NTS 93N/6
Lat 55°25'N
Long 125°12'W

# GEOLOGICAL and GEOCHEMICAL REPORT
on the
# HAL PROPERTY
Indata Lake area
Omineca Mining District
British Columbia



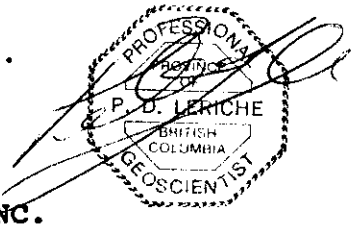
22,588

for

**SWANNELL MINERALS CORPORATION**
#602 - 510 W. Hastings Street
Vancouver, B.C., V6B 1L8
Tel: (604) 687-5257 Fax: (604) 687-0384

by

**Peter D. Leriche**, B.Sc.,P.Geo.
**Reg Faulkner**, M.Sc.,P.Geo.




**RELIANCE GEOLOGICAL SERVICES INC.**
241 East 1st Street
North Vancouver, B.C. V7L 1B4
Tel: (604) 984-3663 Fax: (604) 988-4653

20 October 1992

## SUMMARY

At the request of Swannell Minerals Corporation, Reliance Geological Services carried out an exploration program consisting of rock and soil sampling surveys, and geological mapping on the HAL property during July 1992.

The HAL property comprises six contiguous mineral claims totalling 116 units in the Indata Lake area, Omineca Mining Division, approximately 125 kilometers north-northwest of Fort St James, B.C. The property is accessible by helicopter.

The claims lie in the regionally extensive Mesozoic Quesnel Belt. In the general area, Triassic Takla volcanic rocks are intruded by Triassic-Jurassic alkaline stocks and the Cretaceous Hogem batholith. Alkalic plutons of the Quesnel Belt commonly host porphyry copper-gold deposits.

The claims are underlain by Triassic-Jurassic light grey aphanitic Takla andesite intruded by Phase I units of the Hogem Batholith consisting of granodiorite, monzodiorite, and monzonite.

Work in the early 1970's included a regional aeromagnetic survey, silt sampling, and soil sampling. A discontinuous north-west trending copper/molybdenum soil anomaly was outlined measuring 300 x 1500 meters. The property was then tested further by performing IP and magnetic surveys, and limited diamond drilling (1,139 feet).

In 1991, Swannell contracted prospecting, silt sampling (18), heavy mineral sampling (9) and rock sampling (5). No outcrop was located in the area of the previously defined soil anomaly.

In 1992, followup work by Swannell included reconnaissance survey grids, geological mapping over 20% of the property, and rock and soil sampling. No porphyry style mineralization was located, but more work remains to be done to test the porphyry potential.

Exploration targets which have been identified include:

a) Malachite infilled shear zones. All five samples collected in 1992 yielded copper results ranging from 1905 to 9230 ppm with associated gold and silver values.

b) A coincident copper/molybdenum soil anomaly on the Hal 6 claim.

c) A contact zone between Takla volcanics and Hogem batholith rock in the southeast property area.

Approximately 60% of the claim area remains to be investigated.

Further work, consisting of geological mapping and prospecting, soil sampling, hand trenching and blasting, and a ground magnetic survey, has been recommended.

In addition, grid establishment, reconnaissance geological mapping, and rock and soil sampling, has been recommended to expand the known copper anomaly and evaluate the mineral potential of the remainder of the property.

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HAL Property

## 1. INTRODUCTION

This report was prepared at the request of Swannell Minerals Corporation to describe and evaluate the results of a geological and geochemical program carried out by Reliance Geological Services on the HAL property in the Indata Lake area, Omineca Mining District, British Columbia.

The field work was undertaken for the purpose of following up on anomalous rock and soil geochemistry identified in earlier exploration programs and evaluating the potential of the property to host a porphyry copper/gold deposit.

Field work was carried out on July 30th and 31st, and August 1st, 1992, by Reg Faulkner (geologist), George King (geologist), John Fleishman (prospector), and Andrew Berry (prospector), under the supervision of Peter Leriche, P.Geo., and Mark Rebagliati, P.Eng.

This report is based on published and unpublished information and the maps, reports and field notes of the crew listed above.

## 2. LOCATION, ACCESS and PHYSIOGRAPHY

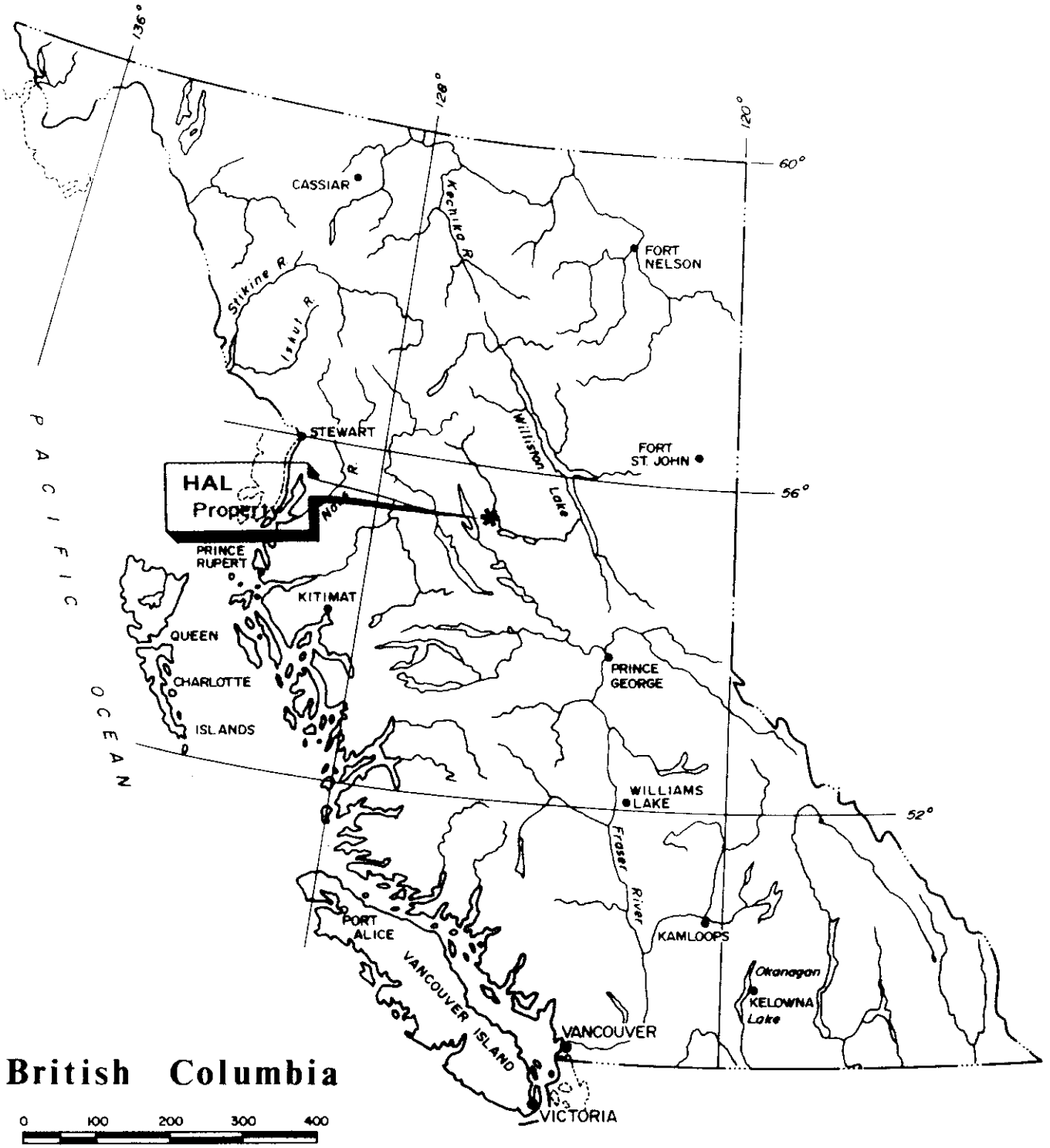
The HAL property is situated in the Omineca Mining Division in the Indata Lake area, approximately 125 kilometers north-northwest of Fort St James (Figures 1 and 2).

The claims are located on Map Sheet NTS 93N/6, at latitude 55° 25' North and longitude 125° 12' West, and between UTM 6237500 m and 6243500 m North, and UTM 330500 m and 338500 m East.

Access is via the Pinchi Lake Road from Fort St James to the Leo Creek logging road (approximately 35 km), then north on the Leo Creek - Driftwood logging road approximately 80 kilometers to a lodge and seasonal helicopter base at the north end of Tchentlo Lake. From there, access is by helicopter north for 20 kilometers to the HAL claims. Alternative access is via float plane to Tchentlo or Indata Lakes.

The claims lie in the Kwanika range of the Omineca Mountains. Terrain is moderate with slopes rising from approximately 1000 meters to 1800 meters. The area is forested with spruce, pine and scrub fir, with alpine vegetation occurring above tree-line (approximately 1600 meters).

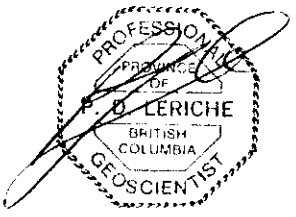
Recommended work season is mid-June to the end of October.




**British Columbia**

0 100 200 300 400

kilometres




| SWANNELL MINERALS CORPORATION | | |
|---|---|---|
| **HAL PROPERTY** | | |
| **OMINECA M.D.** | | |
| *General Location Map* | | |
| Scale noted above | N.T.S | Drawn by |
| Date Oct.92 | Geologist | Figure 1 |
| RELIANCE GEOLOGICAL SERVICES INC. | | |

## 3. PROPERTY STATUS (Figure 2)

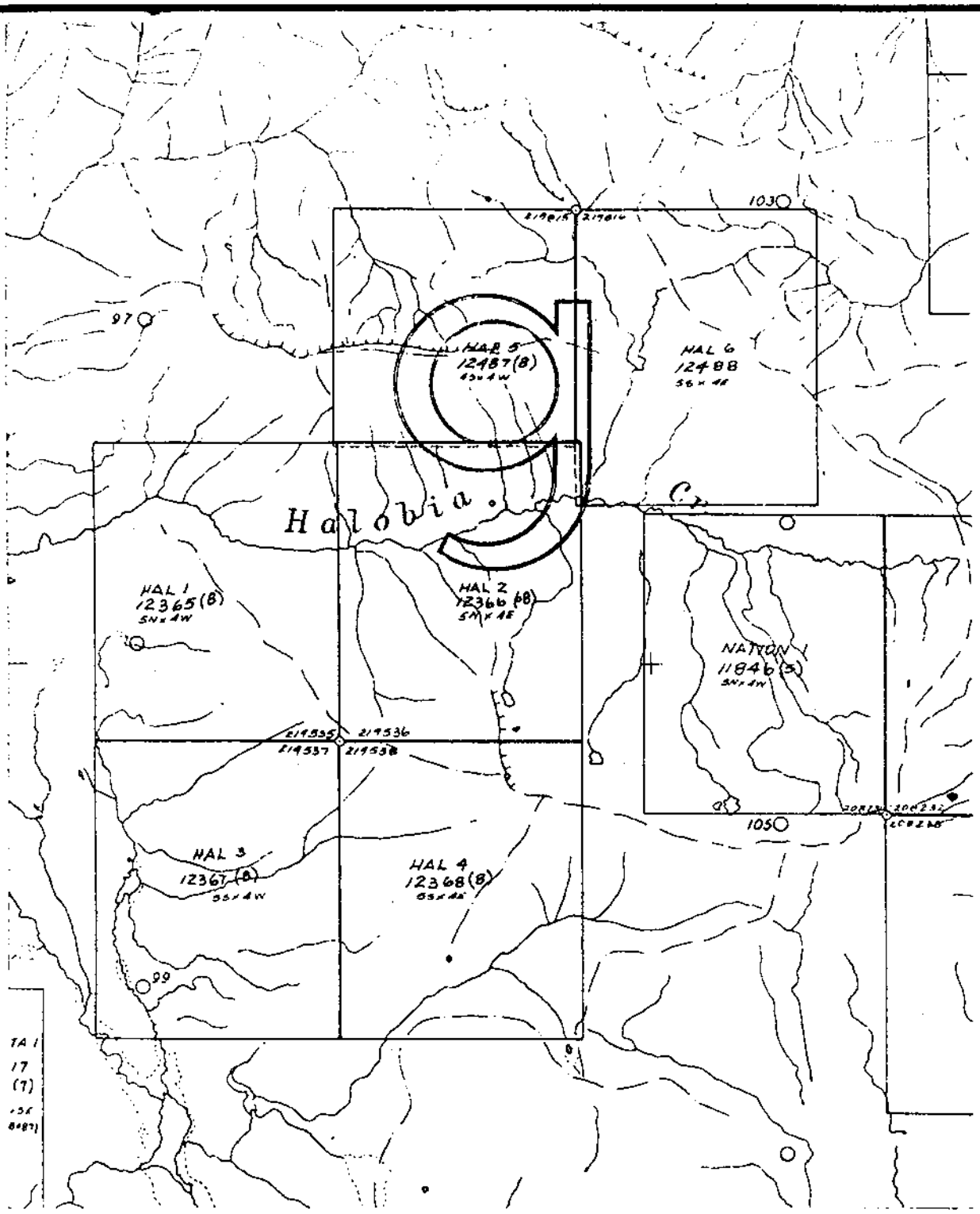
The property consists of 6 contiguous mineral claims totalling 116 units. The claims are registered in the name of Major General Resources Ltd and have been optioned to Swannell Minerals Corporation.

Details of the claims are as follows:

| Claim | Record Number | Units | Record Date | Expiry Date |
|---|---|---|---|---|
| Hal 1 Group: | | | | |
| Hal 1 | 242515 | 20 | 3 Aug 1990 | 3 Aug 1994 |
| Hal 3 | 242517 | 20 | 3 Aug 1990 | 3 Aug 1994 |
| Hal 4 | 242518 | 20 | 3 Aug 1990 | 3 Aug 1994 |
| Sub-total | | 60 | | |
| Hal 2 Group: | | | | |
| Hal 2 | 242516 | 20 | 3 Aug 1990 | 3 Aug 1994 |
| Hal 5 | 242637 | 16 | 24 Aug 1990 | 24 Aug 1994 |
| Hal 6 | 242638 | 20 | 24 Aug 1990 | 24 Aug 1994 |
| Sub-total | | 56 | | |
| Total | | 116 units | | |

The total area covered by the claims is 2900 hectares, or 7163 acres.

The writers are not aware of any particular environmental, political or regulatory problems that would adversely affect mineral exploration and development on the HAL property.




PROFESSIONAL ENGINEER
PROVINCE OF
P. D. LERICHE
BRITISH COLUMBIA
GEOSCIENTIST

SWANNELL MINERALS CORPORATION

# HAL PROPERTY

## OMINECA M.D.

# CLAIM MAP

| | | |
|---|---|---|
| Scale 1 : 50,000 | N.T.S. 93N/6E | Drawn by |
| Date Oct.92 | Geologist | Figure |

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3A

## 4. REGIONAL GEOLOGY

(from Rebagliati, 1991)

"The HAL property lies within the regionally extensive early Mesozoic Quesnel Belt. This 35 km wide belt extends northwesterly for 1200 km and includes equivalent rocks of the Upper Triassic-Lower Jurassic Takla, Nicola, and Stuhini Groups (Mortimer, 1986) (Figures 3 and 4). To the west, deformed and uplifted Permian Cache Creek Group rocks are separated from the Quesnel Belt by the Pinchi Fault Zone. To the east, the Manson Fault Zone separates this belt from the uplifted Proterozoic/ early Palaeozoic Wolverine Metamorphic Complex, and the Mississippian-Permian Slide Mountain and Cache Creek Groups (Garnet, 1978).

In the Mt Milligan - Johanson Lake district, the Takla Group volcanics are dominated by subaqueous alkalic to subalkalic dark green tuffs and volcanic breccias of andesitic and basaltic composition, interbedded with pyroxene porphyritic flow rocks of similar composition. Intercalated bedded tuffs and argillites are subordinate. Black argillites interfinger with volcanic rocks to the east and west of the central volcanic core. Locally, thick successions of maroon colored lahars suggest the presence of emergent subaerial volcanic centres.

The volcanic-sedimentary strata of the Quesnel Belt are locally intruded by alkaline syenite, monzonite, and diorite batholiths, stocks and dykes. In the Quesnel Belt, most intrusions are considered coeval and comagmatic with late Triassic-early Jurassic volcanism. Many of the stocks lie along linear trends which are interpreted to reflect fault zones which have localized volcanism and associated stock emplacement.

The Hogem Batholith of Early Jurassic to Cretaceous age is the largest body of intrusive rock within the Omineca Mountains (Armstrong and Garnett 1973).

Takla Group volcanic and sedimentary strata are intruded by the north-south elongate batholith which is, in part, truncated along its western margin by the Pinchi Fault. Numerous satellitic plutons flank the eastern margins of the batholith.

The complexity of the Hogem Batholith is characterized by rock units ranging in composition from diorite to granite. Lithologic changes are rapid to gradational at all scales of mapping.

Garnett, who used the I.U.G.S. classification of 1973 as shown in Table 1 on the following page, described three phases within the Hogem Batholith.

The earliest, Phase I, contains the more basic phases, including pyroxenite, gabbro, diorite, monzodiorite, monzonite, and the 'Hogem Granodiorite', and accounts for two-thirds of all rock types mapped. The Hogem Granodiorite is a distinctive leucocratic felsic division, predominantly quartz diorite in composition, but also comprising quartz monzodiorite, quartz monzonite and, more rarely, quartz diorite, tonalite and granite.

The Phase II syenites, such as the Duckling Creek complex, (with migmatitic, compositionally banded, and intrusive varieties) and the leucocratic Chuchi (quartz) syenite, are reported to be intrusive into Phase I rocks.

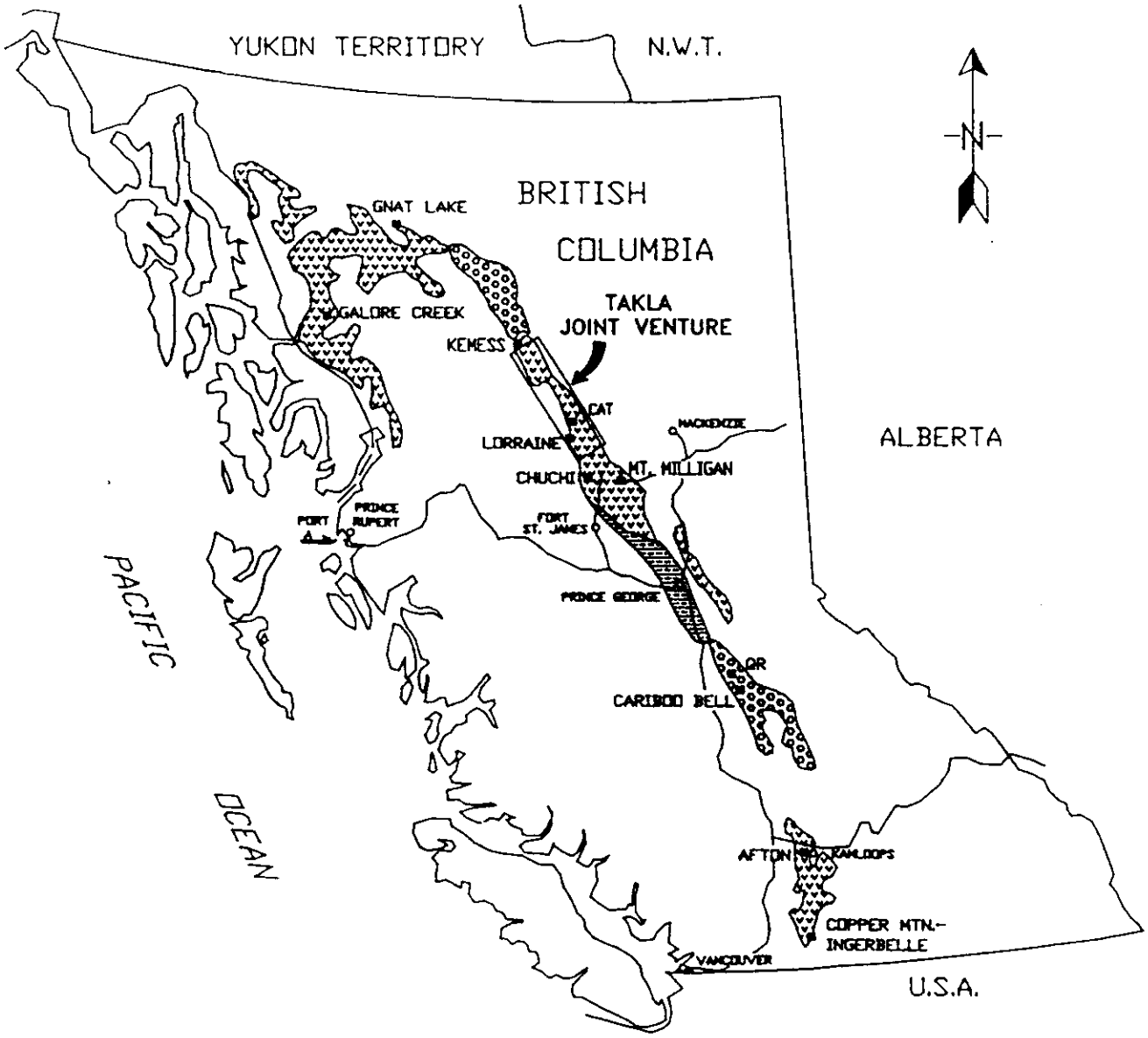
Phase III rocks include leucocratic varieties (including aplites, pegmatite, varieties of granite, quartz syenite and alaskite). These rocks may be represented by leucocratic late-stage dykes cutting units of Phases I and II.

Numerous porphyry copper prospects occur throughout the Hogem Batholith. The alkalic plutons of the Quesnel Belt commonly host porphyry copper deposits, which are increasingly being recognized as an important source of gold. It has also been recently recognized that related failed porphyry systems (copper deposits not formed) also have the potential to generate disseminated gold deposits (eg: QR and the 66 Zone at Mt Milligan).

Many auriferous porphyry copper prospects are under active exploration within the Quesnel Belt, and the following deposits have been identified:

Gold-Copper Porphyry Deposits
Quesnel Belt
British Columbia

| Property | No. of Deposits | Reserves/Mineral Inventory Copper($x10^6$lbs) | Gold ($x10^6$oz) |
|---|---|---|---|
| In Production: | | | |
| Copper Mountain (Cassiar) | 5 | 1,600 | .910 |
| Afton (Teck) | 2 | 680 | .970 |
| Exploration/Development Stage | | | |
| Mt. Polley (Imperial Metals) | 2 | 875 | 2.000 |
| Galore Creek (Hudsons Bay et al) | 8 | 3,000 | 1.750 |
| Red Chris (Noranda) | 2 | 550 | .450 |
| QR (QPX) | 4 | --- | .200 |
| Lorraine (Kennco) | 2 | 150 | .100 |
| Mt. Milligan (Continental Gold/Placer Dome) | 2 | 1,680 | 6.376 |
| Kemess (El Condor) | 2 | 1,615 | 6.226 |




LEGEND

- ALKALINE VOLCANIC ROCKS
- SUBALKALINE VOLCANIC ROCKS
- MAINLY SEDIMENTARY ROCKS
- GOLD AND / OR COPPER DEPOSIT

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After Fox et. al. 1976

6A

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# HAL PROPERTY

QUESNEL BELT
UPPER TRIASSIC & LOWER JURASSIC VOLCANIC ROCKS, SIGNIFICANT GOLD AND / OR COPPER DEPOSITS, ASSOCIATED WITH ALKALIC PLUTONS

| | | |
|---|---|---|
| Scale AS SHOWN | N.T.S. | Drawn by |
| Date Oct.92 | Geologist | Figure 3 |

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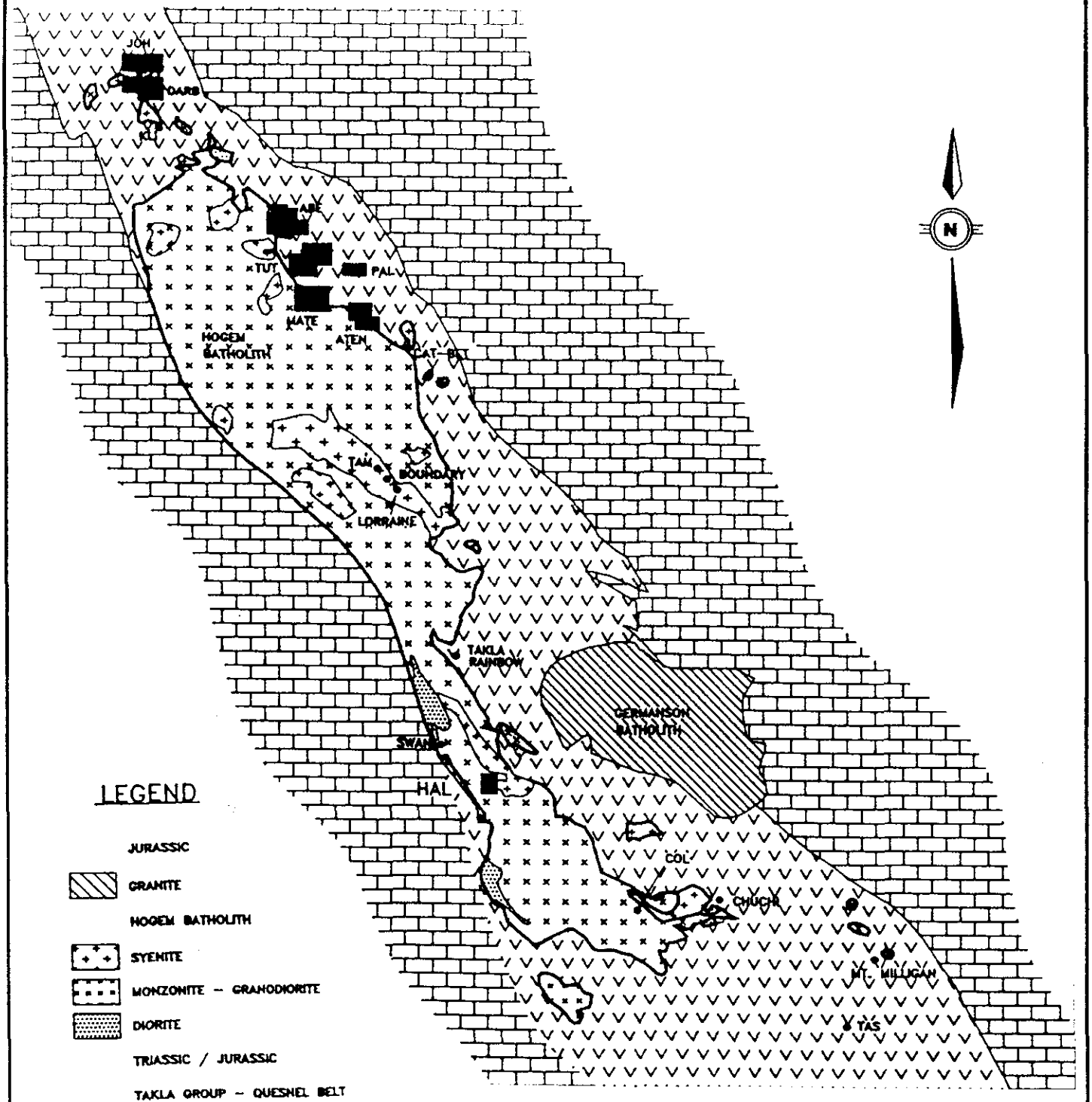


## LEGEND

- JURASSIC
- GRANITE
- HOGEM BATHOLITH
- SYENITE
- MONZONITE – GRANODIORITE
- DIORITE
- TRIASSIC / JURASSIC
- TAKLA GROUP – QUESNEL BELT
- BASALT – ANDESITE
- PERMIAN
- LIMESTONE – SHALE
- TAKLA JOINT VENTURE PROPERTY
- PORPHYRY DEPOSITS

SCALE

0 25 50

KILOMETRES

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6B

SWANNELL MINERALS CORPORATION

# HAL PROPERTY

# REGIONAL GEOLOGY

| | | |
|---|---|---|
| Scale as shown | N.T.S. | Drawn by |
| Date Oct.92 | Geologist | Figure 4 |

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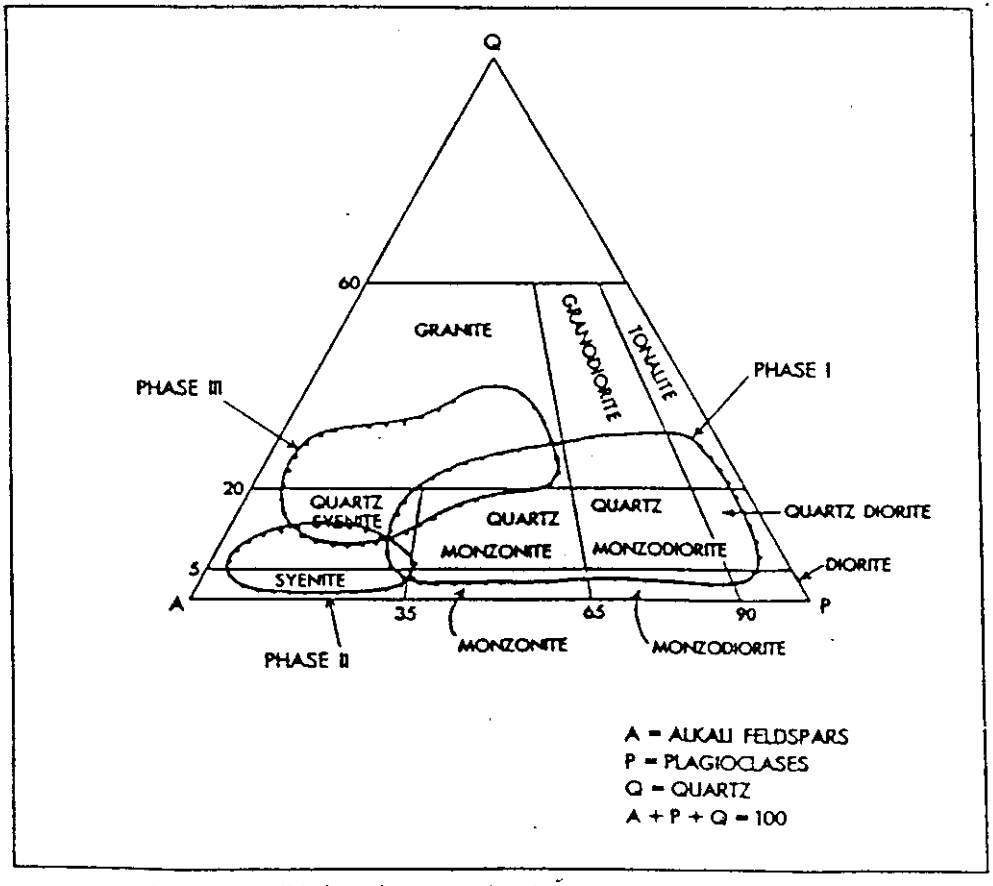
# TABLE 1

## SOUTHERN HOGEM BATHOLITH: INTRUSIVE ROCK DIVISIONS

| INTRUSIVE PHASES | PHASE DIVISIONS | UNIT | ROCK VARIETIES |
|---|---|---|---|
| PHASE III LOWER CRETACEOUS | | 9 | LEUCOCRATIC GRANITE, Alaskite |
| PHASE II MIDDLE JURASSIC TO LOWER JURASSIC | CHUCHI SYENITE | 8 | LEUCOCRATIC SYENITE, Quartz Syenite |
| | DUCKLING CREEK SYENITE COMPLEX | 7 | LEUCOCRATIC SYENITE |
| | | 6 | FOLIATED SYENITE |
| PHASE I LOWER JURASSIC TO UPPER TRIASSIC | HOGEM GRANODIORITE | 5 | GRANODIORITE, QUARTZ MONZONITE, minor Tonalite, Quartz Diorite, Quartz Monzonite, Granite |
| | HOGEM BASIC SUITE | 4 | MONZONITE to Quartz Monzonite |
| | | 3 | MONZODIORITE to Quartz Monzodiorite |
| | | 2 | NATION LAKES PLAGIOCLASE PORPHYRY (a) Monzonite (b) Monzodiorite |
| | | 1 | DIORITE, minor Gabbro, Pyroxenite, Hornblendite |




Hogem batholith intrusive phases in relation to general plutonic rock classification (after I.U.G.S., 1973).

## 5. PREVIOUS WORK

1969 Umex - Wenner Gren Joint Venture conducted reconnaissance stream sediment sampling in the area. Anomalous molybdenum values led to claim staking in 1971.

1971 Umex - Wenner Gren collected 369 soil samples and analyzed them for copper, molybdenum and zinc. A discontinuous north-west trending copper/molybdenum soil anomaly was outlined measuring 300 x 1500 meters. The anomaly lies on the eastern part of the Hal 6 claim.

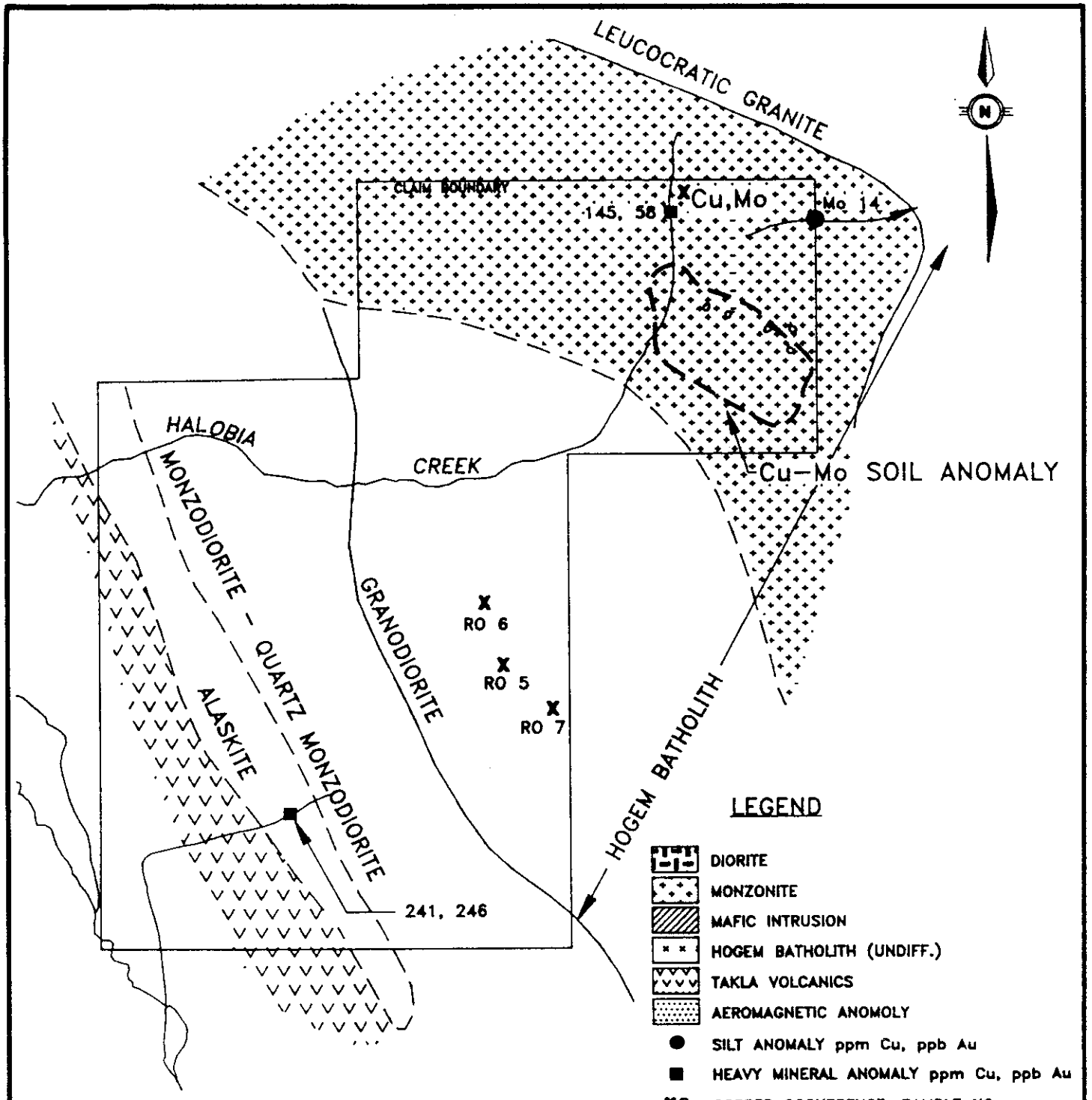
1972 Umex - Wenner Gren conducted geological mapping, line-cutting, 10.9 line kilometers of IP, 20 line kilometers of magnetic surveys followed by 5 short diamond drill holes totalling 1,139 feet. Drilling was done upslope from the soil anomaly to take into account possible downslope migration of metals from the source area.

Results from all surveys were inconclusive.

1980 Dome Exploration Ltd. evaluated the claims for molybdenum and tungsten potential. A program of silt sampling, 10 test soil profiles and 52.5 line kilometers of magnetic surveys were carried out.

1990 Hal 1 to 6 claims acquired by Major General Resources.

1991 Swannell Minerals Corp conducted prospecting, silt sampling (18), heavy mineral sampling (9) and rock sampling (5). No outcrop was located in the area of the previously defined soil anomaly.




after Rebagliati,1992

SCALE

0 1 2 Km

1 : 50,000

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA P. D. LERICHE GEOSCIENTIST

SWANNELL MINERALS CORPORATION

# HAL PROPERTY

COMPOSITE PLAN
AEROMAGNETICS, GEOLOGY AND
ANOMALOUS STREAM SILTS

| | | |
|---|---|---|
| Scale 1 : 50,000 | N.T.S. | Drawn by |
| Date Oct.92 | Geologist | Figure 5 |

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In 1991, three copper bearing shear zones were sampled on the Hal 2 and 4 claims. Results from select sampling are as follows:

| Sample | Cu (ppm) | Ag (ppm) | Au (ppb) | As (ppm) | Sb (ppm) | Rock Type |
|---|---|---|---|---|---|---|
| R05 | 10413 | 8.6 | 15 | 7 | 9 | Sheared granodiorite |
| R06 | 3754 | 20.8 | 10 | 5 | 1 | Skarn |
| R07 | 15970 | 11.5 | 38 | 753 | 197 | Sheared granodiorite |

Rebagliati (1992) concluded that the enriched concentrations of silver, arsenic and antimony in the shear and skarn zones could represent polymetallic mineralization commonly associated with the outer edges of porphyry copper hydrothermal systems.

## 6. 1992 WORK PROGRAM

Done under B.C.M.E.M.P.R. Approval Number **PRG-1300203-44751**

### 6.1 Methods and Procedures

Geological and geochemical surveys were carried out on the Hal 2, 4, and 5 claims.

Two reconnaissance survey grids were laid out on the Hal 2 and 4 claims. All lines were surveyed using compass, hipchain and flagging.

Cross-lines were put in at 200 line spacings and stations were marked at 50 meter intervals with marked double flagging. Total line surveyed was 7.6 kilometers.

Geological mapping was performed over approximately 20% of the property at a scale of 1:10,000 (Figure 6).

A total of 5 rock samples were collected and analyzed for gold (Fire Assay/AA) and multi-element ICP by Chemex Labs Ltd. See Appendix A for rock sample descriptions and Appendix B for analytical reports and techniques.

The grids were soil sampled at 50 and 100 meter station spacings. 110 samples were taken. All samples were taken with a grub hoe from the B horizon (approximate depth 30 cm), placed into marked Kraft paper bags and sent to Chemex Labs Ltd. for analysis.

The analytical results for two elements (Cu, Au), were computer-plotted on 1:10,000 scale maps (Figures 7, 8).

To evaluate any existing geochemical anomalies, frequency distribution histograms based on laboratory data were prepared for each of the aforementioned elements (Appendix C). Anomalous values were chosen using natural breaks in each histogram.

For interpretation purposes, correlation coefficients were calculated (Appendix C) and anomalous ranges for each element were plotted using symbol maps (Figures 7 and 8). All statistical and plotting work was performed by Tony Clark, Ph.D.

## 6.2 Property Geology (Figure 6)

Previous mapping by Umex and Dome show the property to be underlain by Triassic-Jurassic Takla volcanics (southeast corner of claims) which are intruded by Phase I units of the Hogem Batholith consisting of granodiorite, monzodiorite and monzonite. Phase III units of the Hogem Batholith consisting of leucocratic granite and alaskite dykes cut the volcanics and granodiorite (Figure 5).

### 6.2.1 Lithologies:

Rocks of the Jurassic - Cretaceous Phase I Hogem Batholith (4) were observed during 1992 mapping.

Unit 4a, a quartz monzonite, was the dominant rock type mapped. Unit 4a is fine to medium grained with 70+ percent plagioclase feldspars in the matrix and as discrete crystals <10 percent mafic minerals, <10 percent potassium feldspars and <10 percent quartz.

Unit 4b, a granodiorite, was located along line 1400 and the northern portion of line 1550. Plagioclase feldspars make up 60+ percent, mafic minerals 20 to 40 percent, quartz <10 percent and potassium feldspars 0 to 5 percent.

### 6.2.2 Alteration

Alteration is localized and limited to introduced epidote and quartz along fractures. Fractures may have narrow <5 cm wide envelopes where the host rock has been silicified or the plagioclase feldspars have been altered to epidote - chlorite. Mafic minerals may be partially altered to chlorite.

### 6.2.3 Structure:

All rock types are fractured and jointed, but magnetic influences make structural orientations difficult. There are three locations at which intense fracturing appears to have controlled mineralization. At two locations (sample sites 12077 and 12078), fracturing is less than 1 meter wide. The third location (sample locations 12079, 12080 and 12081) consists of a 25 meter wide zone containing at least three 1 meter wide fractured zones hosting quartz. The general trend of the fracturing is north.

### 6.2.4 Mineralization:

Mineralization observed to date consists of malachite along fracture surfaces and disseminated within the fractured intrusive and quartz vein material. Magnetite is associated with quartz veining at rock sample locations 12079, 12080 and 12081. A 5 cm wide magnetite-epidote veinlet trending 151° was found on the ridge north of Halobia Creek.

## 6.3 Rock Geochemistry (Figure 6)

For complete rock sample descriptions, see Appendix A. All 5 rock samples returned significant results.

| Sample # | Type | Width (meters) | Cu (ppm) | Au (ppb) | Ag (ppm) | Description |
|---|---|---|---|---|---|---|
| 12077 | Chip | 4.0 | 9230 | 120 | 23.0 | Fractured, limonitic quartz monzonite flooded with malachite. |
| 12078 | Chip | 1.0 | 3920 | 225 | 16.0 | Fractured, silicified intrusive with strong malachite staining. |
| 12079 | Chip | 1.0 | 5960 | 20 | 5.8 | Samples 079, 080, 081 from fractured, limonitic, magnetic granodiorite or monzodiorite mineralized with malachite. |
| 12080 | Chip | 1.0 | 1905 | 25 | 2.0 | |
| 12081 | Grab | - | 5120 | 395 | 4.6 | |

## 6.4 Soil Geochemistry (Figures 7, 8)

Summary Statistics:

| | Copper | Gold |
|---|---|---|
| Range | 8 to 1914 ppm | 0 to 130 ppb |
| Mean | 52.18 | 7.64 |
| Standard Deviation | 179.77 | 22.46 |
| Background | 8 to 49 ppm | 0 to 19 ppb |
| Low Anomalous | 50 to 69 ppm | 20 to 39 ppb |
| High Anomalous | 70 + ppm | 40 + ppb |

The correlation coefficient chart (Appendix C) did not show any significant correlation between gold and any other elements. There is a moderate correlation between copper and molybdenum and a weak association with copper and silver.

Anomalous results for both copper and gold are scattered and spotty. Four anomalous gold values (>40 ppb) and the highest copper value (4914 ppm) occur along L12+200N, north and downslope from rock sample site 12077.

None of the soil lines covered any of the malachite infilled shear zones. No soil sampling has been done to test mineralized shear zones along strike, under overburden.

## 7. DISCUSSION

The 1992 exploration program did not locate any porphyry style mineralization. However, not enough work has been done to test the porphyry potential.

The following exploration targets have been identified and warrant follow-up exploration work.

a) Malachite infilled shear zones.
All five samples collected in 1992 yielded copper results ranging from 1905 to 9230 ppm with associated gold and silver values. Samples 12079, 12080, 12081 were taken from subcrops in a fracture zone at least 25 meters wide. Potential exists for a small copper oxide deposit amenable to SXEW techniques.

b) A coincident copper/molybdenum soil anomaly on the Hal 6 claim has not been followed up in sufficient detail. No precious metals have been analyzed.

c) A contact zone between Takla volcanics and Hogem batholith rocks in the southeast property area has not been investigated.

Approximately 60% of the claim area remains to be investigated.

## 8. CONCLUSIONS

The HAL property has potential to host a porphyry or copper oxide style deposit for the following reasons:

- It lies in the Mesozoic Quesnel Belt which hosts several porphyry copper/gold deposits;

- the geological environment, granodiorite/monzonite intruding Takla volcanic rocks, is favorable; and

- two targets have been located:
  a) malachite mineralization in fracture zones, and
  b) a coincident copper/molybdenum soil anomaly.

## 9. RECOMMENDATIONS

a) Geologically map and prospect the property area with attention to the Takla-intrusive contact;
b) Soil sample (approximately 300 samples) over the previously outlined Cu/Mo anomaly and the area with malachite infilled fracture zones at 200 line spacings and 100 meter sample spacings;
c) Hand trench and blast the malachite showings;
d) Perform a ground magnetic survey over the malachite showings to trace mineralization along strike.

Contingent upon favourable results, further work would consist of an IP survey and diamond drilling to test the targets at depth.

## CERTIFICATE

I, **PETER D. LERICHE**, of 3125 West 12th Avenue, Vancouver, B.C., V6K 2R6, do hereby state that:

1. I am a graduate of McMaster University, Hamilton, Ontario, with a Bachelor of Science Degree in Geology, 1980.

2. I am registered as a member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.

3. I am a Fellow in good standing with the Geological Association of Canada.

4. I have actively pursued my career as a geologist for twelve years in British Columbia, Ontario, the Yukon and Northwest Territories, Montana, Oregon, Alaska, Arizona, Nevada and California.

5. The information, opinions, and recommendations in this report are based on fieldwork carried out under my direction, and on published and unpublished literature. I have not visited the subject property.

6. I have no interest, direct or indirect, in the subject claims or the securities of Swannell Minerals Corporation or Major General Resources Ltd, nor do I expect to receive any.

7. I consent to the use of this report, only in its entirety, in a Prospectus or Statement of Material Facts for the purpose of private or public financing.

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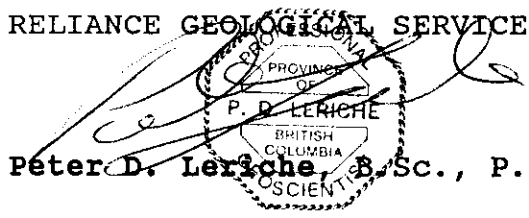


**Peter D. Leriche**, B.Sc., P.Geo.

Dated at North Vancouver, B.C., this 19th day of October 1992.

## CERTIFICATE

I, **REG FAULKNER**, of 302 - 1475 West 11th Avenue, Vancouver, B.C., do hereby state that:

1. In 1974, I graduated from the University of British Columbia, Vancouver, B.C. with a Bachelor of Science degree in Physical Geography and Geology.

2. In 1988, I graduated from the University of British Columbia, Vancouver, B.C. with a Master of Applied Science Degree from the department of Mining and Mineral Process Engineering.

3. I am registered as a member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.

4. I have actively pursued my career as a geologist for thirteen years in the Yukon and Northwest Territories, British Columbia, Alberta, Alaska, Nevada, and California.

5. The information, opinions, and recommendations in this report are based on fieldwork carried out by me, and on published and unpublished literature. I worked on the HAL property during July 1992.

5. I have no interest, direct or indirect, in the subject claims or the securities of Swannell Minerals Corporation or Major General Resources Ltd, nor do I expect to receive any.

6. I consent to the use of this report, only in its entirety, in a Prospectus or Statement of Material Facts for the purpose of private or public financing.

RELIANCE GEOLOGICAL SERVICES INC.

**Reg Faulkner**, M.Sc.,P.Geo.

Dated at North Vancouver, B.C., this 19th day of October 1992.

REFERENCES

ADAMSON, R.S., (1968-72):
Geochemical Report on the Noble Claims, Assessment Report #3611. Sept, 1971.

CHOW, F. and KAHLERT, B.H.
Hal Property: Compilation of geological, Geochemical, Geophysical, Diamond Drilling and Other Data on the Hal Group of Mineral Claims, in house report for Takla Joint Venture. Nov. 19, 1990.

FRASER, B.M. (1980):
Geological, Geochemical Report on the Halo 1 Mineral Claim. Assessment Report #8988. Dec. 11, 1980.

GARNETT, J.A., 1978:
The Southern Hogem Batholith, BCDM Bulletin #70. 1974.

PARDOE, A.J., 1991:
Geological Mapping, Prospecting and Stream Sampling on the Hal Group, Halobia Creek, BC.

REBAGLIATI, C.M., 1991:
Summary Report, Takla Joint Venture, Porphyry Copper Gold Project.

REBAGLIATI, C.M., 1992:
Summary Report, Takla Joint Venture, Porphyry Copper Gold Project.

ITEMIZED COST STATEMENT
HAL PROJECT (J770)

| | | | |
|---|---|---|---|
| Project preparation | | | $ 540 |
| Mobilization and demobilization (includes transportation, and wages) | | | $ 4,730 |
| Supervision (P. Leriche & M. Rebagliati) | | | $ 1,100 |
| Field Crew: | | | |
| Project Geologist | $ 325/day x 3 days | $ 975 | |
| (R. Faulkner: July 30,31, Aug 1, 1992) | | | |
| Field Geologist | $ 275/day x 3 days | $ 825 | |
| (G. King: July 30,31, Aug 1, 1992) | | | |
| Prospectors | $ 250/day x 6 days | $ 1,500 | $ 3,900 |
| (A. Berry & J. Fleishman: July 30,31, Aug 1, 1992) | | | |
| Field Costs: | | | |
| Helicopter | $ 750/hr x 2.3 hrs | $ 1,725 | |
| Communications | $ 14/day x 12 days | $ 168 | |
| Expediting and freight | | $ 310 | |
| Food & accommodation | $ 75/day x 15 days | $ 1,125 | |
| Supplies | $ 18/day x 12 days | $ 216 | |
| Vehicle | $ 30/day x 3 days | $ 90 | $ 3,634 |
| Assays & Analysis: | | | |
| 110 soil samples @ $14/sample | | $ 1,540 | |
| (Geochem/AA for Au + 30 element ICP) | | | |
| 5 rock samples @ $17/sample | | $ 85 | $ 1,625 |
| (FA/AA for Au and 30 element ICP) | | | |
| Report: | | | |
| Writing, editing, map prep, processing, binding, copying | | | $ 2,150 |
| Administration, incl overhead and profit | | | $ 709 |
| Sub-total | | | $ 18,388 |
| plus 7% G.S.T. | | | $ 1,287 |
| TOTAL | | | $ 19,675 |

$9,837 to Hal 1; $9,838 to Hal 2
plus PAC

# APPENDIX A

Rock Sample Descriptions

APPENDIX "A"
ROCK SAMPLE DESCRIPTIONS
HAL CLAIMS

| Sample Number | Type | Width (m) | Description |
|---|---|---|---|
| 12077 | Chip | 4.0 | Sample from subcrop, a well fractured, limonitic, slightly propylitic quartz monzonite(?) with malachite staining and minor potassium feldspars. It is believed to be sample 91HR05. |
| 12078 | Chip | 1.0 | Sample from subcrop, a well fractured, silicified intrusive with malachite staining. It is believed to be sample 91HR07. |
| 12079 | Chip | 1.0 | Sample from subcrop, a well fractured, quartz veined, magnetic Granodiorite(?) with malachite staining. |
| 12080 | Chip | 1.0 | Sample from subcrop, a well fractured, limonitic, magnetic Monzo-Diorite(?) with malachite staining on fracture surfaces. |
| 12081 | Grab | | Sample from subcrop, a well fractured, limonitic, magnetic Monzo-Diorite(?) with malachite staining on fracture surfaces. |

**APPENDIX B**

Analytical Reports and Techniques

# Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221


To: RELIANCE GEOLOGICAL SERVICES INC.

241 E. 1ST. ST.
NORTH VANCOUVER, BC
V7L 1B4

A9219009

Comments:

## CERTIFICATE A9219009

RELIANCE GEOLOGICAL SERVICES INC.

Project: HAL
P.O. # : 770

**Samples submitted to our lab in Vancouver, BC.**
**This report was printed on 14-AUG-92.**

## SAMPLE PREPARATION

| CHEMEX CODE | NUMBER SAMPLES | DESCRIPTION |
|---|---|---|
| 205 | 5 | Geochem ring to approx 150 mesh |
| 274 | 5 | 0-15 lb crush and split |
| 229 | 5 | ICP - AQ Digestion charge |

* NOTE 1:

**The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.**

## ANALYTICAL PROCEDURES

| CHEMEX CODE | NUMBER SAMPLES | DESCRIPTION | METHOD | DETECTION LIMIT | UPPER LIMIT |
|---|---|---|---|---|---|
| 100 | 5 | Au ppb: Fuse 10 g sample | FA-AAS | 5 | 10000 |
| 2118 | 5 | Ag ppm: 32 element, soil & rock | ICP-AES | 0.2 | 200 |
| 2119 | 5 | Al %: 32 element, soil & rock | ICP-AES | 0.01 | 15.00 |
| 2120 | 5 | As ppm: 32 element, soil & rock | ICP-AES | 2 | 10000 |
| 2121 | 5 | Ba ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2122 | 5 | Be ppm: 32 element, soil & rock | ICP-AES | 0.5 | 100.0 |
| 2123 | 5 | Bi ppm: 32 element, soil & rock | ICP-AES | 2 | 10000 |
| 2124 | 5 | Ca %: 32 element, soil & rock | ICP-AES | 0.01 | 15.00 |
| 2125 | 5 | Cd ppm: 32 element, soil & rock | ICP-AES | 0.5 | 100.0 |
| 2126 | 5 | Co ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2127 | 5 | Cr ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2128 | 5 | Cu ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2150 | 5 | Fe %: 32 element, soil & rock | ICP-AES | 0.01 | 15.00 |
| 2130 | 5 | Ga ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2131 | 5 | Hg ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2132 | 5 | K %: 32 element, soil & rock | ICP-AES | 0.01 | 10.00 |
| 2151 | 5 | La ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2134 | 5 | Mg %: 32 element, soil & rock | ICP-AES | 0.01 | 15.00 |
| 2135 | 5 | Mn ppm: 32 element, soil & rock | ICP-AES | 5 | 10000 |
| 2136 | 5 | Mo ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2137 | 5 | Na %: 32 element, soil & rock | ICP-AES | 0.01 | 5.00 |
| 2138 | 5 | Ni ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2139 | 5 | P ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2140 | 5 | Pb ppm: 32 element, soil & rock | ICP-AES | 2 | 10000 |
| 2141 | 5 | Sb ppm: 32 element, soil & rock | ICP-AES | 2 | 10000 |
| 2142 | 5 | Sc ppm: 32 elements, soil & rock | ICP-AES | 1 | 10000 |
| 2143 | 5 | Sr ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2144 | 5 | Ti %: 32 element, soil & rock | ICP-AES | 0.01 | 5.00 |
| 2145 | 5 | Tl ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2146 | 5 | U ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2147 | 5 | V ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2148 | 5 | W ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2149 | 5 | Zn ppm: 32 element, soil & rock | ICP-AES | 2 | 10000 |

# Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers

212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: RELIANCE GEOLOGICAL SERVICES INC.

241 E. 1ST. ST.
NORTH VANCOUVER, BC
V7L 1B4

Project : HAL
Comments:

Page Number :1-A
Total Pages :1
Certificate Date: 14-AUG-92
Invoice No. :I9219009
P.O. Number :770
Account :ILR

## CERTIFICATE OF ANALYSIS A9219009

| SAMPLE | PREP CODE | | Au ppb FA+AA | Ag ppm | Al % | As ppm | Ba ppm | Be ppm | Bi ppm | Ca % | Cd ppm | Co ppm | Cr ppm | Cu ppm | Fe % | Ga ppm | Hg ppm | K % | La ppm | Mg % | Mn ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12077 | 205 | 274 | 120 | 23.0 | 1.17 | 34 | 70 | < 0.5 | < 2 | 0.11 | < 0.5 | 24 | 48 | 9230 | 6.22 | < 10 | < 1 | 0.34 | 30 | 0.25 | 460 |
| 12078 | 205 | 274 | 225 | 16.0 | 1.10 | 446 | 130 | < 0.5 | 16 | 0.82 | 30.5 | 7 | 29 | 3920 | 4.01 | < 10 | < 1 | 0.49 | 20 | 0.07 | 495 |
| 12079 | 205 | 274 | 20 | 5.8 | 1.43 | 2 | 150 | < 0.5 | 2 | 0.17 | < 0.5 | 5 | 149 | 5960 | 4.33 | < 10 | < 1 | 0.39 | < 10 | 0.64 | 400 |
| 12080 | 205 | 274 | 25 | 2.0 | 1.42 | 4 | 430 | < 0.5 | < 2 | 0.38 | < 0.5 | 7 | 51 | 1905 | 3.47 | < 10 | < 1 | 0.12 | < 10 | 0.77 | 505 |
| 12081 | 205 | 274 | 395 | 4.6 | 1.37 | < 2 | 90 | < 0.5 | 6 | 0.16 | < 0.5 | 12 | 117 | 5120 | 5.68 | < 10 | < 1 | 0.28 | < 10 | 0.50 | 420 |

CERTIFICATION: Jhai D Ma

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241 E. 1ST. ST.
NORTH VANCOUVER, BC
V7L 1B4

Project : HAL
Comments:

Page Number :1-B
Total Pages :1
Certificate Date: 14-AUG-92
Invoice No. :I9219009
P.O. Number :770
Account :ILR

## CERTIFICATE OF ANALYSIS A9219009

| SAMPLE | PREP CODE | | Mo ppm | Na % | Ni ppm | P ppm | Pb ppm | Sb ppm | Sc ppm | Sr ppm | Ti % | Tl ppm | U ppm | V ppm | W ppm | Zn ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12077 | 205 | 274 | 83 | 0.03 | 2 | 570 | 74 | < 2 | 2 | 14 | < 0.01 | < 10 | 10 | 25 | 70 | 252 |
| 12078 | 205 | 274 | 4 | 0.01 | < 1 | 620 | 18 | 72 | 1 | 33 | < 0.01 | < 10 | < 10 | 21 | < 10 | 2220 |
| 12079 | 205 | 274 | 7 | 0.07 | 3 | 720 | 16 | 2 | 2 | 14 | < 0.01 | < 10 | < 10 | 44 | 240 | 66 |
| 12080 | 205 | 274 | 4 | 0.03 | 5 | 790 | 4 | < 2 | 3 | 72 | 0.03 | < 10 | < 10 | 63 | < 10 | 58 |
| 12081 | 205 | 274 | 11 | 0.05 | 3 | 710 | < 2 | 2 | 3 | 15 | 0.01 | < 10 | < 10 | 54 | 30 | 70 |

CERTIFICATION: John D'Ma

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PHONE: 604-984-0221


To: RELIANCE GEOLOGICAL SERVICES INC.

241 E. 1ST. ST.
NORTH VANCOUVER, BC
V7L 1B4

A9219008

Comments:

## CERTIFICATE A9219008

RELIANCE GEOLOGICAL SERVICES INC.

Project: HAL
P.O. # : 770

**Samples submitted to our lab in Vancouver, BC.**
**This report was printed on 15-AUG-92.**

## SAMPLE PREPARATION

| CHEMEX CODE | NUMBER SAMPLES | DESCRIPTION |
|---|---|---|
| 201 | 110 | Dry, sieve to -80 mesh |
| 229 | 110 | ICP - AQ Digestion charge |

* NOTE 1:

**The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, Tl, W.**

## ANALYTICAL PROCEDURES

| CHEMEX CODE | NUMBER SAMPLES | DESCRIPTION | METHOD | DETECTION LIMIT | UPPER LIMIT |
|---|---|---|---|---|---|
| 100 | 110 | Au ppb: Fuse 10 g sample | FA-AAS | 5 | 10000 |
| 2118 | 110 | Ag ppm: 32 element, soil & rock | ICP-AES | 0.2 | 200 |
| 2119 | 110 | Al %: 32 element, soil & rock | ICP-AES | 0.01 | 15.00 |
| 2120 | 110 | As ppm: 32 element, soil & rock | ICP-AES | 2 | 10000 |
| 2121 | 110 | Ba ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2122 | 110 | Be ppm: 32 element, soil & rock | ICP-AES | 0.5 | 100.0 |
| 2123 | 110 | Bi ppm: 32 element, soil & rock | ICP-AES | 2 | 10000 |
| 2124 | 110 | Ca %: 32 element, soil & rock | ICP-AES | 0.01 | 15.00 |
| 2125 | 110 | Cd ppm: 32 element, soil & rock | ICP-AES | 0.5 | 100.0 |
| 2126 | 110 | Co ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2127 | 110 | Cr ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2128 | 110 | Cu ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2150 | 110 | Fe %: 32 element, soil & rock | ICP-AES | 0.01 | 15.00 |
| 2130 | 110 | Ga ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2131 | 110 | Hg ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2132 | 110 | K %: 32 element, soil & rock | ICP-AES | 0.01 | 10.00 |
| 2151 | 110 | La ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2134 | 110 | Mg %: 32 element, soil & rock | ICP-AES | 0.01 | 15.00 |
| 2135 | 110 | Mn ppm: 32 element, soil & rock | ICP-AES | 5 | 10000 |
| 2136 | 110 | Mo ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2137 | 110 | Na %: 32 element, soil & rock | ICP-AES | 0.01 | 5.00 |
| 2138 | 110 | Ni ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2139 | 110 | P ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2140 | 110 | Pb ppm: 32 element, soil & rock | ICP-AES | 2 | 10000 |
| 2141 | 110 | Sb ppm: 32 element, soil & rock | ICP-AES | 2 | 10000 |
| 2142 | 110 | Sc ppm: 32 elements, soil & rock | ICP-AES | 1 | 10000 |
| 2143 | 110 | Sr ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2144 | 110 | Ti %: 32 element, soil & rock | ICP-AES | 0.01 | 5.00 |
| 2145 | 110 | Tl ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2146 | 110 | U ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2147 | 110 | V ppm: 32 element, soil & rock | ICP-AES | 1 | 10000 |
| 2148 | 110 | W ppm: 32 element, soil & rock | ICP-AES | 10 | 10000 |
| 2149 | 110 | Zn ppm: 32 element, soil & rock | ICP-AES | 2 | 10000 |

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V7L 1B4

Project : HAL
Comments:


Certificate Date: 15-AUG-92
Invoice No. :I9219008
P.O. Number :770
Account :ILR

## CERTIFICATE OF ANALYSIS A9219008

| SAMPLE | PREP CODE | | Au ppb FA+AA | Ag ppm | Al % | As ppm | Ba ppm | Be ppm | Bi ppm | Ca % | Cd ppm | Co ppm | Cr ppm | Cu ppm | Fe % | Ga ppm | Hg ppm | K % | La ppm | Mg % | Mn ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 122+00N 130+00E | 201 | 229 | < 5 | < 0.2 | 2.42 | < 2 | 110 | < 0.5 | < 2 | 0.33 | < 0.5 | 4 | 27 | 28 | 3.22 | < 10 | < 1 | 0.06 | < 10 | 0.37 | 445 |
| 122+00N 130+50E | 201 | 229 | < 5 | < 0.2 | 2.55 | < 2 | 80 | < 0.5 | 4 | 0.39 | < 0.5 | 9 | 45 | 43 | 4.51 | < 10 | < 1 | 0.06 | < 10 | 0.59 | 465 |
| 122+00N 131+00E | 201 | 229 | 10 | < 0.2 | 2.63 | < 2 | 90 | < 0.5 | < 2 | 0.36 | < 0.5 | 6 | 26 | 33 | 3.47 | < 10 | < 1 | 0.05 | < 10 | 0.47 | 325 |
| 122+00N 131+50E | 201 | 229 | 5 | < 0.2 | 2.41 | < 2 | 90 | < 0.5 | < 2 | 0.58 | < 0.5 | 10 | 35 | 45 | 4.52 | < 10 | < 1 | 0.05 | < 10 | 0.69 | 390 |
| 122+00N 132+00E | 201 | 229 | < 5 | < 0.2 | 2.85 | < 2 | 70 | < 0.5 | < 2 | 0.42 | < 0.5 | 10 | 36 | 57 | 4.03 | < 10 | < 1 | 0.06 | < 10 | 0.67 | 375 |
| 122+00N 132+50E | 201 | 229 | < 5 | < 0.2 | 2.73 | < 2 | 70 | < 0.5 | < 2 | 0.37 | < 0.5 | 12 | 38 | 48 | 4.29 | < 10 | < 1 | 0.06 | < 10 | 0.74 | 455 |
| 122+00N 133+00E | 201 | 229 | < 5 | < 0.2 | 2.57 | < 2 | 100 | < 0.5 | < 2 | 0.48 | < 0.5 | 12 | 34 | 49 | 4.11 | < 10 | < 1 | 0.06 | < 10 | 0.72 | 495 |
| 122+00N 133+50E | 201 | 229 | < 5 | < 0.2 | 2.64 | < 2 | 100 | < 0.5 | < 2 | 0.58 | < 0.5 | 12 | 37 | 45 | 4.09 | < 10 | < 1 | 0.06 | 10 | 0.71 | 470 |
| 122+00N 134+00E | 201 | 229 | < 5 | < 0.2 | 2.41 | < 2 | 100 | < 0.5 | < 2 | 0.47 | < 0.5 | 9 | 34 | 46 | 4.60 | < 10 | < 1 | 0.06 | < 10 | 0.70 | 380 |
| 122+00N 134+50E | 201 | 229 | 10 | < 0.2 | 2.44 | < 2 | 510 | < 0.5 | < 2 | 0.92 | < 0.5 | 6 | 8 | 30 | 2.70 | < 10 | < 1 | 0.08 | 10 | 0.66 | 1695 |
| 122+00N 135+00E | 201 | 229 | 55 | < 0.2 | 2.82 | < 2 | 660 | < 0.5 | < 2 | 0.75 | < 0.5 | 11 | 9 | 31 | 3.04 | 10 | < 1 | 0.09 | 10 | 0.74 | 2230 |
| 122+00N 135+50E | 201 | 229 | 80 | < 0.2 | 2.34 | < 2 | 100 | < 0.5 | < 2 | 0.41 | < 0.5 | 6 | 30 | 49 | 3.37 | < 10 | < 1 | 0.05 | < 10 | 0.53 | 350 |
| 122+00N 135+68E | 201 | 229 | 55 | 0.6 | 1.79 | 50 | 370 | < 0.5 | 4 | 0.27 | < 0.5 | 14 | 4 | 1915 | 3.55 | < 10 | < 1 | 0.11 | 10 | 0.29 | 1900 |
| 122+00N 137+00E | 201 | 229 | 5 | < 0.2 | 2.48 | < 2 | 70 | < 0.5 | < 2 | 0.47 | < 0.5 | 8 | 48 | 63 | 4.36 | < 10 | < 1 | 0.05 | < 10 | 0.61 | 345 |
| 122+00N 137+50E | 201 | 229 | 90 | < 0.2 | 2.33 | 4 | 90 | < 0.5 | < 2 | 0.34 | < 0.5 | 8 | 43 | 38 | 4.05 | < 10 | < 1 | 0.06 | < 10 | 0.51 | 275 |
| 122+00N 138+00E | 201 | 229 | < 5 | < 0.2 | 2.01 | < 2 | 70 | < 0.5 | < 2 | 0.29 | < 0.5 | 6 | 37 | 39 | 3.43 | < 10 | < 1 | 0.06 | < 10 | 0.47 | 245 |
| 122+00N 138+50E | 201 | 229 | < 5 | 0.4 | 2.36 | 10 | 90 | < 0.5 | < 2 | 0.23 | < 0.5 | 6 | 33 | 36 | 3.32 | < 10 | < 1 | 0.05 | 10 | 0.48 | 260 |
| 122+00N 139+00E | 201 | 229 | < 5 | < 0.2 | 2.13 | < 2 | 80 | < 0.5 | < 2 | 0.26 | < 0.5 | 7 | 29 | 35 | 4.43 | < 10 | < 1 | 0.03 | < 10 | 0.37 | 295 |
| 122+00N 139+50E | 201 | 229 | < 5 | < 0.2 | 2.07 | 10 | 70 | < 0.5 | < 2 | 0.23 | < 0.5 | 4 | 25 | 22 | 2.85 | < 10 | < 1 | 0.03 | < 10 | 0.29 | 155 |
| 122+00N 140+00E | 201 | 229 | < 5 | < 0.2 | 1.53 | 10 | 60 | < 0.5 | < 2 | 0.21 | < 0.5 | 4 | 25 | 28 | 3.97 | < 10 | < 1 | 0.02 | < 10 | 0.29 | 205 |
| 124N 130+00E | 201 | 229 | < 5 | < 0.2 | 1.96 | < 2 | 70 | < 0.5 | < 2 | 0.24 | < 0.5 | 4 | 28 | 27 | 2.43 | < 10 | < 1 | 0.04 | < 10 | 0.33 | 225 |
| 124N 130+50E | 201 | 229 | < 5 | < 0.2 | 1.87 | < 2 | 70 | < 0.5 | < 2 | 0.32 | < 0.5 | 7 | 40 | 31 | 4.04 | < 10 | < 1 | 0.04 | < 10 | 0.39 | 220 |
| 124N 131+00E | 201 | 229 | < 5 | < 0.2 | 2.36 | < 2 | 60 | < 0.5 | < 2 | 0.39 | < 0.5 | 6 | 35 | 47 | 3.46 | < 10 | < 1 | 0.05 | < 10 | 0.53 | 330 |
| 124N 131+50E | 201 | 229 | < 5 | < 0.2 | 1.83 | < 2 | 140 | < 0.5 | < 2 | 0.24 | < 0.5 | 1 | 14 | 18 | 1.45 | < 10 | < 1 | 0.05 | < 10 | 0.16 | 175 |
| 124N 132+50E | 201 | 229 | 45 | < 0.2 | 1.89 | < 2 | 120 | < 0.5 | < 2 | 0.40 | < 0.5 | 10 | 29 | 46 | 3.56 | < 10 | < 1 | 0.05 | < 10 | 0.49 | 400 |
| 124N 133+50E | 201 | 229 | 15 | < 0.2 | 1.98 | < 2 | 100 | < 0.5 | < 2 | 0.27 | < 0.5 | 5 | 25 | 26 | 3.82 | < 10 | < 1 | 0.06 | < 10 | 0.46 | 270 |
| 124N 134+00E | 201 | 229 | < 5 | < 0.2 | 2.59 | < 2 | 190 | < 0.5 | < 2 | 0.28 | < 0.5 | 5 | 17 | 31 | 3.60 | < 10 | < 1 | 0.05 | < 10 | 0.41 | 495 |
| 124N 135+00E | 201 | 229 | < 5 | < 0.2 | 2.37 | < 2 | 310 | < 0.5 | < 2 | 0.34 | < 0.5 | 6 | 25 | 27 | 3.18 | < 10 | < 1 | 0.06 | < 10 | 0.41 | 370 |
| 124N 135+50E | 201 | 229 | < 5 | < 0.2 | 2.26 | < 2 | 70 | < 0.5 | < 2 | 0.27 | < 0.5 | 3 | 18 | 16 | 1.63 | < 10 | < 1 | 0.04 | < 10 | 0.23 | 220 |
| 124N 136+00E | 201 | 229 | < 5 | < 0.2 | 2.04 | < 2 | 70 | < 0.5 | < 2 | 0.44 | < 0.5 | 7 | 34 | 38 | 4.38 | < 10 | < 1 | 0.04 | < 10 | 0.49 | 295 |
| 124N 136+50E | 201 | 229 | < 5 | < 0.2 | 1.31 | < 2 | 40 | < 0.5 | < 2 | 0.28 | < 0.5 | 5 | 28 | 15 | 2.08 | < 10 | < 1 | 0.06 | < 10 | 0.31 | 145 |
| 124N 137+00E | 201 | 229 | < 5 | < 0.2 | 1.84 | < 2 | 50 | < 0.5 | < 2 | 0.23 | < 0.5 | 3 | 25 | 22 | 2.08 | < 10 | < 1 | 0.03 | < 10 | 0.26 | 195 |
| 124N 137+50E | 201 | 229 | < 5 | < 0.2 | 1.67 | < 2 | 50 | < 0.5 | 2 | 0.25 | < 0.5 | 4 | 22 | 19 | 2.77 | < 10 | < 1 | 0.03 | < 10 | 0.27 | 155 |
| 124N 138+00E | 201 | 229 | < 5 | < 0.2 | 2.19 | < 2 | 80 | < 0.5 | < 2 | 0.26 | < 0.5 | 5 | 21 | 15 | 2.08 | < 10 | < 1 | 0.03 | < 10 | 0.30 | 155 |
| 124N 138+50E | 201 | 229 | < 5 | < 0.2 | 1.88 | 4 | 50 | < 0.5 | < 2 | 0.26 | < 0.5 | 4 | 21 | 19 | 2.12 | < 10 | < 1 | 0.04 | < 10 | 0.32 | 160 |
| 124N 139+00E | 201 | 229 | < 5 | < 0.2 | 1.39 | 4 | 40 | < 0.5 | < 2 | 0.23 | < 0.5 | 3 | 18 | 10 | 1.86 | < 10 | < 1 | 0.03 | < 10 | 0.11 | 105 |
| 124N 139+50E | 201 | 229 | < 5 | 0.2 | 1.75 | < 2 | 50 | < 0.5 | < 2 | 0.30 | < 0.5 | 3 | 22 | 17 | 2.47 | < 10 | < 1 | 0.04 | < 10 | 0.29 | 145 |
| 124N 140+00E | 201 | 229 | < 5 | < 0.2 | 1.41 | < 2 | 70 | < 0.5 | < 2 | 0.29 | < 0.5 | 3 | 22 | 15 | 1.34 | < 10 | < 1 | 0.07 | 10 | 0.29 | 130 |
| 126N 130+00E | 201 | 229 | < 5 | < 0.2 | 3.12 | < 2 | 240 | < 0.5 | < 2 | 0.82 | < 0.5 | 13 | 36 | 56 | 4.05 | 10 | < 1 | 0.10 | < 10 | 1.01 | 805 |
| 126N 130+50E | 201 | 229 | 20 | < 0.2 | 2.34 | < 2 | 60 | < 0.5 | < 2 | 0.39 | < 0.5 | 8 | 34 | 43 | 4.42 | < 10 | < 1 | 0.04 | < 10 | 0.61 | 275 |

CERTIFICATION: Jhai D Ma

# Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: RELIANCE GEOLOGICAL SERVICES INC.

241 E. 1ST. ST.
NORTH VANCOUVER, BC
V7L 1B4

Project : HAL
Comments:

Page Number :1-B
Total Pages :3
Certificate Date: 15-AUG-92
Invoice No. :I9219008
P.O. Number :770
Account :ILR

## CERTIFICATE OF ANALYSIS A9219008

| SAMPLE | PREP CODE | | Mo ppm | Na % | Ni ppm | P ppm | Pb ppm | Sb ppm | Sc ppm | Sr ppm | Ti % | Tl ppm | U ppm | V ppm | W ppm | Zn ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 122+00N 130+00E | 201 | 229 | < 1 | 0.01 | 9 | 1220 | 10 | < 2 | 1 | 72 | 0.04 | < 10 | < 10 | 97 | < 10 | 50 |
| 122+00N 130+50E | 201 | 229 | < 1 | 0.01 | 13 | 1440 | 16 | 8 | 3 | 50 | 0.08 | < 10 | < 10 | 132 | < 10 | 68 |
| 122+00N 131+00E | 201 | 229 | < 1 | 0.01 | 10 | 1060 | 10 | < 2 | 2 | 60 | 0.06 | < 10 | < 10 | 94 | < 10 | 62 |
| 122+00N 131+50E | 201 | 229 | < 1 | 0.01 | 11 | 1800 | 12 | 2 | 4 | 59 | 0.07 | < 10 | < 10 | 136 | < 10 | 56 |
| 122+00N 132+00E | 201 | 229 | < 1 | 0.01 | 14 | 1640 | 8 | 4 | 3 | 49 | 0.07 | < 10 | < 10 | 116 | < 10 | 60 |
| 122+00N 132+50E | 201 | 229 | < 1 | 0.01 | 15 | 1160 | 14 | < 2 | 4 | 52 | 0.09 | < 10 | < 10 | 123 | < 10 | 70 |
| 122+00N 133+00E | 201 | 229 | < 1 | 0.01 | 16 | 1450 | 14 | < 2 | 4 | 52 | 0.09 | < 10 | < 10 | 118 | < 10 | 70 |
| 122+00N 133+50E | 201 | 229 | < 1 | 0.01 | 15 | 1860 | 18 | < 2 | 3 | 55 | 0.08 | < 10 | < 10 | 123 | < 10 | 62 |
| 122+00N 134+00E | 201 | 229 | < 1 | 0.01 | 11 | 1820 | 2 | 2 | 4 | 58 | 0.10 | < 10 | < 10 | 131 | < 10 | 64 |
| 122+00N 134+50E | 201 | 229 | < 1 | 0.01 | 4 | 1420 | 10 | < 2 | 3 | 224 | 0.02 | < 10 | < 10 | 57 | < 10 | 48 |
| 122+00N 135+00E | 201 | 229 | < 1 | 0.01 | 4 | 1350 | 12 | < 2 | 4 | 234 | 0.02 | < 10 | < 10 | 63 | < 10 | 58 |
| 122+00N 135+50E | 201 | 229 | < 1 | 0.01 | 12 | 1480 | 8 | 2 | 3 | 52 | 0.08 | < 10 | < 10 | 99 | < 10 | 48 |
| 122+00N 135+68E | 201 | 229 | 8 | < 0.01 | 3 | 890 | 22 | 2 | 3 | 47 | < 0.01 | < 10 | < 10 | 36 | < 10 | 68 |
| 122+00N 137+00E | 201 | 229 | < 1 | 0.01 | 16 | 1610 | 14 | < 2 | 3 | 46 | 0.08 | < 10 | < 10 | 135 | < 10 | 54 |
| 122+00N 137+50E | 201 | 229 | < 1 | 0.01 | 15 | 1110 | 14 | 4 | 3 | 51 | 0.08 | < 10 | < 10 | 117 | < 10 | 62 |
| 122+00N 138+00E | 201 | 229 | 1 | 0.01 | 16 | 830 | 8 | < 2 | 3 | 35 | 0.09 | < 10 | < 10 | 104 | < 10 | 56 |
| 122+00N 138+50E | 201 | 229 | < 1 | 0.01 | 16 | 950 | 12 | < 2 | 3 | 29 | 0.05 | < 10 | < 10 | 79 | < 10 | 56 |
| 122+00N 139+00E | 201 | 229 | < 1 | 0.01 | 9 | 1250 | 10 | 2 | 2 | 48 | 0.06 | < 10 | < 10 | 113 | < 10 | 44 |
| 122+00N 139+50E | 201 | 229 | < 1 | 0.01 | 7 | 1030 | 6 | < 2 | 1 | 40 | 0.06 | < 10 | < 10 | 91 | < 10 | 40 |
| 122+00N 140+00E | 201 | 229 | < 1 | 0.01 | 8 | 870 | 6 | < 2 | 1 | 44 | 0.05 | < 10 | < 10 | 105 | < 10 | 36 |
| 124N 130+00E | 201 | 229 | < 1 | 0.01 | 9 | 900 | 16 | 4 | 2 | 39 | 0.06 | < 10 | < 10 | 83 | < 10 | 38 |
| 124N 130+50E | 201 | 229 | < 1 | 0.01 | 12 | 1260 | 16 | < 2 | 2 | 43 | 0.08 | < 10 | < 10 | 145 | < 10 | 42 |
| 124N 131+00E | 201 | 229 | < 1 | 0.01 | 12 | 1840 | 6 | < 2 | 2 | 42 | 0.06 | < 10 | < 10 | 111 | < 10 | 44 |
| 124N 131+50E | 201 | 229 | < 1 | 0.01 | 2 | 1580 | < 2 | < 2 | < 1 | 44 | 0.02 | < 10 | < 10 | 52 | < 10 | 38 |
| 124N 132+50E | 201 | 229 | < 1 | 0.01 | 17 | 1330 | 4 | 6 | 3 | 47 | 0.06 | < 10 | < 10 | 102 | < 10 | 48 |
| 124N 133+50E | 201 | 229 | < 1 | 0.01 | 10 | 1270 | 6 | 2 | 1 | 51 | 0.02 | < 10 | < 10 | 97 | < 10 | 46 |
| 124N 134+00E | 201 | 229 | < 1 | 0.01 | 6 | 1480 | 10 | 2 | < 1 | 85 | 0.01 | < 10 | < 10 | 80 | < 10 | 44 |
| 124N 135+00E | 201 | 229 | < 1 | 0.01 | 7 | 1550 | < 2 | < 2 | 1 | 151 | 0.04 | < 10 | < 10 | 94 | < 10 | 46 |
| 124N 135+50E | 201 | 229 | < 1 | 0.01 | 4 | 840 | 8 | < 2 | 1 | 54 | 0.05 | < 10 | < 10 | 62 | < 10 | 30 |
| 124N 136+00E | 201 | 229 | 1 | 0.01 | 11 | 2320 | 16 | 2 | 3 | 50 | 0.06 | < 10 | < 10 | 133 | < 10 | 44 |
| 124N 136+50E | 201 | 229 | < 1 | 0.01 | 8 | 460 | 6 | 4 | 2 | 47 | 0.11 | < 10 | < 10 | 92 | < 10 | 24 |
| 124N 137+00E | 201 | 229 | < 1 | < 0.01 | 5 | 650 | 6 | < 2 | 1 | 38 | 0.07 | < 10 | < 10 | 77 | < 10 | 32 |
| 124N 137+50E | 201 | 229 | < 1 | 0.01 | 7 | 930 | 10 | < 2 | 1 | 38 | 0.07 | < 10 | < 10 | 91 | < 10 | 32 |
| 124N 138+00E | 201 | 229 | 1 | 0.01 | 6 | 620 | 10 | 2 | 2 | 60 | 0.08 | < 10 | < 10 | 74 | < 10 | 34 |
| 124N 138+50E | 201 | 229 | < 1 | 0.01 | 7 | 710 | 4 | 2 | 2 | 46 | 0.07 | < 10 | < 10 | 75 | < 10 | 30 |
| 124N 139+00E | 201 | 229 | < 1 | < 0.01 | 3 | 490 | 4 | 4 | 1 | 45 | 0.07 | < 10 | < 10 | 80 | < 10 | 22 |
| 124N 139+50E | 201 | 229 | < 1 | 0.01 | 6 | 810 | < 2 | 2 | 2 | 52 | 0.07 | < 10 | < 10 | 89 | < 10 | 28 |
| 124N 140+00E | 201 | 229 | < 1 | 0.01 | 7 | 510 | 2 | < 2 | 2 | 44 | 0.09 | < 10 | < 10 | 58 | < 10 | 24 |
| 126N 130+00E | 201 | 229 | < 1 | 0.01 | 11 | 2540 | 4 | < 2 | 6 | 92 | 0.06 | < 10 | < 10 | 105 | < 10 | 92 |
| 126N 130+50E | 201 | 229 | < 1 | 0.01 | 9 | 2470 | 2 | < 2 | 3 | 45 | 0.07 | < 10 | < 10 | 113 | < 10 | 44 |

CERTIFICATION: Thai D Ma

# Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
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To: RELIANCE GEOLOGICAL SERVICES INC.

241 E. 1ST. ST.
NORTH VANCOUVER, BC
V7L 1B4

Project : HAL
Comments:


Certificate Date: 15-AUG-92
Invoice No. : I9219008
P.O. Number :770
Account :ILR

## CERTIFICATE OF ANALYSIS A9219008

| SAMPLE | PREP CODE | | Au ppb FA+AA | Ag ppm | Al % | As ppm | Ba ppm | Be ppm | Bi ppm | Ca % | Cd ppm | Co ppm | Cr ppm | Cu ppm | Fe % | Ga ppm | Hg ppm | K % | La ppm | Mg % | Mn ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 126N 131+00E | 201 | 229 | < 5 | < 0.2 | 3.09 | < 2 | 60 | < 0.5 | < 2 | 0.46 | < 0.5 | 8 | 42 | 43 | 4.55 | < 10 | < 1 | 0.05 | < 10 | 0.59 | 315 |
| 126N 131+50E | 201 | 229 | < 5 | < 0.2 | 2.59 | 2 | 80 | < 0.5 | 2 | 0.36 | < 0.5 | 7 | 23 | 35 | 3.12 | 10 | < 1 | 0.06 | < 10 | 0.51 | 325 |
| 126N 132+00E | 201 | 229 | < 5 | < 0.2 | 2.04 | 4 | 60 | < 0.5 | < 2 | 0.32 | < 0.5 | 4 | 19 | 20 | 2.67 | 10 | < 1 | 0.05 | < 10 | 0.33 | 185 |
| 126N 132+50E | 201 | 229 | < 5 | < 0.2 | 3.00 | 4 | 80 | < 0.5 | < 2 | 0.61 | < 0.5 | 13 | 30 | 54 | 4.55 | 10 | < 1 | 0.07 | < 10 | 0.89 | 505 |
| 126N 133+00E | 201 | 229 | < 5 | < 0.2 | 3.42 | < 2 | 500 | < 0.5 | < 2 | 0.96 | < 0.5 | 13 | 29 | 61 | 3.75 | 10 | < 1 | 0.08 | 10 | 0.82 | 1060 |
| 126N 133+50E | 201 | 229 | 95 | < 0.2 | 2.74 | < 2 | 220 | < 0.5 | < 2 | 0.32 | < 0.5 | 6 | 21 | 32 | 3.37 | 10 | < 1 | 0.07 | < 10 | 0.56 | 1375 |
| 126N 134+50E | 201 | 229 | 20 | < 0.2 | 1.96 | 4 | 70 | < 0.5 | < 2 | 0.28 | < 0.5 | 3 | 27 | 24 | 2.68 | < 10 | < 1 | 0.04 | < 10 | 0.22 | 120 |
| 126N 135+00E | 201 | 229 | < 5 | 0.2 | 2.62 | < 2 | 120 | < 0.5 | < 2 | 0.50 | < 0.5 | 5 | 33 | 45 | 3.03 | < 10 | < 1 | 0.05 | < 10 | 0.45 | 210 |
| 126N 135+50E | 201 | 229 | < 5 | < 0.2 | 2.69 | 4 | 60 | < 0.5 | < 2 | 0.39 | < 0.5 | 6 | 35 | 32 | 4.64 | < 10 | < 1 | 0.04 | < 10 | 0.53 | 235 |
| 126N 136+00E | 201 | 229 | 30 | < 0.2 | 1.96 | < 2 | 60 | < 0.5 | < 2 | 0.26 | < 0.5 | 5 | 30 | 23 | 3.15 | < 10 | < 1 | 0.05 | < 10 | 0.41 | 215 |
| 126N 136+50E | 201 | 229 | < 5 | < 0.2 | 1.94 | < 2 | 40 | < 0.5 | < 2 | 0.29 | < 0.5 | 4 | 21 | 14 | 2.47 | < 10 | < 1 | 0.03 | < 10 | 0.27 | 140 |
| 126N 137+00E | 201 | 229 | 130 | < 0.2 | 2.08 | < 2 | 60 | < 0.5 | < 2 | 0.29 | < 0.5 | 5 | 22 | 17 | 2.34 | 10 | < 1 | 0.05 | < 10 | 0.39 | 170 |
| 126N 137+50E | 201 | 229 | < 5 | < 0.2 | 2.15 | < 2 | 60 | < 0.5 | < 2 | 0.33 | < 0.5 | 5 | 26 | 24 | 3.67 | < 10 | < 1 | 0.04 | < 10 | 0.48 | 230 |
| 126N 138+00E | 201 | 229 | < 5 | < 0.2 | 1.97 | < 2 | 50 | < 0.5 | < 2 | 0.28 | < 0.5 | 6 | 28 | 21 | 4.38 | < 10 | < 1 | 0.04 | < 10 | 0.41 | 190 |
| 126N 138+50E | 201 | 229 | < 5 | < 0.2 | 2.95 | 6 | 170 | < 0.5 | < 2 | 0.81 | < 0.5 | 13 | 52 | 56 | 6.77 | < 10 | < 1 | 0.07 | 10 | 0.75 | 845 |
| 126N 139+00E | 201 | 229 | < 5 | < 0.2 | 1.58 | < 2 | 40 | < 0.5 | < 2 | 0.28 | < 0.5 | 2 | 15 | 10 | 1.13 | < 10 | < 1 | 0.04 | < 10 | 0.09 | 95 |
| 126N 139+50E | 201 | 229 | < 5 | < 0.2 | 1.78 | < 2 | 50 | < 0.5 | < 2 | 0.28 | < 0.5 | 4 | 25 | 21 | 2.55 | 10 | < 1 | 0.05 | < 10 | 0.29 | 330 |
| 126N 140+00E | 201 | 229 | < 5 | < 0.2 | 1.77 | < 2 | 40 | < 0.5 | < 2 | 0.33 | < 0.5 | 5 | 28 | 20 | 3.34 | < 10 | < 1 | 0.05 | < 10 | 0.39 | 260 |
| 128N 130+00E | 201 | 229 | 25 | < 0.2 | 1.87 | < 2 | 70 | < 0.5 | 4 | 0.71 | < 0.5 | 10 | 48 | 55 | 3.39 | < 10 | < 1 | 0.07 | < 10 | 0.87 | 300 |
| 128N 130+50E | 201 | 229 | 10 | < 0.2 | 1.80 | < 2 | 60 | < 0.5 | < 2 | 0.29 | < 0.5 | 8 | 42 | 32 | 3.79 | < 10 | < 1 | 0.06 | < 10 | 0.45 | 330 |
| 128N 131+00E | 201 | 229 | < 5 | < 0.2 | 1.73 | 12 | 70 | < 0.5 | < 2 | 0.35 | < 0.5 | 8 | 46 | 41 | 3.97 | < 10 | < 1 | 0.05 | < 10 | 0.62 | 360 |
| 128N 131+50E | 201 | 229 | < 5 | 0.4 | 2.20 | < 2 | 60 | < 0.5 | < 2 | 0.38 | < 0.5 | 8 | 42 | 31 | 2.60 | < 10 | < 1 | 0.06 | < 10 | 0.64 | 210 |
| 128N 132+00E | 201 | 229 | < 5 | < 0.2 | 2.56 | 8 | 50 | < 0.5 | < 2 | 0.52 | < 0.5 | 8 | 44 | 49 | 3.13 | < 10 | < 1 | 0.05 | < 10 | 0.67 | 240 |
| 128N 132+50E | 201 | 229 | 5 | < 0.2 | 2.63 | 2 | 80 | < 0.5 | 2 | 0.42 | < 0.5 | 7 | 45 | 40 | 2.98 | < 10 | < 1 | 0.06 | < 10 | 0.67 | 260 |
| 128N 133+00E | 201 | 229 | 5 | < 0.2 | 3.39 | < 2 | 340 | < 0.5 | < 2 | 0.37 | < 0.5 | 9 | 22 | 56 | 3.13 | < 10 | < 1 | 0.10 | < 10 | 0.58 | 585 |
| 128N 134+00E | 201 | 229 | < 5 | < 0.2 | 2.30 | < 2 | 140 | < 0.5 | < 2 | 0.71 | < 0.5 | 9 | 32 | 45 | 3.09 | 10 | < 1 | 0.08 | 10 | 0.69 | 410 |
| 128N 134+50E | 201 | 229 | < 5 | < 0.2 | 2.55 | 8 | 70 | < 0.5 | < 2 | 0.25 | < 0.5 | 6 | 27 | 26 | 4.38 | < 10 | < 1 | 0.04 | < 10 | 0.53 | 220 |
| 128N 135+00E | 201 | 229 | < 5 | < 0.2 | 3.15 | < 2 | 140 | < 0.5 | < 2 | 0.22 | < 0.5 | 9 | 35 | 43 | 4.58 | < 10 | < 1 | 0.10 | < 10 | 0.63 | 400 |
| 128N 135+50E | 201 | 229 | < 5 | < 0.2 | 1.97 | < 2 | 80 | < 0.5 | < 2 | 0.28 | < 0.5 | 7 | 41 | 28 | 4.55 | < 10 | < 1 | 0.05 | < 10 | 0.52 | 220 |
| 128N 136+00E | 201 | 229 | < 5 | 0.2 | 1.77 | 10 | 70 | < 0.5 | < 2 | 0.16 | < 0.5 | 2 | 24 | 8 | 1.03 | < 10 | < 1 | 0.04 | 10 | 0.22 | 85 |
| 128N 136+50E | 201 | 229 | < 5 | 0.2 | 3.10 | < 2 | 90 | < 0.5 | < 2 | 0.37 | < 0.5 | 8 | 73 | 33 | 4.88 | < 10 | < 1 | 0.05 | < 10 | 0.72 | 310 |
| 128N 137+00E | 201 | 229 | 95 | < 0.2 | 2.66 | < 2 | 90 | < 0.5 | < 2 | 0.34 | < 0.5 | 8 | 21 | 25 | 3.58 | 10 | < 1 | 0.06 | < 10 | 0.59 | 255 |
| 128N 137+50E | 201 | 229 | < 5 | < 0.2 | 2.02 | 12 | 60 | < 0.5 | < 2 | 0.26 | < 0.5 | 3 | 20 | 20 | 1.58 | < 10 | < 1 | 0.05 | 10 | 0.34 | 130 |
| 128N 138+00E | 201 | 229 | < 5 | < 0.2 | 1.80 | 8 | 70 | < 0.5 | < 2 | 0.24 | < 0.5 | 4 | 22 | 21 | 2.64 | < 10 | < 1 | 0.04 | < 10 | 0.34 | 165 |
| 128N 138+50E | 201 | 229 | < 5 | < 0.2 | 2.08 | < 2 | 70 | < 0.5 | < 2 | 0.24 | < 0.5 | 7 | 20 | 20 | 3.93 | < 10 | < 1 | 0.04 | < 10 | 0.46 | 255 |
| 128N 139+00E | 201 | 229 | < 5 | < 0.2 | 2.16 | < 2 | 70 | < 0.5 | < 2 | 0.19 | < 0.5 | 6 | 21 | 21 | 5.12 | < 10 | < 1 | 0.05 | < 10 | 0.45 | 300 |
| 128N 139+50E | 201 | 229 | < 5 | < 0.2 | 2.28 | < 2 | 70 | < 0.5 | < 2 | 0.21 | < 0.5 | 6 | 18 | 19 | 3.88 | 10 | < 1 | 0.04 | < 10 | 0.36 | 270 |
| 128N 140+00E | 201 | 229 | < 5 | < 0.2 | 1.59 | < 2 | 160 | < 0.5 | < 2 | 0.35 | < 0.5 | 2 | 14 | 11 | 1.58 | 10 | < 1 | 0.07 | 10 | 0.24 | 115 |
| 1400 ST 0000 | 201 | 229 | < 5 | < 0.2 | 3.19 | < 2 | 100 | < 0.5 | < 2 | 0.49 | < 0.5 | 12 | 21 | 48 | 5.06 | 10 | < 1 | 0.07 | < 10 | 0.98 | 365 |
| 1400 ST 0100 | 201 | 229 | < 5 | < 0.2 | 3.67 | < 2 | 90 | < 0.5 | < 2 | 0.35 | < 0.5 | 9 | 23 | 26 | 5.17 | 10 | < 1 | 0.05 | < 10 | 0.54 | 245 |

CERTIFICATION: Jhai D Ma

# Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
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To: RELIANCE GEOLOGICAL SERVICES INC.

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NORTH VANCOUVER, BC
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Project : HAL
Comments:


Certificate Date: 15-AUG-92
Invoice No. :I9219008
P.O. Number :770
Account :ILR

## CERTIFICATE OF ANALYSIS A9219008

| SAMPLE | PREP CODE | | Mo ppm | Na % | Ni ppm | P ppm | Pb ppm | Sb ppm | Sc ppm | Sr ppm | Ti % | Tl ppm | U ppm | V ppm | W ppm | Zn ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 126N 131+00E | 201 | 229 | < 1 | 0.01 | 8 | 1800 | 8 | < 2 | 4 | 49 | 0.08 | < 10 | < 10 | 138 | < 10 | 48 |
| 126N 131+50E | 201 | 229 | < 1 | 0.01 | 7 | 1240 | 2 | < 2 | 2 | 50 | 0.05 | < 10 | < 10 | 90 | < 10 | 46 |
| 126N 132+00E | 201 | 229 | < 1 | 0.01 | 5 | 770 | < 2 | < 2 | 1 | 61 | 0.05 | < 10 | < 10 | 90 | < 10 | 36 |
| 126N 132+50E | 201 | 229 | < 1 | 0.01 | 11 | 2040 | 16 | < 2 | 5 | 60 | 0.09 | < 10 | < 10 | 130 | < 10 | 64 |
| 126N 133+00E | 201 | 229 | < 1 | 0.01 | 10 | 1890 | 18 | < 2 | 5 | 237 | 0.07 | < 10 | < 10 | 109 | < 10 | 54 |
| 126N 133+50E | 201 | 229 | < 1 | 0.01 | 7 | 1230 | < 2 | < 2 | 1 | 104 | 0.03 | < 10 | < 10 | 83 | < 10 | 56 |
| 126N 134+50E | 201 | 229 | < 1 | 0.01 | 3 | 830 | 6 | < 2 | 1 | 57 | 0.04 | < 10 | < 10 | 97 | < 10 | 32 |
| 126N 135+00E | 201 | 229 | < 1 | 0.01 | 9 | 950 | 14 | < 2 | 3 | 68 | 0.08 | < 10 | < 10 | 100 | < 10 | 42 |
| 126N 135+50E | 201 | 229 | < 1 | < 0.01 | 9 | 1880 | 2 | < 2 | 3 | 42 | 0.06 | < 10 | < 10 | 130 | < 10 | 48 |
| 126N 136+00E | 201 | 229 | < 1 | 0.01 | 5 | 1130 | 6 | 2 | 2 | 45 | 0.07 | < 10 | < 10 | 103 | < 10 | 40 |
| 126N 136+50E | 201 | 229 | < 1 | < 0.01 | 1 | 1040 | 2 | < 2 | 2 | 42 | 0.07 | < 10 | < 10 | 86 | < 10 | 28 |
| 126N 137+00E | 201 | 229 | < 1 | 0.01 | 3 | 1230 | 2 | < 2 | 1 | 45 | 0.05 | < 10 | < 10 | 69 | < 10 | 36 |
| 126N 137+50E | 201 | 229 | < 1 | 0.01 | 5 | 2020 | 6 | < 2 | 2 | 47 | 0.05 | < 10 | < 10 | 104 | < 10 | 44 |
| 126N 138+00E | 201 | 229 | < 1 | 0.01 | 6 | 1100 | 6 | < 2 | 2 | 44 | 0.07 | < 10 | < 10 | 138 | < 10 | 42 |
| 126N 138+50E | 201 | 229 | 11 | 0.01 | 15 | 2450 | 10 | 2 | 7 | 66 | 0.07 | < 10 | < 10 | 168 | < 10 | 98 |
| 126N 139+00E | 201 | 229 | < 1 | 0.01 | < 1 | 460 | 2 | < 2 | 1 | 57 | 0.05 | < 10 | < 10 | 51 | < 10 | 20 |
| 126N 139+50E | 201 | 229 | < 1 | 0.01 | 3 | 870 | < 2 | 4 | 2 | 50 | 0.06 | < 10 | < 10 | 94 | < 10 | 30 |
| 126N 140+00E | 201 | 229 | < 1 | 0.01 | 5 | 700 | 4 | < 2 | 3 | 58 | 0.07 | < 10 | < 10 | 121 | < 10 | 36 |
| 128N 130+00E | 201 | 229 | < 1 | 0.01 | 17 | 1890 | < 2 | < 2 | 4 | 68 | 0.11 | < 10 | < 10 | 119 | < 10 | 52 |
| 128N 130+50E | 201 | 229 | < 1 | 0.01 | 9 | 1460 | < 2 | 2 | 1 | 40 | 0.05 | < 10 | < 10 | 128 | < 10 | 50 |
| 128N 131+00E | 201 | 229 | < 1 | 0.01 | 11 | 1360 | 8 | < 2 | 3 | 45 | 0.07 | < 10 | < 10 | 136 | < 10 | 46 |
| 128N 131+50E | 201 | 229 | < 1 | 0.01 | 10 | 1680 | 8 | < 2 | 3 | 46 | 0.08 | < 10 | < 10 | 85 | < 10 | 46 |
| 128N 132+00E | 201 | 229 | < 1 | 0.01 | 11 | 2270 | 2 | 2 | 3 | 49 | 0.08 | < 10 | < 10 | 97 | < 10 | 46 |
| 128N 132+50E | 201 | 229 | < 1 | 0.01 | 13 | 2340 | 4 | < 2 | 3 | 48 | 0.07 | < 10 | < 10 | 88 | < 10 | 48 |
| 128N 133+00E | 201 | 229 | < 1 | 0.01 | 9 | 890 | 2 | < 2 | 3 | 126 | 0.02 | < 10 | < 10 | 66 | < 10 | 46 |
| 128N 134+00E | 201 | 229 | < 1 | 0.01 | 12 | 1490 | 4 | 2 | 5 | 91 | 0.07 | < 10 | < 10 | 89 | < 10 | 88 |
| 128N 134+50E | 201 | 229 | 3 | 0.01 | 7 | 1070 | 4 | 2 | 3 | 47 | 0.08 | < 10 | < 10 | 115 | < 10 | 46 |
| 128N 135+00E | 201 | 229 | 4 | 0.01 | 16 | 790 | 6 | < 2 | 5 | 47 | 0.07 | < 10 | < 10 | 99 | < 10 | 64 |
| 128N 135+50E | 201 | 229 | 2 | 0.01 | 14 | 940 | 2 | < 2 | 3 | 39 | 0.07 | < 10 | < 10 | 131 | < 10 | 50 |
| 128N 136+00E | 201 | 229 | < 1 | < 0.01 | 3 | 380 | 6 | < 2 | 1 | 29 | 0.05 | < 10 | < 10 | 46 | < 10 | 24 |
| 128N 136+50E | 201 | 229 | 2 | 0.01 | 24 | 2330 | < 2 | < 2 | 3 | 43 | 0.05 | < 10 | < 10 | 110 | < 10 | 60 |
| 128N 137+00E | 201 | 229 | < 1 | 0.01 | 7 | 1140 | 6 | < 2 | 3 | 62 | 0.05 | < 10 | < 10 | 100 | < 10 | 48 |
| 128N 137+50E | 201 | 229 | 1 | < 0.01 | 7 | 870 | 6 | < 2 | 2 | 36 | 0.07 | < 10 | < 10 | 54 | < 10 | 30 |
| 128N 138+00E | 201 | 229 | 1 | < 0.01 | 7 | 990 | 8 | < 2 | 2 | 38 | 0.05 | < 10 | < 10 | 69 | < 10 | 36 |
| 128N 138+50E | 201 | 229 | < 1 | 0.01 | 6 | 1030 | < 2 | < 2 | 2 | 53 | 0.03 | < 10 | < 10 | 102 | < 10 | 44 |
| 128N 139+00E | 201 | 229 | < 1 | 0.01 | 5 | 1510 | 6 | < 2 | 1 | 49 | 0.02 | < 10 | < 10 | 114 | < 10 | 42 |
| 128N 139+50E | 201 | 229 | < 1 | 0.01 | 5 | 980 | 2 | < 2 | 1 | 52 | 0.03 | < 10 | < 10 | 108 | < 10 | 40 |
| 128N 140+00E | 201 | 229 | 4 | 0.01 | 1 | 430 | < 2 | < 2 | 1 | 62 | 0.04 | < 10 | < 10 | 57 | < 10 | 38 |
| 1400 ST 0000 | 201 | 229 | < 1 | 0.01 | 9 | 2490 | < 2 | < 2 | 6 | 54 | 0.14 | < 10 | < 10 | 143 | < 10 | 72 |
| 1400 ST 0100 | 201 | 229 | < 1 | 0.01 | 7 | 4190 | 10 | < 2 | 5 | 55 | 0.12 | < 10 | < 10 | 147 | < 10 | 60 |

CERTIFICATION: Jhai D'Ma

# Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221


To: RELIANCE GEOLOGICAL SERVICES INC.

241 E. 1ST. ST.
NORTH VANCOUVER, BC
V7L 1B4

Project : HAL
Comments:

Page Number :3-A
Total Pages :3
Certificate Date: 15-AUG-92
Invoice No. :19219008
P.O. Number :770
Account :ILR

## CERTIFICATE OF ANALYSIS A9219008

| SAMPLE | PREP CODE | | Au ppb FA+AA | Ag ppm | Al % | As ppm | Ba ppm | Be ppm | Bi ppm | Ca % | Cd ppm | Co ppm | Cr ppm | Cu ppm | Fe % | Ga ppm | Hg ppm | K % | La ppm | Mg % | Mn ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1400 ST 0200 | 201 | 229 | < 5 | < 0.2 | 3.40 | 4 | 110 | < 0.5 | 4 | 0.55 | < 0.5 | 13 | 21 | 47 | 5.51 | < 10 | < 1 | 0.05 | < 10 | 1.02 | 355 |
| 1400 ST 0300 | 201 | 229 | < 5 | < 0.2 | 2.80 | < 2 | 140 | < 0.5 | < 2 | 0.64 | < 0.5 | 12 | 30 | 53 | 5.63 | 10 | < 1 | 0.10 | < 10 | 0.99 | 405 |
| 1400 ST 0400 | 201 | 229 | 30 | < 0.2 | 2.47 | 8 | 120 | < 0.5 | < 2 | 0.34 | < 0.5 | 11 | 24 | 44 | 4.19 | < 10 | < 1 | 0.08 | < 10 | 0.61 | 250 |
| 1400 ST 0500 | 201 | 229 | < 5 | < 0.2 | 3.35 | 2 | 200 | < 0.5 | < 2 | 0.48 | < 0.5 | 11 | 23 | 63 | 4.93 | 10 | < 1 | 0.07 | 10 | 0.96 | 400 |
| 1400 ST 0600 | 201 | 229 | < 5 | < 0.2 | 2.66 | 22 | 220 | < 0.5 | 2 | 0.45 | < 0.5 | 10 | 33 | 33 | 3.94 | < 10 | < 1 | 0.09 | < 10 | 0.71 | 400 |
| 1400 ST 0700 | 201 | 229 | < 5 | < 0.2 | 1.89 | 4 | 50 | < 0.5 | < 2 | 0.24 | < 0.5 | 5 | 38 | 16 | 3.67 | < 10 | < 1 | 0.04 | < 10 | 0.31 | 160 |
| 1400 ST 0800 | 201 | 229 | < 5 | < 0.2 | 1.97 | < 2 | 200 | < 0.5 | < 2 | 1.06 | < 0.5 | 9 | 41 | 47 | 3.21 | < 10 | < 1 | 0.09 | 10 | 0.51 | 655 |
| 1400 ST 0900 | 201 | 229 | < 5 | < 0.2 | 2.21 | < 2 | 180 | < 0.5 | < 2 | 0.57 | < 0.5 | 8 | 38 | 31 | 3.75 | < 10 | < 1 | 0.08 | < 10 | 0.53 | 440 |
| 1400 ST 1000 | 201 | 229 | < 5 | 0.2 | 2.04 | < 2 | 270 | < 0.5 | < 2 | 1.25 | < 0.5 | 15 | 21 | 83 | 5.15 | 10 | < 1 | 0.10 | 10 | 0.55 | 1400 |
| 1400 ST 1100 | 201 | 229 | 5 | < 0.2 | 2.26 | 12 | 150 | < 0.5 | < 2 | 0.41 | < 0.5 | 13 | 17 | 68 | 5.35 | 10 | < 1 | 0.07 | < 10 | 0.73 | 685 |
| 1400 ST 1200 | 201 | 229 | < 5 | < 0.2 | 2.34 | < 2 | 140 | < 0.5 | 4 | 0.41 | < 0.5 | 15 | 52 | 77 | 4.74 | < 10 | < 1 | 0.07 | < 10 | 0.70 | 470 |
| 1400 ST 1300 | 201 | 229 | < 5 | < 0.2 | 1.92 | < 2 | 90 | < 0.5 | < 2 | 0.42 | < 0.5 | 11 | 56 | 41 | 4.83 | < 10 | < 1 | 0.06 | < 10 | 0.61 | 225 |
| 1400 ST 1400 | 201 | 229 | < 5 | < 0.2 | 1.91 | < 2 | 70 | < 0.5 | < 2 | 0.45 | < 0.5 | 7 | 36 | 50 | 3.41 | < 10 | < 1 | 0.04 | < 10 | 0.56 | 180 |
| 1400 ST 1500 | 201 | 229 | < 5 | < 0.2 | 1.59 | < 2 | 50 | < 0.5 | < 2 | 0.27 | < 0.5 | 6 | 34 | 27 | 3.02 | < 10 | < 1 | 0.03 | < 10 | 0.41 | 170 |
| L1550 ST 0000 | 201 | 229 | < 5 | < 0.2 | 1.76 | < 2 | 60 | < 0.5 | < 2 | 0.19 | < 0.5 | 4 | 18 | 24 | 2.71 | < 10 | < 1 | 0.03 | < 10 | 0.42 | 190 |
| L1550 ST 0100 | 201 | 229 | < 5 | < 0.2 | 2.44 | < 2 | 50 | < 0.5 | < 2 | 0.22 | < 0.5 | 5 | 24 | 53 | 3.77 | < 10 | < 1 | 0.02 | < 10 | 0.38 | 175 |
| L1550 ST 0200 | 201 | 229 | < 5 | < 0.2 | 2.31 | < 2 | 130 | < 0.5 | < 2 | 0.27 | < 0.5 | 6 | 25 | 44 | 3.37 | 10 | < 1 | 0.05 | < 10 | 0.33 | 755 |
| L1550 ST 0300 | 201 | 229 | < 5 | < 0.2 | 2.69 | < 2 | 220 | < 0.5 | < 2 | 0.37 | < 0.5 | 7 | 37 | 44 | 4.43 | 10 | < 1 | 0.07 | < 10 | 0.52 | 415 |
| L1550 ST 0400 | 201 | 229 | < 5 | 0.6 | 2.77 | < 2 | 100 | < 0.5 | < 2 | 0.34 | < 0.5 | 6 | 22 | 34 | 4.33 | 10 | < 1 | 0.06 | < 10 | 0.54 | 335 |
| L1550 ST 0500 | 201 | 229 | < 5 | < 0.2 | 2.29 | 16 | 70 | < 0.5 | < 2 | 0.30 | < 0.5 | 7 | 18 | 26 | 3.04 | < 10 | < 1 | 0.05 | < 10 | 0.47 | 265 |
| L1550 ST 0600 | 201 | 229 | < 5 | < 0.2 | 2.24 | 24 | 80 | < 0.5 | < 2 | 0.50 | < 0.5 | 9 | 25 | 39 | 4.46 | < 10 | < 1 | 0.06 | < 10 | 0.73 | 330 |
| L1550 ST 0700 | 201 | 229 | < 5 | 1.0 | 2.03 | < 2 | 100 | < 0.5 | < 2 | 0.45 | < 0.5 | 7 | 19 | 29 | 3.03 | < 10 | < 1 | 0.07 | < 10 | 0.50 | 450 |
| L1550 ST 0800 | 201 | 229 | < 5 | 0.2 | 1.95 | < 2 | 110 | < 0.5 | < 2 | 0.41 | < 0.5 | 6 | 22 | 32 | 2.87 | < 10 | < 1 | 0.06 | < 10 | 0.49 | 600 |
| L1550 ST 0900 | 201 | 229 | < 5 | < 0.2 | 2.64 | 2 | 70 | < 0.5 | < 2 | 0.48 | < 0.5 | 10 | 34 | 39 | 5.09 | 10 | < 1 | 0.07 | < 10 | 0.85 | 365 |
| L1550 ST 1000 | 201 | 229 | < 5 | < 0.2 | 2.15 | < 2 | 100 | < 0.5 | < 2 | 0.32 | < 0.5 | 9 | 33 | 39 | 4.55 | < 10 | < 1 | 0.07 | < 10 | 0.62 | 455 |
| L1550 ST 1100 | 201 | 229 | < 5 | < 0.2 | 2.19 | < 2 | 60 | < 0.5 | < 2 | 0.33 | < 0.5 | 6 | 37 | 19 | 3.84 | < 10 | < 1 | 0.05 | < 10 | 0.46 | 355 |
| L1550 ST 1200 | 201 | 229 | < 5 | < 0.2 | 2.95 | 6 | 70 | < 0.5 | < 2 | 0.49 | < 0.5 | 11 | 57 | 51 | 4.43 | < 10 | < 1 | 0.05 | < 10 | 0.82 | 265 |
| L1550 ST 1300 | 201 | 229 | < 5 | < 0.2 | 2.25 | < 2 | 100 | < 0.5 | < 2 | 0.41 | < 0.5 | 10 | 52 | 50 | 4.28 | < 10 | < 1 | 0.06 | < 10 | 0.80 | 280 |
| L1550 ST 1400 | 201 | 229 | < 5 | < 0.2 | 1.88 | 6 | 80 | < 0.5 | < 2 | 0.47 | < 0.5 | 8 | 34 | 46 | 3.04 | < 10 | < 1 | 0.05 | < 10 | 0.76 | 360 |
| L1550 ST 1500 | 201 | 229 | < 5 | < 0.2 | 1.21 | 6 | 70 | < 0.5 | < 2 | 0.30 | < 0.5 | 7 | 54 | 24 | 3.09 | < 10 | < 1 | 0.08 | < 10 | 0.42 | 260 |

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Page Number :3-B
Total Pages :3
Certificate Date: 15-AUG-92
Invoice No. :I9219008
P.O. Number :770
Account :ILR

## CERTIFICATE OF ANALYSIS A9219008

| SAMPLE | PREP CODE | | Mo ppm | Na % | Ni ppm | P ppm | Pb ppm | Sb ppm | Sc ppm | Sr ppm | Ti % | Tl ppm | U ppm | V ppm | W ppm | Zn ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1400 ST 0200 | 201 | 229 | < 1 | 0.01 | 9 | 3070 | 10 | < 2 | 6 | 51 | 0.08 | < 10 | < 10 | 154 | < 10 | 72 |
| 1400 ST 0300 | 201 | 229 | 1 | 0.01 | 10 | 2880 | 4 | < 2 | 6 | 78 | 0.08 | < 10 | < 10 | 169 | < 10 | 78 |
| 1400 ST 0400 | 201 | 229 | < 1 | < 0.01 | 7 | 1160 | 12 | < 2 | 4 | 47 | 0.06 | < 10 | < 10 | 121 | < 10 | 60 |
| 1400 ST 0500 | 201 | 229 | < 1 | 0.01 | 11 | 2530 | 12 | < 2 | 5 | 71 | 0.13 | < 10 | < 10 | 132 | < 10 | 92 |
| 1400 ST 0600 | 201 | 229 | < 1 | < 0.01 | 20 | 1280 | 2 | < 2 | 3 | 51 | 0.03 | < 10 | < 10 | 93 | < 10 | 84 |
| 1400 ST 0700 | 201 | 229 | 1 | < 0.01 | 9 | 1190 | < 2 | < 2 | 2 | 28 | 0.06 | < 10 | < 10 | 96 | < 10 | 44 |
| 1400 ST 0800 | 201 | 229 | 2 | 0.01 | 12 | 1050 | 6 | < 2 | 6 | 135 | 0.08 | < 10 | < 10 | 100 | < 10 | 58 |
| 1400 ST 0900 | 201 | 229 | 1 | 0.01 | 9 | 1110 | 8 | < 2 | 4 | 71 | 0.10 | < 10 | < 10 | 129 | < 10 | 48 |
| 1400 ST 1000 | 201 | 229 | < 1 | 0.01 | 6 | 1670 | 20 | < 2 | 12 | 89 | 0.01 | < 10 | < 10 | 136 | < 10 | 62 |
| 1400 ST 1100 | 201 | 229 | < 1 | 0.01 | 6 | 1410 | 6 | < 2 | 6 | 54 | 0.07 | < 10 | < 10 | 146 | < 10 | 98 |
| 1400 ST 1200 | 201 | 229 | < 1 | 0.01 | 13 | 990 | 6 | < 2 | 5 | 49 | 0.15 | < 10 | < 10 | 157 | < 10 | 100 |
| 1400 ST 1300 | 201 | 229 | 1 | 0.01 | 16 | 670 | 8 | < 2 | 4 | 48 | 0.15 | < 10 | < 10 | 173 | < 10 | 68 |
| 1400 ST 1400 | 201 | 229 | 1 | 0.01 | 10 | 1970 | < 2 | < 2 | 3 | 43 | 0.10 | < 10 | < 10 | 101 | < 10 | 46 |
| 1400 ST 1500 | 201 | 229 | < 1 | < 0.01 | 10 | 1610 | 8 | < 2 | 2 | 27 | 0.07 | < 10 | < 10 | 91 | < 10 | 40 |
| L1550 ST 0000 | 201 | 229 | < 1 | < 0.01 | 6 | 1070 | 2 | < 2 | 2 | 27 | 0.05 | < 10 | < 10 | 72 | < 10 | 44 |
| L1550 ST 0100 | 201 | 229 | < 1 | < 0.01 | 8 | 1560 | 4 | < 2 | 2 | 22 | 0.04 | < 10 | < 10 | 91 | < 10 | 42 |
| L1550 ST 0200 | 201 | 229 | 1 | 0.01 | 7 | 1370 | 4 | < 2 | 1 | 58 | 0.04 | < 10 | < 10 | 102 | < 10 | 62 |
| L1550 ST 0300 | 201 | 229 | < 1 | 0.01 | 10 | 1560 | 2 | 2 | 3 | 103 | 0.06 | < 10 | < 10 | 131 | < 10 | 66 |
| L1550 ST 0400 | 201 | 229 | < 1 | 0.01 | 7 | 1290 | 4 | < 2 | 2 | 58 | 0.06 | < 10 | < 10 | 120 | < 10 | 68 |
| L1550 ST 0500 | 201 | 229 | 1 | 0.01 | 6 | 970 | 10 | < 2 | 2 | 50 | 0.05 | < 10 | < 10 | 93 | < 10 | 48 |
| L1550 ST 0600 | 201 | 229 | < 1 | 0.01 | 9 | 2290 | < 2 | < 2 | 2 | 51 | 0.06 | < 10 | < 10 | 118 | < 10 | 66 |
| L1550 ST 0700 | 201 | 229 | < 1 | 0.01 | 7 | 1550 | 10 | < 2 | 1 | 55 | 0.04 | < 10 | < 10 | 84 | < 10 | 64 |
| L1550 ST 0800 | 201 | 229 | < 1 | 0.01 | 6 | 1630 | < 2 | < 2 | 1 | 56 | 0.02 | < 10 | < 10 | 87 | < 10 | 70 |
| L1550 ST 0900 | 201 | 229 | < 1 | 0.01 | 9 | 2320 | 8 | < 2 | 5 | 51 | 0.08 | < 10 | < 10 | 142 | < 10 | 82 |
| L1550 ST 1000 | 201 | 229 | 2 | 0.01 | 9 | 970 | < 2 | < 2 | 3 | 59 | 0.08 | < 10 | < 10 | 144 | < 10 | 74 |
| L1550 ST 1100 | 201 | 229 | < 1 | 0.01 | 10 | 1240 | 2 | < 2 | 3 | 50 | 0.12 | < 10 | < 10 | 126 | < 10 | 70 |
| L1550 ST 1200 | 201 | 229 | 2 | 0.01 | 15 | 2200 | 2 | 2 | 5 | 48 | 0.11 | < 10 | < 10 | 137 | < 10 | 66 |
| L1550 ST 1300 | 201 | 229 | < 1 | 0.01 | 16 | 2100 | < 2 | 2 | 4 | 52 | 0.10 | < 10 | < 10 | 129 | < 10 | 50 |
| L1550 ST 1400 | 201 | 229 | < 1 | 0.01 | 13 | 1390 | < 2 | 2 | 3 | 50 | 0.07 | < 10 | < 10 | 78 | < 10 | 98 |
| L1550 ST 1500 | 201 | 229 | < 1 | 0.01 | 9 | 890 | < 2 | < 2 | 2 | 40 | 0.12 | < 10 | < 10 | 135 | < 10 | 40 |

CERTIFICATION: Jhai D Ma

**APPENDIX C**

Statistical Analysis

# SOIL SAMPLE GEOCHEMISTRY ON THE HAL PROPERTY

By

A.M.S.Clark, Ph.D., FGAC, P.Geo.(B.C.)
SEGURO CONSULTING INC.

27 August 1992

## INTRODUCTION

An investigation of the distribution of gold and copper in soil samples from the Hal Property was carried out between 15 and 27 August 1992.

This report is based on an evaluation of the geochemical analyses only, the author has not visited the property.

A total of 110 samples were collected from one main grid and additional lines on the property. Statistics were undertaken on all samples together.

## DISCUSSION

Summary statistics and correlation coefficients have been calculated for some of the elements and histograms have been plotted for gold and copper. Gold values are average with a few high values (up to 130 ppb Au). Copper is low with only a single high value, (see Summary Statistics Table). There is no correlation between copper and gold, but there is a moderate correlation between copper and molybdenum, and a weak correlation between copper and silver (see Correlation Coefficient Table).

The histogram of gold shows a normal Gaussian distribution to about 50 ppb Au, with several high values to 130 ppb Au. Similarly, copper shows an approximately normal distribution to 75 ppm, with a few higher values to 85 ppm and a single very high value at 1914 ppm Cu.

The 'breakpoints' for the symbol sizes used on the symbol maps were determined by inspection of the histograms. The following are the 'breakpoints' chosen as showing the most useful pattern of values on the maps:

| | | |
|---|---|---|
| Gold: | Low values | >=20 and <40 ppb Au |
| | Higher values | >=40 ppb Au |
| Copper: | Low values | >=50 and <70 ppm Cu |
| | Higher values | >=70 ppm Cu |

The symbol maps of the element values (in back pocket) indicate no significant spatial association of gold and copper, and no concentration of higher values in any specific area.

## CONCLUSION

The values for gold and copper in the soils are very low for copper, and moderate for gold. The higher values of gold and copper do not show any spatial association with one another, nor do they show any grouping of values in any particular area of the grid.

# CERTIFICATE

I, ANTHONY M.S. CLARK, of 2988 Fleet Street, Coquitlam, B.C., do hereby state that:

1. I am a graduate of the University of Cape Town, Cape Town, South Africa, with a Bachelor of Science Degree in Geology, 1963, and of Memorial University, St. John's, Newfoundland, with a Doctor of Philosophy Degree in Geology, 1974.

2. I am a Fellow in good standing with the Geological Association of Canada, and registered as a Professional Geologist with the Association of Professional Engineers, Geologists and Geophysicists of Alberta.

3. I actively pursued my career as an exploration geologist for twenty-three years from 1963 to 1986, since when I have undertaken consulting in the fields of mineral exploration and computer applications to exploration.

4. The information, opinions, and recommendations in this report are based on information obtained by other personnel who undertook the fieldwork on the property, and on published and unpublished literature. I have not visited the subject property.

5. I have no interest, direct or indirect, in the subject claims or the securities of Swannell Minerals Corporation.

6. I consent to the use of this report in Prospectus or Statement of Material Facts for the purpose of private or public financing.

Anthony M.S. Clark, Ph.D., F.G.A.C. P.Geo. (B.C.)

Dated at Coquitlam, B.C.,
27 Aug 1992

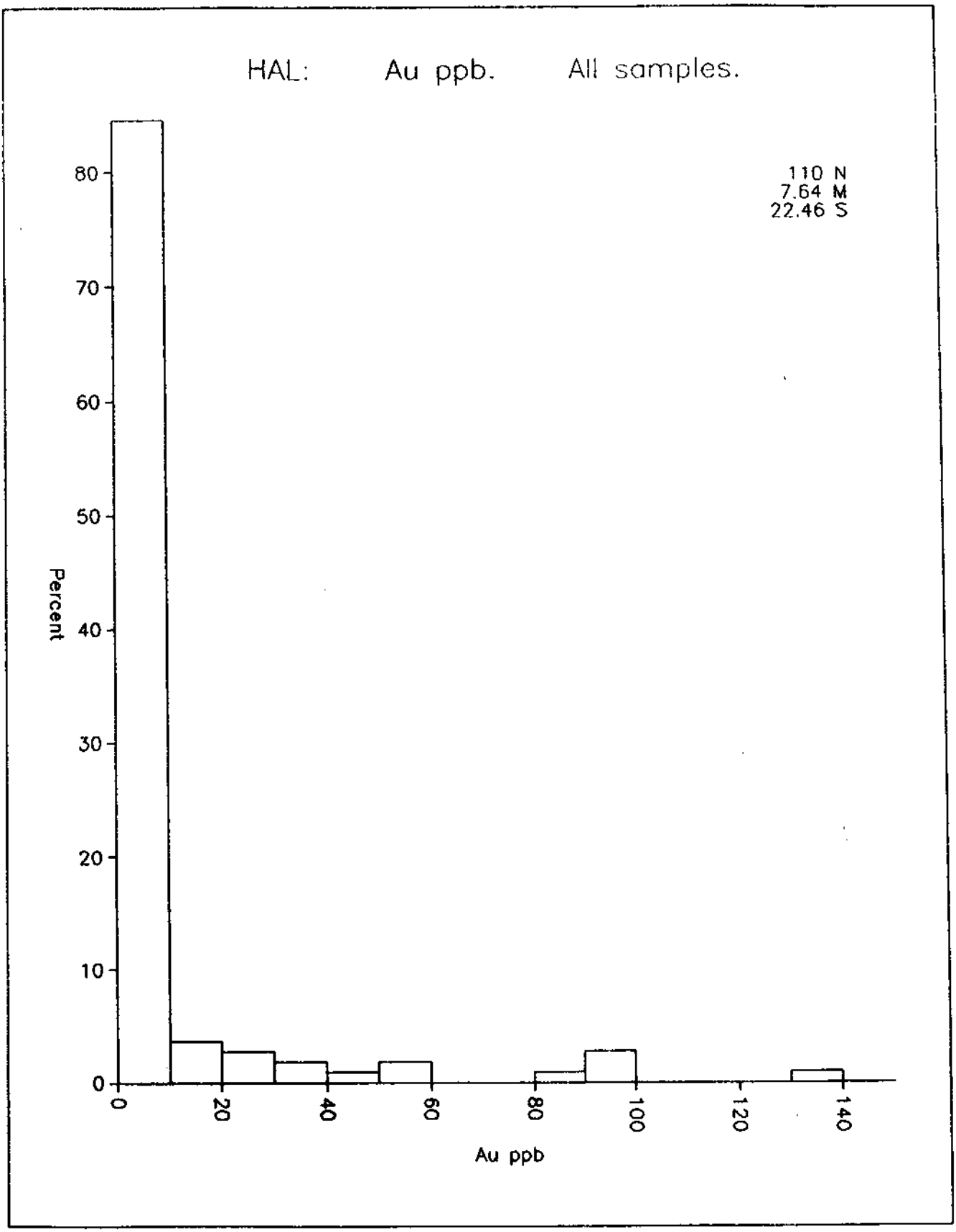
HAL Property:

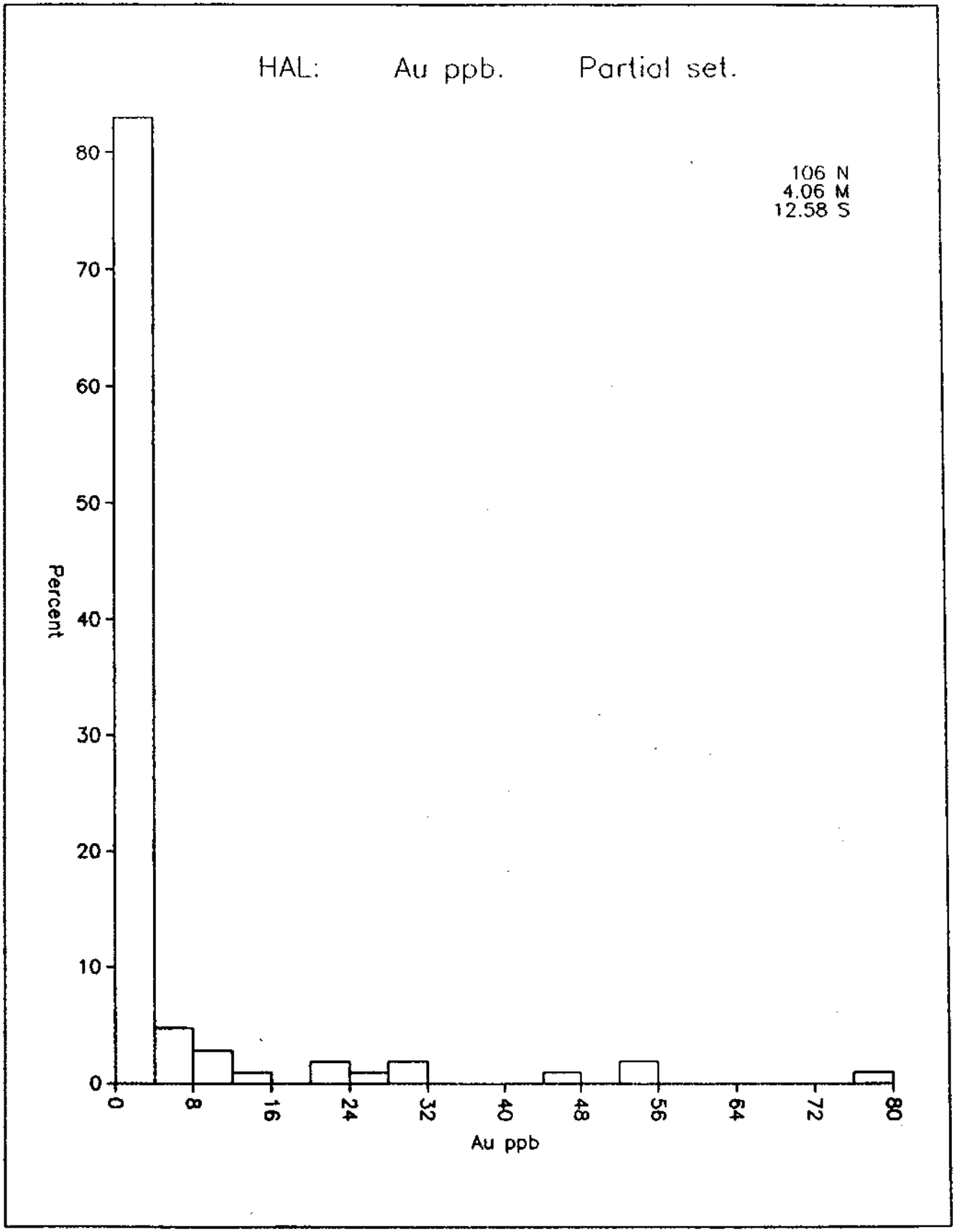
Pearson Correlation Coefficients

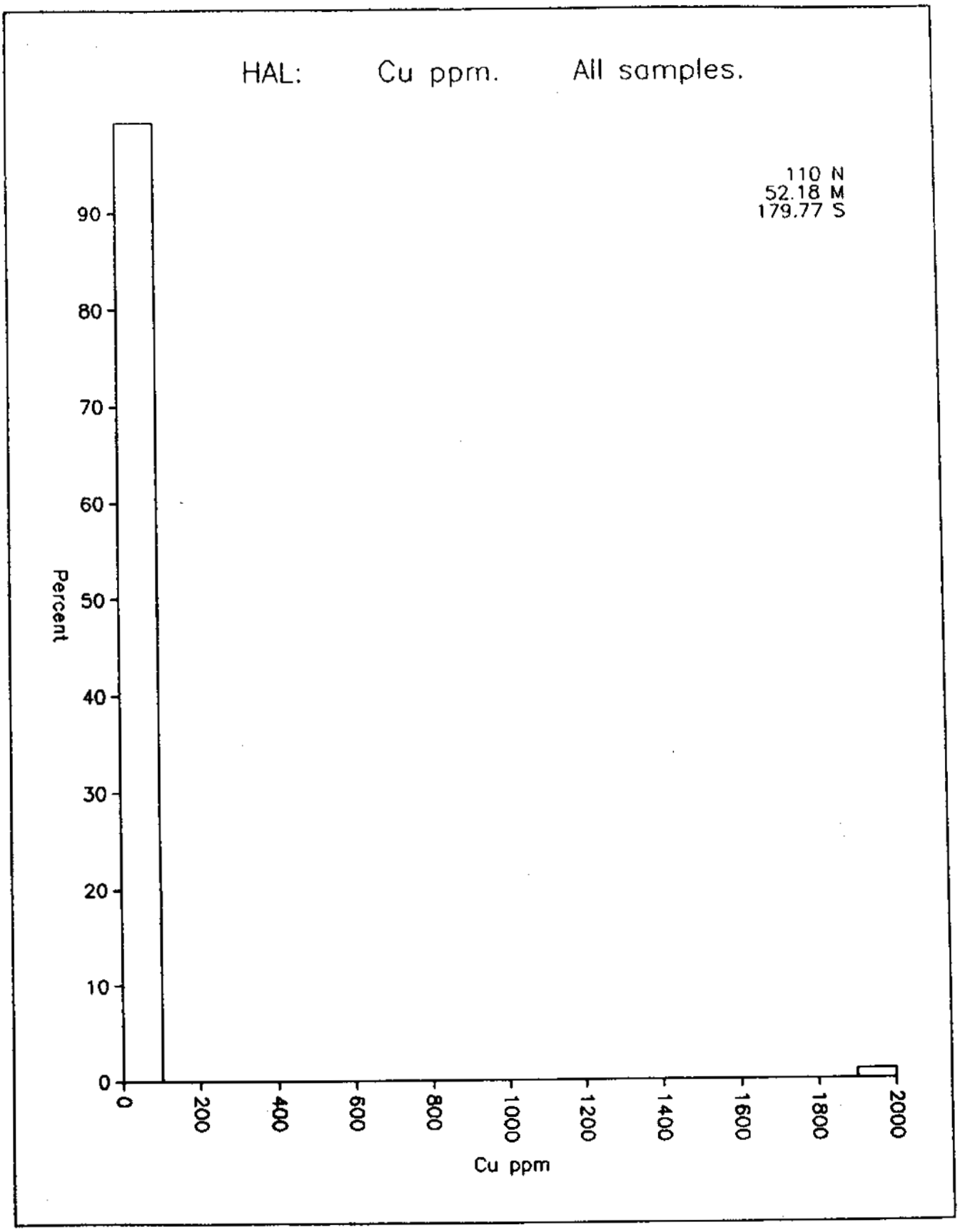
| | Au_ppb | Cu_ppm | Mo_ppm | Ag_ppm | Sr_ppm |
|---|---|---|---|---|---|
| Au_ppb | 1. | 0.1990 | 0.0120 | 0.0027 | 0.1213 |
| Cu_ppm | 0.1990 | 1. | 0.4986 | 0.3839 | -0.0158 |
| Mo_ppm | 0.0120 | 0.4986 | 1. | 0.1445 | -0.0271 |
| Ag_ppm | 0.0027 | 0.3839 | 0.1445 | 1. | -0.0615 |
| Sr_ppm | 0.1213 | -0.0158 | -0.0271 | -0.0615 | 1. |

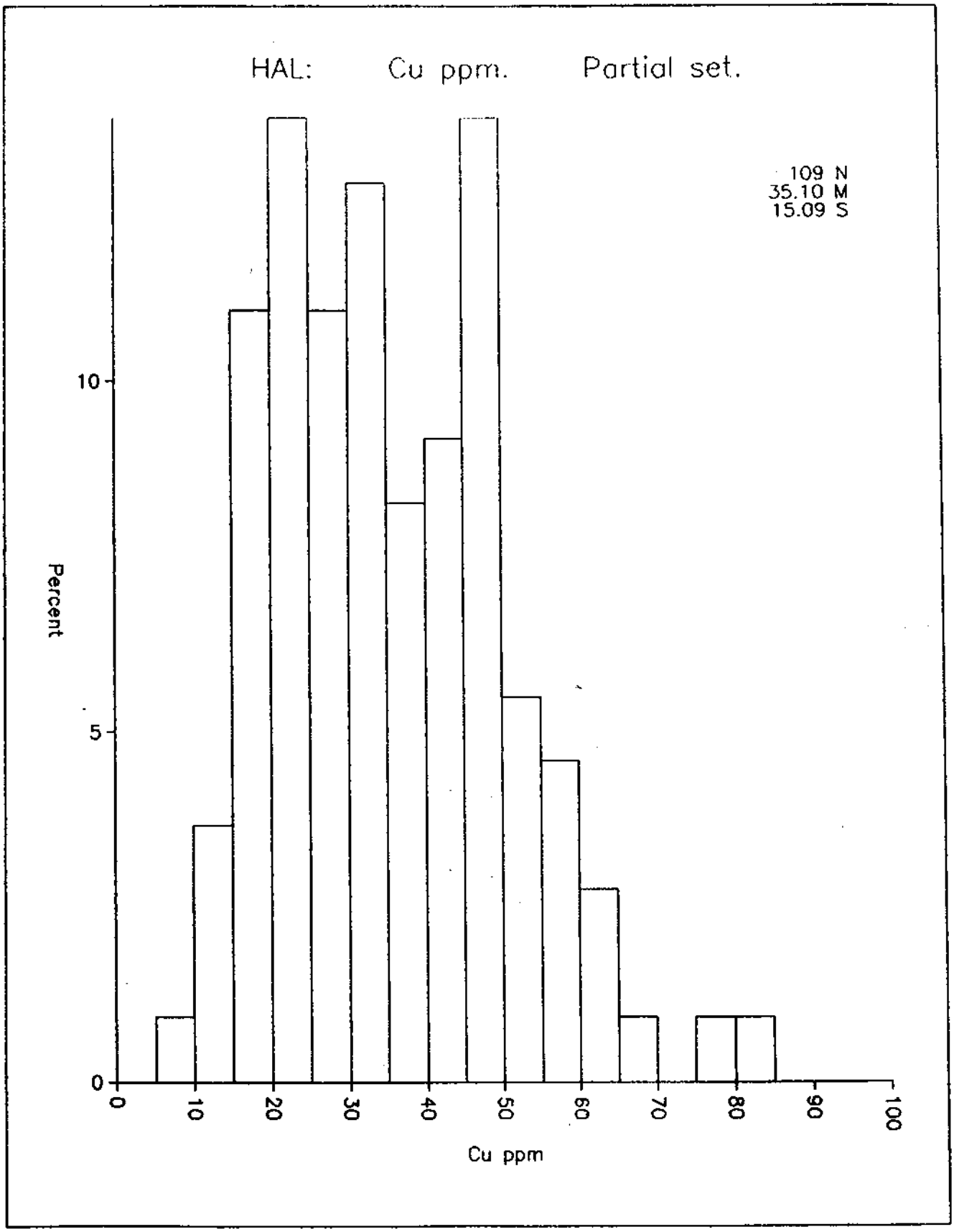
Summary Statistics

| | Au_ppb | Cu_ppm | Mo_ppm | Ag_ppm | Sr_ppm |
|---|---|---|---|---|---|
| Number | 110 | 110 | 110 | 110 | 110 |
| Mean | 7.64 | 52.18 | 0.47 | 0.038 | 59.12 |
| Std Dev | 22.46 | 179.77 | 1.46 | 0.139 | 35.18 |
| Variance | 504 | 32319 | 2 | 0.0 | 1238 |
| Maximum | 130 | 1914 | 11 | 1.0 | 237 |
| Minimum | 0 | 8 | 0 | 0.0 | 22 |
| Range | 130 | 1906 | 11 | 1.0 | 215 |
| Coef Var | 294.1197 | 344.5163 | 309.5590 | 365.2253 | 59.5061 |
| Std Err | 2.1415 | 17.1409 | 0.1395 | 0.0133 | 3.3542 |
| Median | 0.0 | 33.0 | 0.0 | 0.00 | 50.0 |
| Mode | 0 | 31 | 0 | 0.0 | 47 |


HAL: Au ppb. All samples.
110 N
7.64 M
22.46 S
Percent
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120
140
Au ppb


HAL: Au ppb. Partial set.
106 N
4.06 M
12.58 S
Percent
80
70
60
50
40
30
20
10
0
0
8
16
24
32
40
48
56
64
72
80
Au ppb


HAL: Cu ppm. All samples.
110 N
52.18 M
179.77 S
Percent
90
80
70
60
50
40
30
20
10
0
0
200
400
600
800
1000
1200
1400
1600
1800
2000
Cu ppm


HAL: Cu ppm. Partial set.
109 N
35.10 M
15.09 S
Percent
0
5
10
0
10
20
30
40
50
60
70
80
90
100
Cu ppm

Halobia Creek

1500
1250
1000
1750
1400
1550

4A
mag ep 5 cm.
4A
4A

13000 E
14000 E
12800 N
12600 N
12400 N
12200 N

mag mal, lim
x 12072
9230, 120
4A
3920, 225
(2078)
x mal lim

4B
mag
4B
mag
trace ep
4B
mag

4A mal trace chpy
mag lim
(12081 5120, 395
(12080 1905, 25
(12079 5960, 20
4A

GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,588

P. D. LERICHE
BRITISH COLUMBIA
GEOSCIENTIST

0 100 200 500 750 1000 METRES

**HOGEM BATHOLITH**

- 4A Quartz Monzonite
- 4B Granodiorite, Monzodiorite

outcrop

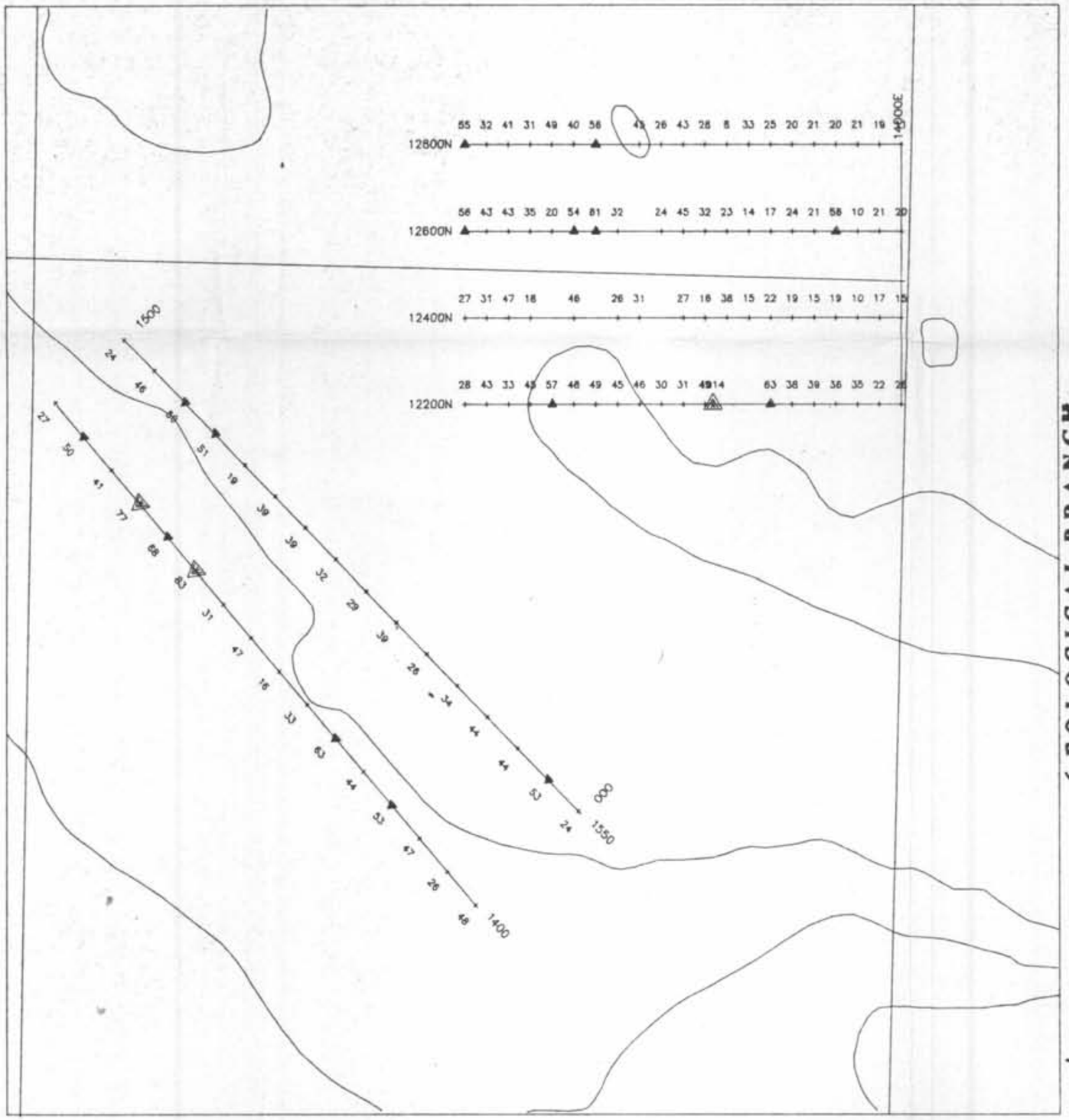
dyke

12078 x
3920,225 rock sample location and i.d.
Cu (ppm), Au (ppb)

mal - malachite
mag - magnetite
chpy - chalcopyrite
lim - limonite
ep - epidote

N

| SWANNELL MINERALS CORPORATION | | |
|---|---|---|
| HAL PROPERTY<br>OMINECA M.D., B.C. | | |
| GEOLOGY and GEOCHEMISTRY | | |
| Scale 1 : 10,000 | N.T.S. 93-N/6E,W | Drawn by g.e.l. |
| Date August 1992 | Geologist | Figure 6 |
| REBAGLIATI GEOLOGICAL CONSULTING LTD. | | |
| RELIANCE GEOLOGICAL SERVICES INC. | | |




N

Cu ppm

>=50 and <70 ppm Cu

>=70 ppm Cu

PROFESSIONAL ENGINEER
PROVINCE OF
P. D. LERICHE
BRITISH COLUMBIA
GEOSCIENTIST

0 1000
metres

GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,588

SWANNELL MINERALS CORPORATION

HAL PROPERTY
British Columbia

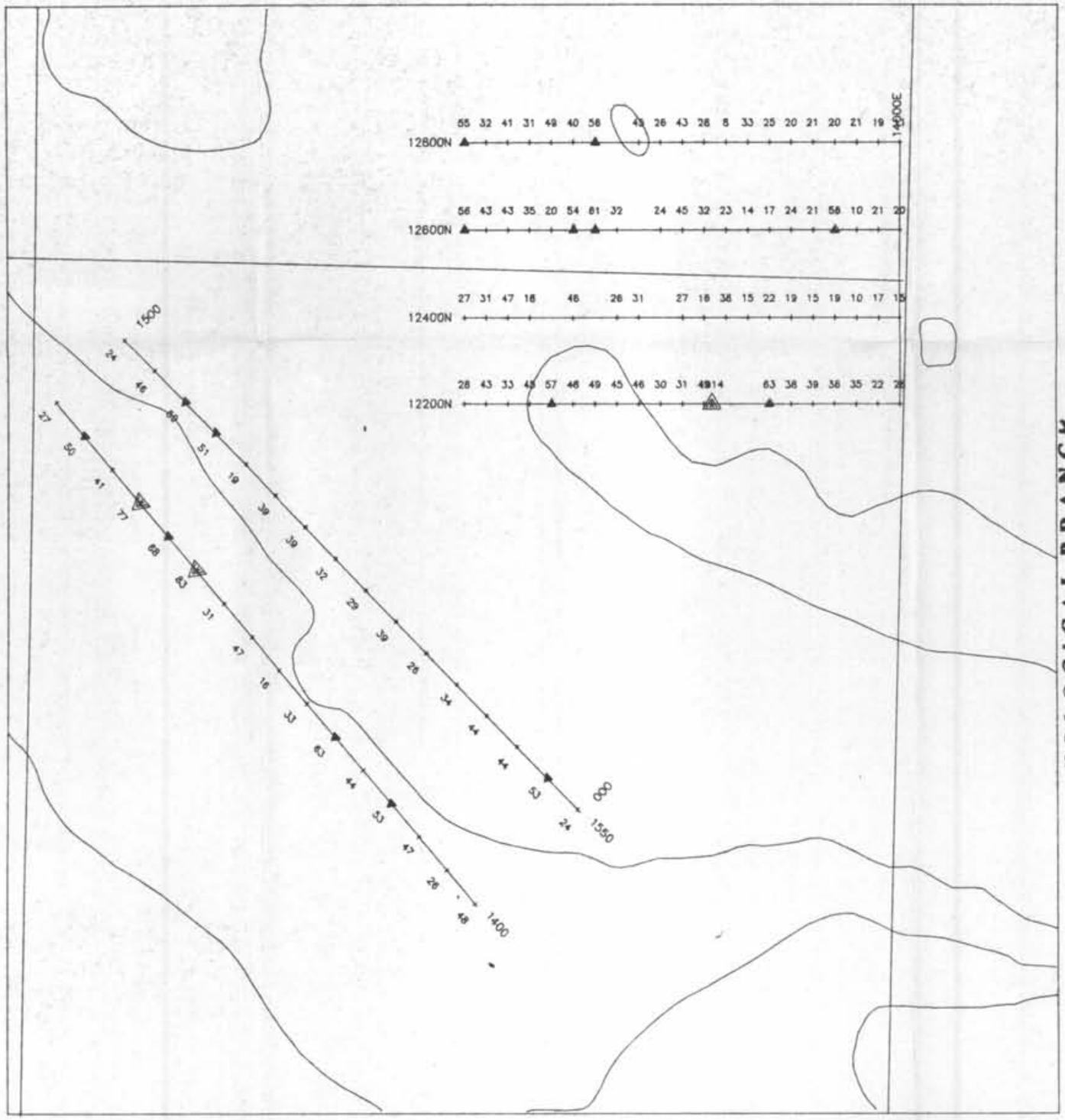
OMINECA M.D. 93N/6E,W

DETAILED SOIL GEOCHEMISTRY
COPPER

RELIANCE GEOLOGICAL SERVICES INC.

| DATE: 26 Aug. 1992 | SCALE: 1 : 10000 |
|---|---|
| Drawn By: TONY CLARK CONSULTING | |

FIG. 7




N

Cu ppm

>=50 and <70 ppm Cu

>=70 ppm Cu

1000

metres

GEOLOGICAL BRANCH
ASSESSMENT REPORT

22,588

SWANNELL MINERALS CORPORATION

HAL PROPERTY
British Columbia

OMINECA M.D. 93N/6E,W

DETAILED SOIL GEOCHEMISTRY
COPPER

RELIANCE GEOLOGICAL SERVICES INC.

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|---|---|
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FIG. 8