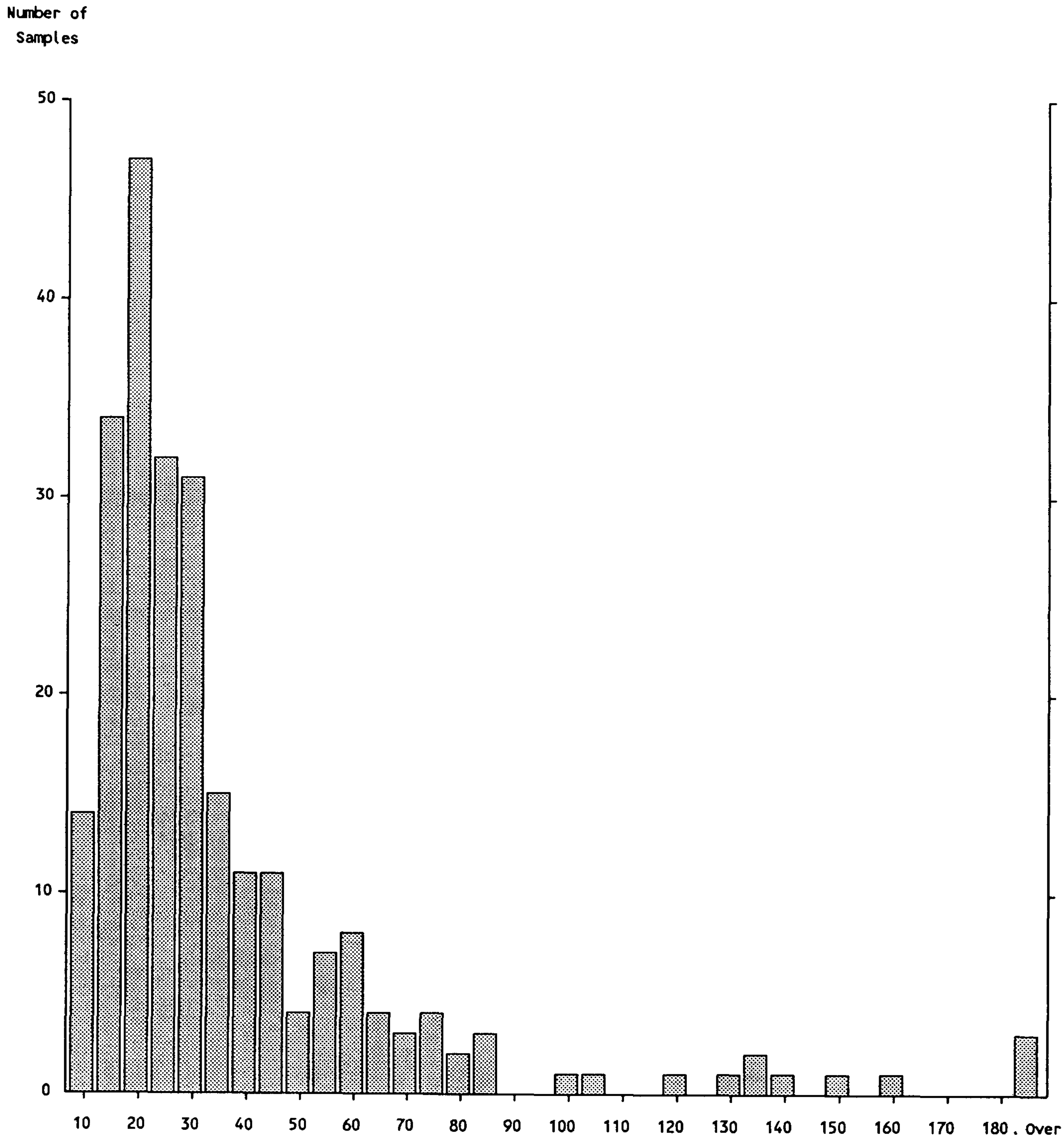
Cu

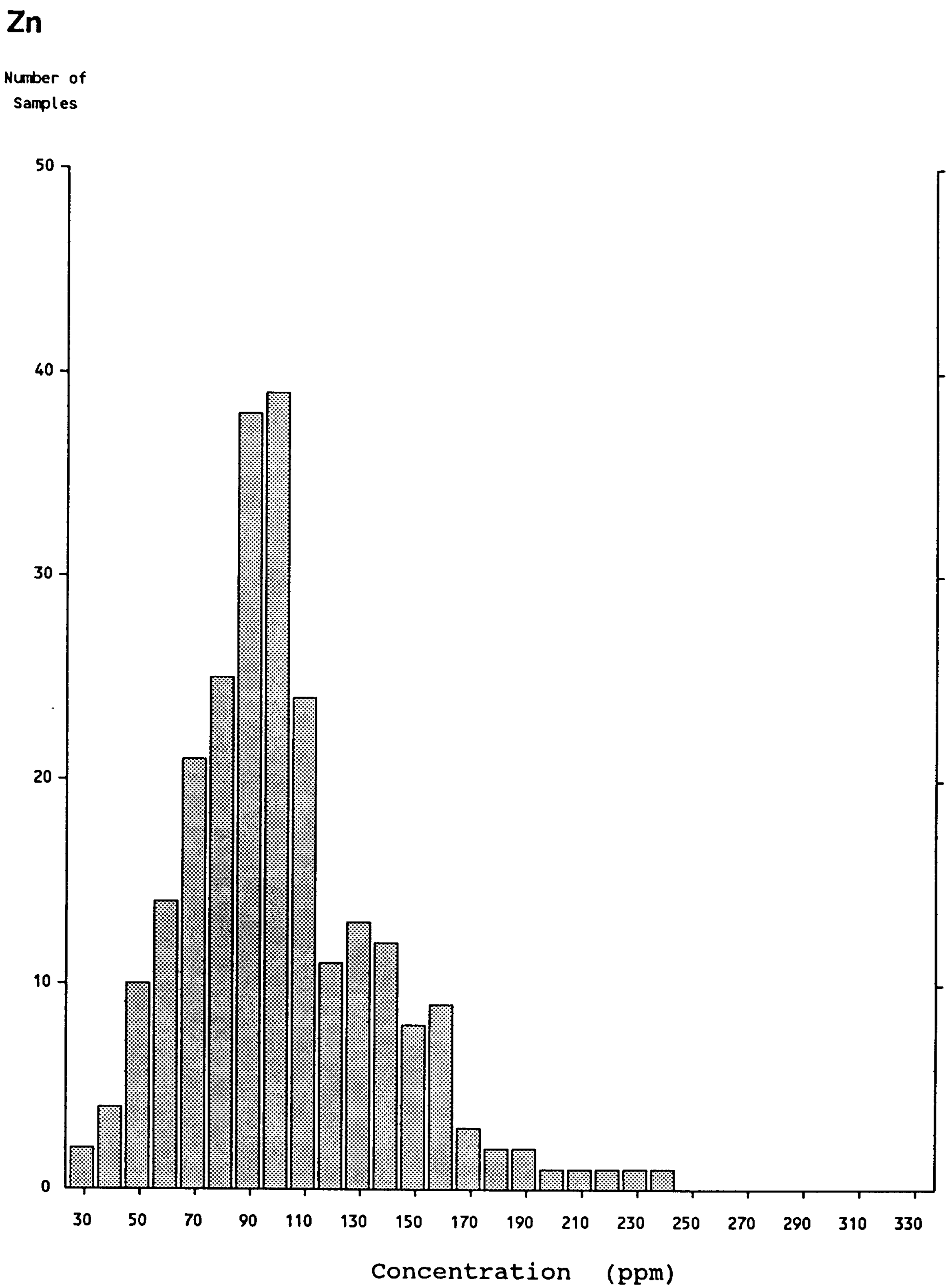


242 Samples

Maximum: 314
Minimum: 7

Mean: 35
Median: 24
Standard Deviation: 36

PETER CHRISTOPHER



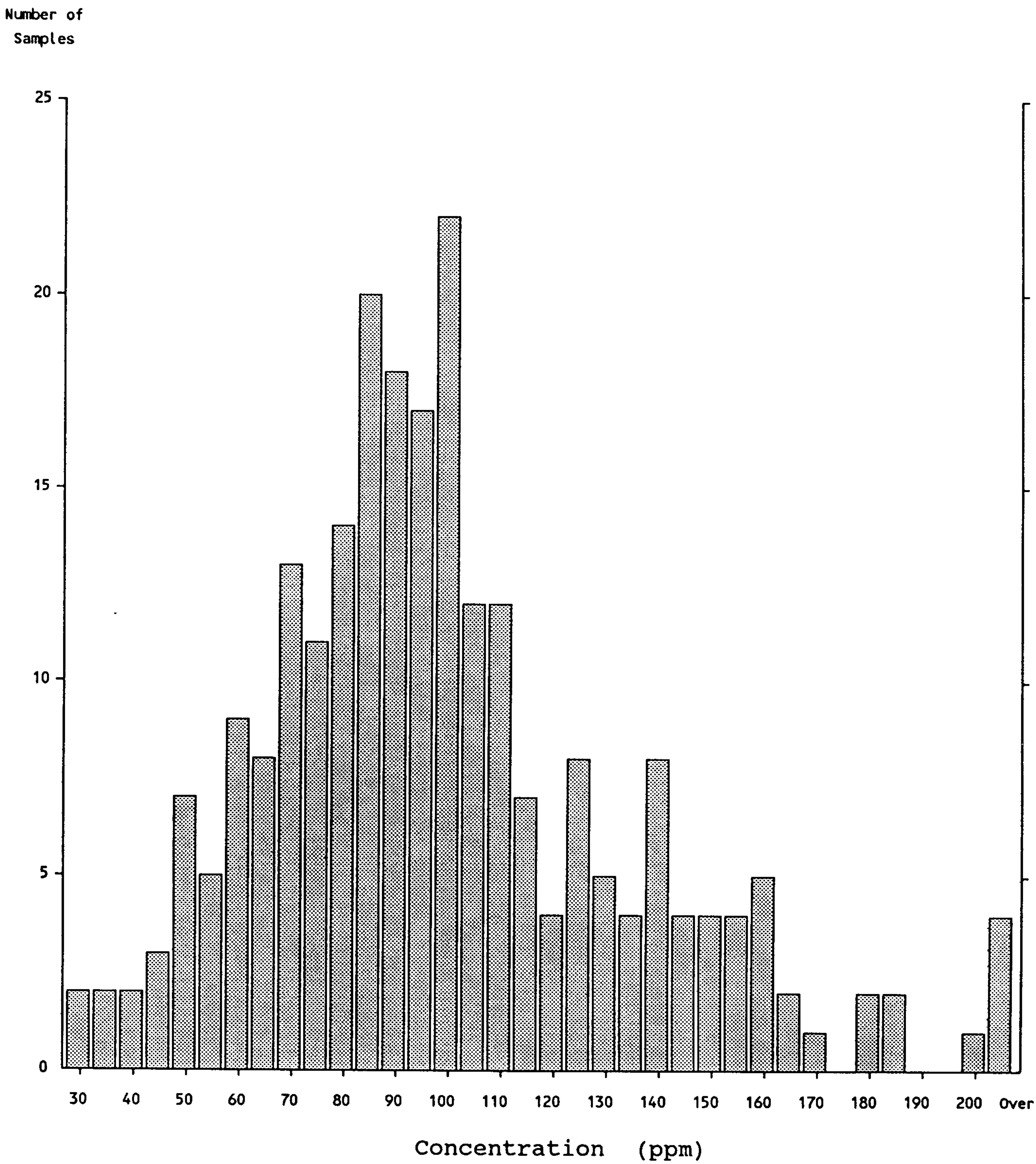
242 Samples

Maximum: 239
Minimum: 28

Mean: 98
Median: 92
Standard Deviation: 36

PETER CHRISTOPHER

Zn

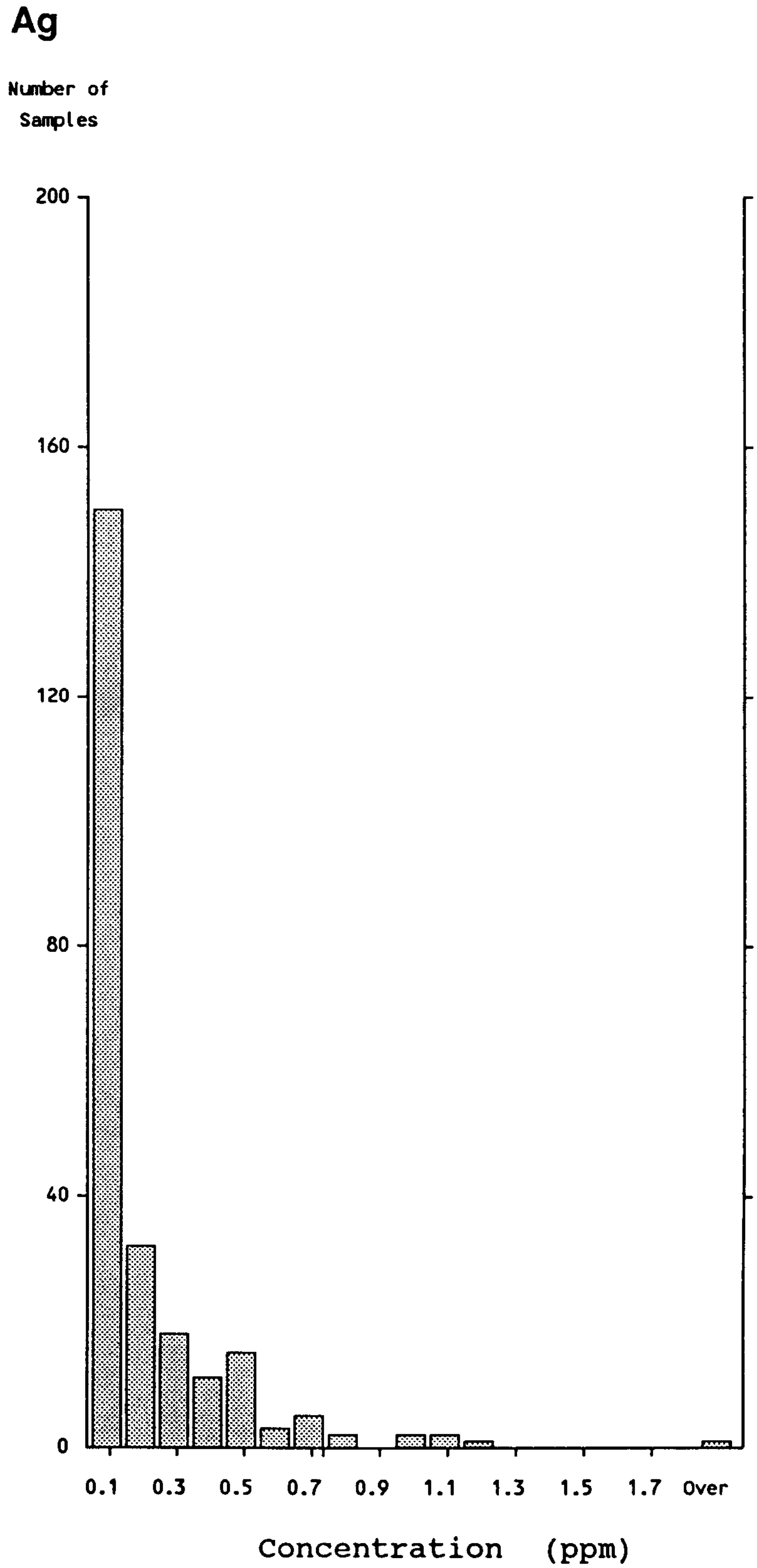


242 Samples

Maximum: 239
Minimum: 28

Mean: 98
Median: 92
Standard Deviation: 36

PETER CHRISTOPHER

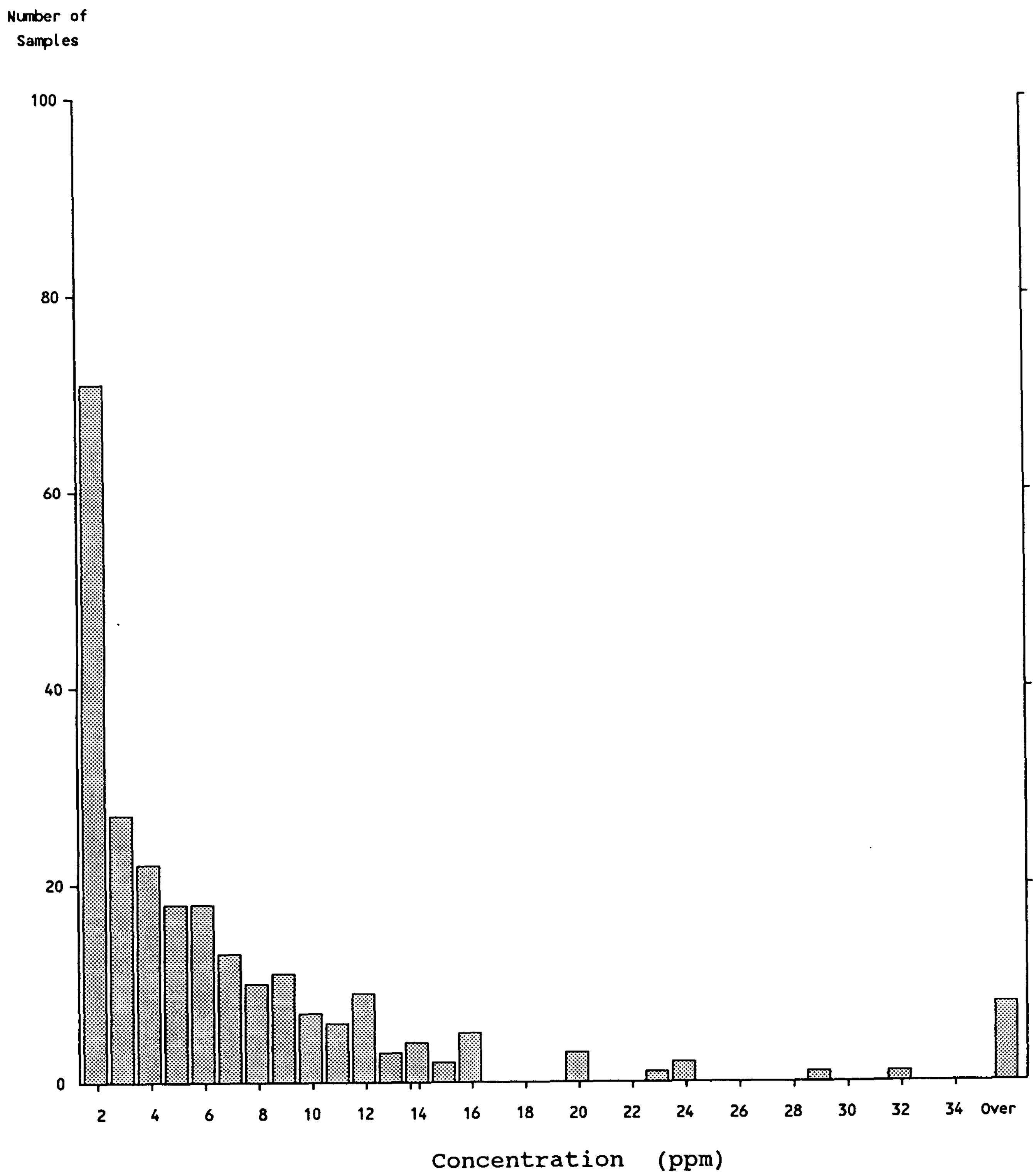


242 Samples   Maximum: 1.9   Minimum: 0.1

Mean: 0.2
Median: 0.1
Standard Deviation: 0.2

PETER CHRISTOPHER

As



242 Samples
Maximum: 194
Minimum: 2

Mean: 8
Median: 5
Standard Deviation: 16

APPENDIX C - COST STATEMENT

Mobilization/Demobalization		$ 500.00
Personnel		
June 5 thru 12/90		
Peter Christopher PhD., P.Eng. Geologist	8 days @ $400/day	3200.00
Gerry Hayne B.Sc. Geophysical Operator	8 days @ $250/day	2000.00
Don Williams Prospector/Sampler	7 days @ $200/day	1400.00
Kirk e Kraljevic Prospector/Sampler	7 daus @ $200/day	1400.00
Room & Board 30 man days @ $50 ea.		1500.00
Vehicle Rentals		
4 x 4 Truck 8 days @ $70/day		560.00
500 km @ 0.20ea		100.00
Rentals Geophysical Eq. @ $50/Day x 8 days		400.00
SBX 11 Radio $20/day x 8 days		160.00
		11220.00

Disbursements (Cost + 10%)

Airfares	806.60	
Taxi	14.00	
Helicopter	2342.80	
Expediting	250.00	
Maps	13.78	
Geochemical Charges		
Invoice 90-1795	1104.70	
Invoice 90-1795R	319.50	
Drafting	587.82	
Phone	40.00	
Camp Fuel	10.00	
Truck Fuel	20.00	
Lamp Mantles	2.02	
Rope	8.54	
Wire	4.44	
Nails	4.00	
Topo chain 8 @ $3.71ea.	29.68	
250 soil bags @ .20ea	50.00	
100 rock bags @ .24ea	24.00	
Drafting Pad	14.58	
3 boxes flagging 16.43ea	49.29	
Tape 2 rolls 3.75ea	7.50	
Insect Repellent & Coils	10.00	
4 field books @ 3.10ea	12.40	
6 marking pens @ 1.50ea	9.00	
	5734.65+ 10%	6308.12

Copies, Binding, Word Processing		200.00
Report Writing		2000.00
	Sub Total	$ 19728.12
Management @ 15%		3000.00
	Total Cost	$ 22728.12

PROFESSIONAL ENGINEER PROVINCE P. A. Christopher

Peter A. Christopher P.Eng.
July 6, 1990

Peter Christopher & Associates Inc.
GEOLOGICAL & EXPLORATION SERVICES
3707 West 34th Ave., Vancouver, B.C. V6N 2K9
Office/Res: 263-6152

July 6, 1990

Arnica Resources Ltd.
320-1333 Johnston Street
Vancouver, B.C. V6H 3R9

Dear Sirs:

I Peter A. Christopher, Ph.D., P.Eng., hereby consent to the use of my report dated July 6, 1990 on the Ram Property, Atlin Mining Division, British Columbia, in any Filing Statement, Statement of Material Facts, or for assessment filing by Arnica Resources Ltd.

DATED at Vancouver, British Columbia, this 6th day of July, 1990.

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA P. A. Christopher

Peter A. Christopher, Ph.D., P.Eng.