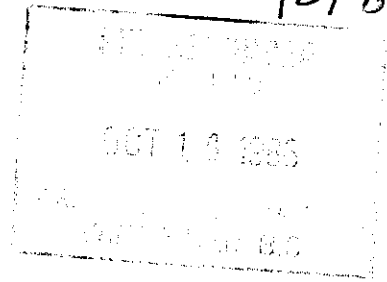


86-615-15201

10/87



Owner(s): Vital Resources Ltd.
Lemming Resources Ltd.

Operator: LEMMING RESOURCES LTD.

ASSESSMENT REPORT

MAGNETOMETER SURVEY - ROCK SAMPLING

SOUP CLAIMS

OMINECA MINING DIVISION

94D/8E

56°28'N, 126°03'W
28.4' 041

FILMED

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,201

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
LOCATION AND ACCESS	1
CLAIMS	2
GEOLOGY	2
MAGNETOMETER SURVEY	3
ROCK SAMPLING	3
DISCUSSION OF RESULTS	5
RECOMMENDATIONS	6
STATEMENT OF EXPENDITURES	7
CERTIFICATE OF QUALIFICATIONS	8

LIST OF FIGURES

	<u>Following Page</u>
FIGURE 1 Location Map	1
FIGURE 2 Claim Map	2
FIGURE 3 Geology Map	2
FIGURE 4 Magnetometer Survey	in pocket
FIGURE 5 Rock Chip Samples	in pocket

LIST OF APPENDICES

APPENDIX 1	Assay Certificates
APPENDIX 2	Analytical Procedures
APPENDIX 3	Magnetometer Specifications and Procedures

INTRODUCTION

Previous exploration on the SOUP claims had identified scattered magnetite-rich outcrops which carried appreciable gold and copper mineralization.

A program, involving systematic rock chip sampling and magnetometer surveying, was undertaken to substantiate the reported gold occurrences and to better define and trace the trends of the mineralization. This report describes the program and results.

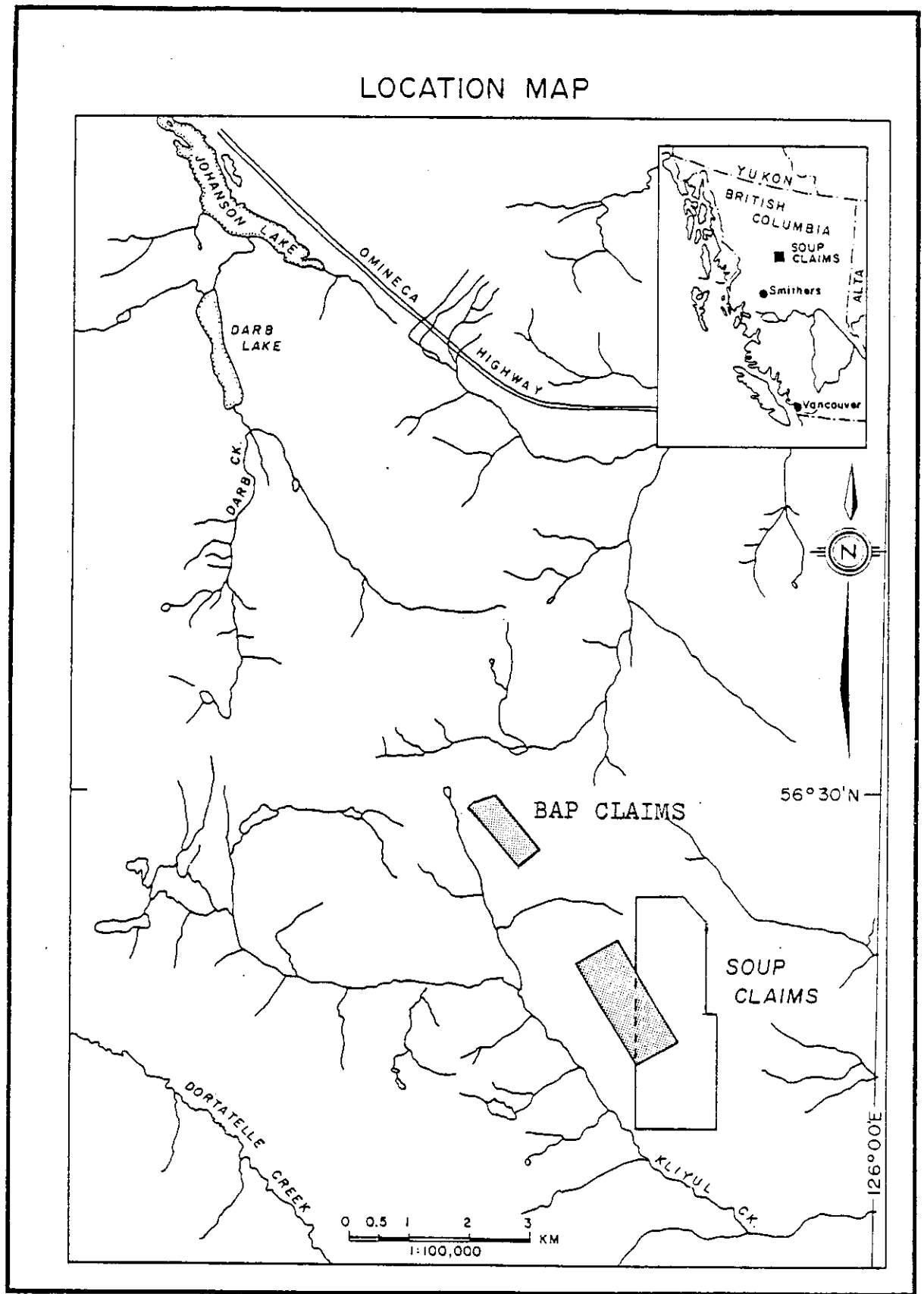
LOCATION AND ACCESS

The claims are located at 56°28' north latitude and 126°03' west longitude in the Omineca Mining Division approximately 200 km north-northeast of Smithers and 14 km south-southeast of Johanson Lake (NTS 94D/08, Figure 1).

Access to the property is by helicopter from Johanson Lake, a distance of 14 km, which in turn is reached by wheel or float-equipped aircraft, or by the Omineca Highway. The road is reached from Fort St. James (400 km) or via Highway 97 from Prince George (500 km). The Dease Lake extension of the British Columbia Railway is operational between Prince George and Driftwood, 65 km southwest of Johanson Lake. Road access could readily be constructed along the Kliyul Creek Valley to the base of the claims.

The claims are situated east of Kliyul Creek above tree-line on a 30° southwest-facing slope on which elevations range from 1,300 to 2,300 meters. Ubiquitous talus, partially covered by alpine grasses and shrubs, obscures much of the bed rock.

LOCATION MAP



LEMMING RESOURCES LTD.
KLIYUL CREEK GOLD PROJECT

FIG. 1

CLAIMS

The SOUP property is comprised of 15 contiguous claims totalling 48 units.

<u>Claim Name</u>	<u>Record #</u>	<u>Units</u>	<u>Recording Date</u>	<u>Expiry Date*</u>
SOUP 1	26941	1	August 7, 1964	August 7, 1994
SOUP 2	26942	1	August 7, 1964	August 7, 1994
SOUP 3	26943	1	August 7, 1964	August 7, 1994
SOUP 4	26944	1	August 7, 1964	August 7, 1994
SOUP 5	26945	1	August 7, 1964	August 7, 1994
SOUP 6	26946	1	August 7, 1964	August 7, 1994
SOUP 7	26947	1	August 7, 1964	August 7, 1994
SOUP 8	26948	1	August 7, 1964	August 7, 1994
SOUP 9	26949	1	August 7, 1964	August 7, 1994
SOUP 10	26950	1	August 7, 1964	August 7, 1994
SOUP 11 FR	4206	1	August 15, 1981	August 15, 1994
SOUP 12	5805	12	October 5, 1983	October 5, 1994
SOUP 13	5806	12	October 5, 1983	October 5, 1994
SOUP 14	6491	12	August 13, 1984	August 13, 1994
SOUPFR	7735	1	August 1, 1986	August 1, 1993

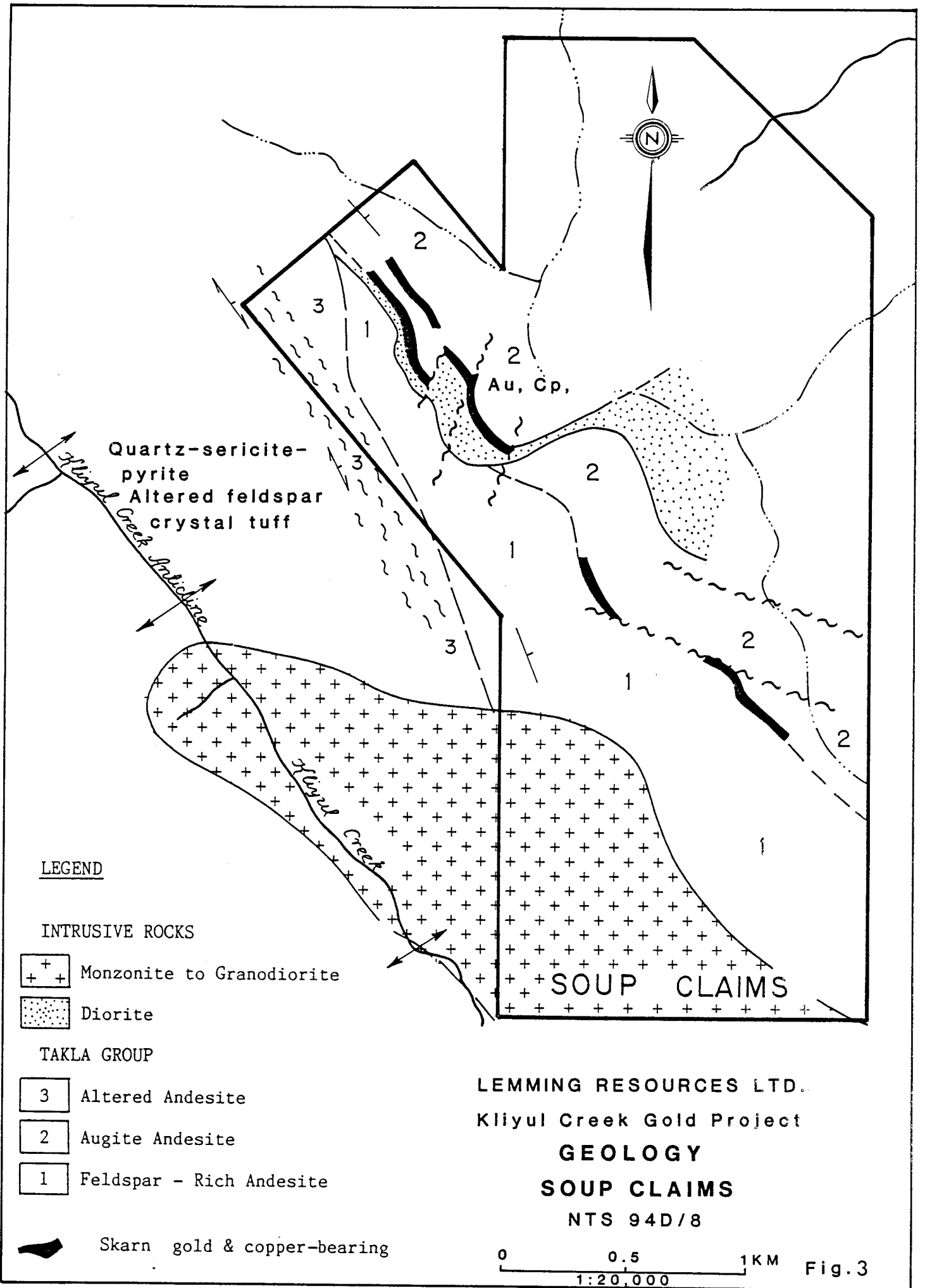
* Upon acceptance of this report.
(Claim Map, Figure 2)

GEOLOGY

The SOUP claims are underlain largely by volcanic rocks of the Upper Triassic - Lower Jurassic Takla Group. These have been intruded by diorite stocks, sills and dykes, microdiorite and feldspar porphyry dykes and by quartz monzonitic batholithic rocks (Figure 3).

The stratigraphically lowest are feldspar - rich andesitic lavas and tuffs. These grade upwards into, and at first interfinger with, andesitic to basaltic augite porphyry flows and flow breccias. Both are intruded by augite porphyry feeder dykes. Recessive, thin calcareous andesitic tuff units lie at the base of the augite - bearing units.

Massive conformable lenses (or beds) of magnetite-rich skarn occurring near the base of the augite porphyry contain appreciable gold and copper. At least three parallel skarn horizons are recognized, possibly replacing calcareous tuffs.



Quartz-sericite-
pyrite
Altered feldspar
crystal tuff

Au, Cp,

LEGEND

INTRUSIVE ROCKS

- Monzonite to Granodiorite
- Diorite

TAKLA GROUP

- Altered Andesite
- Augite Andesite
- Feldspar - Rich Andesite

Skarn gold & copper-bearing

LEMMING RESOURCES LTD.
Kliyul Creek Gold Project
GEOLOGY
SOUP CLAIMS
NTS 94D/8

0 0.5 1KM
 1:20,000

Fig.3

Fault and shear controlled discordant quartz-magnetite-chalcopyrite veins and replacement bodies occur within the same stratigraphic interval as the skarn and generally contain higher gold values.

MAGNETOMETER SURVEY

Talus obscures much of the outcrop in the vicinity of the auriferous skarn and vein occurrences. A magnetometer survey was conducted to trace the magnetite-bearing skarn units and veins between and beyond outcrops areas. Two picketed base lines, totalling 725 m, were established for control. Cross lines were placed at 25 m intervals and magnetometer measurements were recorded at 5 m intervals along 2875 m of lines. Instrument specifications are contained in Appendix 2.

Three skarn horizons were identified (Figure 4). Each is marked by a deep linear magnetic trough. The upper, or main skarn, horizon is also marked by a discontinuous series of magnetic highs. The folded appearance of the magnetic trends are attributed to topographic effects on the gently to moderately east dipping skarn which are further accentuated by faulting.

The quartz-magnetite veins generally lie within a broad positive magnetic feature centered at 50+00W, 51+00E but are not individually identifiable.

ROCK SAMPLING

A total of 45 continuous rock chip samples were collected from skarn and vein occurrences to relocate previously reported auriferous zones and to determine their tenor and characteristics (Figure 5). Approximately 500 g of rock were cut per metre of sample length.

Sample descriptions and assay results are tabulated on the following page.

Sample Descriptions

<u>Sample Number</u>	<u>Length Metres</u>	<u>Gold Oz/ton</u>	<u>Copper %</u>	<u>Description</u>
101	0.3	2.010	0.17	Quartz magnetite vein - highly oxidized.
102	0.6	0.005	0.12	Footwall to 101 - chloritic andesite.
103	1.0	0.045	0.17	Hanging wall to 101 - chloritic andesite minor qtz, mt.
104	1.4	0.022	0.09	Footwall to 105 - chloritic andesite minor qtz, mt.
105	1.0	0.250	0.12	Highly oxidized quartz - magnetite band in chloritic andesite.
106	1.0	0.001	0.13	Hanging wall to 105 - chloritic andesite. Footwall to feldspar porphyry dyke.
107	1.0	0.001	0.72	Footwall to 108 - chloritic andesite - minor malachite.
108	1.0	0.790	0.41	Spongy limonite and oxidized magnetite.
109	1.0	0.292	0.09	Highly oxidized quartz magnetite.
110	1.0	0.011	0.20	Weakly oxidized chloritic andesite - minor malachite. Hanging wall to 109.
111	2.1	0.003	0.06	Highly oxidized skarn, 60% magnetite.
112	1.0	0.008	0.09	Footwall to 113 chloritic hornfelsed andesite minor quartz and magnetite.
113	1.0	0.295	0.05	Sheared quartz magnetite strike - 150° - 75° E.
114	1.0	0.031	0.06	Hanging wall to 113 - hornfelsed chloritic andesite minor qtz + mt.
115	1.0	0.042	0.07	Hanging wall to 114 - hornfelsed chloritic andesite minor qtz + mt.
116	1.0	0.087	0.07	Hanging wall to 115 - 50% quartz + magnetite 50% chloritic hornfelsed andesite.
117	1.0	1.010	0.07	Quartz with 15% magnetite + some chloritic andesite.
118	1.0	0.141	0.18	Hanging wall to 117 - chloritic andesite some qtz + mt.
119	1.0	0.130	0.05	Quartz and oxidized magnetite - minor pyrite - shear zone.
120	1.0	0.011	0.03	Oxidized pyritic sheared chloritic andesite minor qtz + mt.
121	0.7	0.019	0.23	Sheared andesite, weak quartz + magnetite - west half oxidized - east half fresh.
122	2.0	0.730	0.25	Highly oxidized - quartz + magnetite in shear zone.
123	1.0	0.165	0.34	Highly oxidized magnetite skarn.
124	1.0	0.058	0.30	Highly oxidized magnetite skarn.
125	1.0	0.060	0.18	Highly oxidized magnetite - epidote - garnet skarn.
126	1.0	0.045	0.16	Highly oxidized magnetite - epidote - garnet skarn.
127	1.0	0.081	0.13	Highly oxidized magnetite - epidote - garnet skarn.
128	1.2	0.038	0.49	Highly oxidized magnetite - epidote skarn - some chalcopyrite.
129	3.0	0.032	1.15	Highly oxidized magnetite - epidote - garnet skarn - some chalcopyrite.

Sample Descriptions

<u>Sample Number</u>	<u>Length Metres</u>	<u>Gold Oz/ton</u>	<u>Copper %</u>	<u>Description</u>
130	composite	0.001	0.03	Composite grab from rubble of bleached hanging wall to skarn (#143).
131	composite	0.004	0.06	Spongy limonite + highly oxidized magnetite skarn.
132	1.0	0.252	0.21	50% oxidized magnetite skarn with f-g andesite tuff.
133	1.0	0.018	0.13	Highly oxidized magnetite skarn - some andesite tuff.
134	1.0	0.025	0.06	Mostly andesite tuff - minor highly oxidized magnetite skarn.
135	1.0	0.069	0.08	Fairly fresh magnetite skarn.
136	1.0	0.117	0.14	Fairly fresh, banded, green calcsilicate - magnetite skarn.
137	1.0	0.141	0.26	Highly oxidized magnetite skarn.
138	1.0	0.022	0.11	Banded magnetite skarn and highly oxidized tuff.
139	1.0	1.680	0.17	Sulphide impregnated, silicified, sheared chloritic andesite.
140	1.0	0.032	0.34	Weakly pyritic, sheared chloritic andesite minor cpy.
141	1.0	0.193	0.06	Sheared chloritic andesite - minor quartz and seams of magnetite.
142	1.0	0.017	1.76	Sheared chloritic andesite, heavy malachite staining.
143	composite	0.003	0.04	Highly oxidized magnetite skarn rubble.
144	composite	0.039	0.07	Highly oxidized magnetite skarn rubble.
145	composite	0.014	0.14	Highly oxidized magnetite skarn rubble.

DISCUSSION OF RESULTS

The magnetometer survey proved effective in tracing the magnetite - bearing skarns beneath areas of extensive talus cover. All three of the skarn units identified are open along strike for extension. Careful prospecting proved to be more effective in tracing the narrower shear/fault controlled quartz-magnetite veins and replacements.

Northeasterly trending faults have segmented the main skarn unit, lying along base line 49+25E, into a series of lenses. This faulting also appears to be the structural control for the magnetite - quartz veins.

Sampling of mineralized outcrops revealed that there are two distinct modes of mineralization, stratiform magnetite - calcsilicate skarn and discordant fault or shear controlled quartz-magnetite veins and replacements. Pyrite and lesser chalcopyrite comprise a subordinate component of both the skarn and the veins.

Intense oxidation has transformed much of the magnetite in both the skarn and the veins into spongy limonite masses. What effect this oxidation has had on grades of gold and copper is not known.

Systematic chip sampling has substantiated that significant gold values are carried by both the skarn and veins. Further exploration for additional mineralization can be effectively carried out by utilizing a combination of detailed magnetometer surveying and conventional prospecting. Diamond drilling will be required to successfully sample below the zone of intense surface oxidation.

RECOMMENDATIONS

1. Extend the magnetometer survey to the grid north and south;
2. Prospect the linear magnetic features; and
3. Carefully and systematically sample all shear zones, veins and skarns.

STATEMENT OF EXPENDITURES

SOUP 1-14 CLAIMS

C.M. Rebagliati	July 10-15, 19-22, 24-29 August 1 & 2 1986	18 days @ \$400	\$ 7,200.00
L. Lindinger	July 12-15, 19-22, 24-26	11 days @ \$200	2,200.00
Analyses	40 rock @ \$14.00		560.00
Freight			87.10
Camp and equipment rental	20 days @ \$80.50/day		1,610.00
Radio telephone rental	13 days @ \$21.43/day		278.57
Magnetometer rental	13 days @ \$28.36/day		371.00
Truck rental	20 days @ \$50.00/day		1,000.00
Truck operating costs -	gas, oil, mileage, insurance		488.71
Trailer rental	13 days @ \$22.14/day		287.86
Helicopter	9.41 hrs. @ \$581.85		5,475.21
Food, camp supplies and other consumables	30 man days @ \$27.50		825.00
Compilation & report preparation	C.M. Rebagliati-August 3 & 4 2 days @ \$400		800.00
Drafting, reproduction of base maps and reports			267.79
		Total	<u>\$ 21,451.24</u>

SOUPER CLAIM

C.M. Rebagliati	July 23, 1986	1 day @ \$400	\$ 400.00
L. Lindinger	July 23, 1986	1 day @ \$200	200.00
Food, camp supplies and consumables	2 man days @ \$27.50/day		55.00
Camp and equipment rental	1 day @ \$80.50/day		80.50
Truck rental	1 day @ \$50.00/day		50.00
Trailer rental	1 day @ \$22.14/day		22.14
Radio telephone rental	1 day @ \$21.43		21.43
Magnetometer rental	1 day @ \$28.36		28.36
Assays	5 @ \$14.00		70.00
Drafting	2.2 hours @ \$20.00/hour		44.00
		Total	<u>\$ 971.43</u>

CERTIFICATE OF QUALIFICATIONS

I, Clarence Mark Rebagliati, of 3536 West 15th Avenue, Vancouver, B.C., hereby certify that:

1. I am a consulting geological engineer with offices at 3536 West 15th Avenue, Vancouver, B.C.
2. I am a graduate of the Provincial Institute of Mining, Haileybury, Ontario (Mining Technology, 1966).
3. I am a graduate of the Michigan Technological University, Houghton, Michigan U.S.A. (B.Sc., Geological Engineering, 1969).
4. I have practiced my profession continuously since graduation.
5. I am a member in good standing of the Association of Professional Engineers of British Columbia.

APPENDIX I

ACME ANALYTICAL LABORATORIES LTD.
87 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6
PHONE 253-3158 TELEX 04-53124

DATE RECEIVED: JULY 28 1986

DATE REPORT MAILED: *Aug 1/86*

ASSAY CERTIFICATE

SAMPLE TYPE: ROCK CHIPS AU: 10 GRAM REGULAR ASSAY

ASSAYER: *D. Toye* DEAN TOYE. CERTIFIED B.C. ASSAYER.

REBAGLIATI GEOLOGICAL PROJECT-SOUP FILE # 86-1729 PAGE 1

SAMPLE#	Cu %	Au OZ/T
101	.17	2.010
102	.12	.005
103	.17	.045
104	.09	.022
105	.12	.250
106	.13	.001
107	.72	.001
108	.41	.790
109	.09	.292
110	.20	.011
112	.09	.008
113	.05	.295
114	.06	.031
115	.07	.042
116	.07	.087
117	.07	1.010
118	.18	.141
119	.05	.130
120	.03	.011
121	.23	.019
122	.25	.730
123	.34	.165
124	.30	.058
125	.18	.060
126	.16	.045
127	.13	.081
128	.49	.038
129	1.15	.032
130	.03	.001
131	.06	.004
132	.21	.252
133	.13	.018
134	.06	.025
135	.08	.069
136	.14	.117

SAMPLE#	Cu %	Au OZ/T
137	.26	.141
138	.11	.022
139	.17	1.680
140	.34	.032
141	.06	.193
142	1.76	.017
143	.04	.003
144	.07	.039
145	.14	.014
146	.01	.001
147	.01	.001
NSN 111	.06	.003

APPENDIX 2

**ACME ANALYTICAL LABORATORIES LTD.**

Assaying & Trace Analysis
852 E. Hastings St., Vancouver, B.C. V6A 1R6
Telephone: 253-3158

1986

Acme Analytical continues to update with mass spectrographic analysis which is now operational. In general, mass spec offers detection limits which are at least 100-fold lower than ICP or flame AA. These detection limits are comparable to graphite furnace AA, but the mass spec can analyze up to 60 elements simultaneously.

Acme has pioneered low cost multi-element ICP which has better detection and precision than AA. Mass spec will further expand the range of elements and isotopes available to mineral exploration programs.

SPACE

Total laboratory, sample preparation and sample storage has been expanded to 12,000 square feet.

EQUIPMENT

1. Our ICP system has been expanded, and a fourth unit has been purchased which will allow us to determine up to 45 elements simultaneously.
2. AA spectrophotometers have been increased to 8.
3. Sample preparation, weighing and dissolution facilities have been increased.
4. A LECO Induction Furnace has been installed for determining Carbon and Sulfur simultaneously in geological and metallurgical samples.
5. An UA3 Laser Fluorometer from Scintrex is now used for determination of U in water to .01 ppb.
6. Two ICP mass spectrographs.

TECHNOLOGY

1. Fire Assay for Ag, Au, Pt, Pd, the precious metal bead can be analysed by gravimetric, AA, ICP or Mass spec.
2. ICP multi element packages for water, geochem and assay programs have been developed.
3. Lower detection limits for some elements have been achieved by graphite furnace AA.

TECHNICAL ACHIEVEMENTS

1. Background corrected Atomic Absorption analysis of Ag and Au since 1971.
2. Best proven precision, accuracy and price for MoS₂ assays in North America.
3. Pioneered geochemical analysis by ICP at or to better detection limits than AA, including Ag, As, U, Th and W.
4. First to offer Mass spectrographic scan analysis.

PROVEN PERFORMANCE

Our logistical and technical performance for our clients has been demonstrated on the Gambier, Capoose Lake, Trout Lake, Blackdome, Red Mountain, Carolin, Cirque, Minago River, Quesnel River, Terra Swede, Musto and other major projects.

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Telephone: 253-3158

5. Guidelines for Data Interpretation**A. 30 Element ICP - typical value from ICP**

Mo - normal soils	1-3 ppm	Th - normal soils	3 ppm
highly decomposed organics	5 ppm	Sr - normal soils	40 ppm
shales	30 ppm	Cd - normal soils	1 ppm
Cu - normal soils	20 ppm	Sb - normal soils	less than 2 ppm
high organics	100 ppm	Bi - normal soils	less than 2 ppm
Pb - normal soils	5 ppm	V - normal soils	40 ppm
Zn - normal soils	30 ppm	Ca - normal soils	0.5 %
high organics	200 ppm	P - normal soils	0.5 %
Ag - normal soils	0.2 ppm	La - normal soils	10 ppm
high organics	0.6 ppm	Cr - normal soils	10 ppm
Ni - normal soils	20 ppm	Mg - normal soils	0.5 %
Co - normal soils	15 ppm	Ba - normal soils	20 ppm
Mn - normal soils	300 ppm	Tl - normal soils	0.1 %
Fe - normal soils	2 %	B - normal soils	1 ppm
As - normal soils	5 ppm	Al - normal soils	2 %
U - normal soils	2 ppm	Na - normal soils	0.05 %
Au - normal soils	ND	K - normal soils	0.1 %
	(ICP detection limit = 2 ppm)	W - normal soils	2 ppm

B. Geochemical Au

Normal soil 1-3 ppb

6. Geochemical ICP - Notes on Solubilities of Elements

Barites, Chromites ..	insoluble	As	soluble up to 20,000 ppm
Magnetite	partly soluble	Pb	soluble up to 10,000 ppm
Al, Ca, P, Mg	up to 25% soluble	Sb, Bi ..	soluble up to 1000 ppm
Na, K, Tl	up to 10% soluble	Ag, W ...	soluble up to 100 ppm

7. Conversion Factors

1 Troy oz = 31.10 g
1 oz/ton = 34.3 ppm = 34.3 g/tonne = 34,300 ppb
1 % = 10,000 ppm

8. Whole Rock Geochemical Analysis

The lithium metaborate fusion dissolves most types of rock except for very high chromite and very massive sulfides. Whole Rock data and Zr, Ba, Y and Sr are also available from this fusion by ICP. Other elements are available by mass spectrographic analysis. The proposed 50 element package includes Ag, Al, As, Ba, Be, Bi, Br, Ca, Cd, Ce, Cl, Co, Cr, Cs, Eu, Fe, Ga, Ge, Hg, I, In, K, La, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Rb, Re, Ru, S, Sb, Se, Sn, Sr, Ta, Te, Th, Tl, U, V, W, Y, Zn, Zr.

**ACME ANALYTICAL LABORATORIES LTD.**

Assaying & Trace Analysis
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Telephone: 253-3158

Suggestions for Effective use of Analytical Services**1. General Sampling**

- A. Rocks - In general 1/2 to 2 lb of sample are required. Large boulders should be broken down to chip size with a 20 lb sledge hammer. A representative sample is then taken from these chips. The lab will crush, split and pulverize.
- B. Cores - Drill cores should be split into halves for assaying
- C. Soils - The organic "A" horizon gives good base metal responses. Supply about one cup of material in a soil or paper envelope. The soil is treated in one of three methods after drying :-
1) -80 mesh sieving (standard).
2) -80 mesh sieving + pulverizing.
3) pulverizing the whole sample.

Samplers must not wear any jewelry.

2. Shipping

- A. Local and Within Canada - use Greyhound or Pacific Stage Lines. For large DRILL programs use a truck line.

- B. U.S. Customers - for surface transport use UPS and address to :-

Acme Analytical Laboratories Ltd.,
c/o Pac Ex Services,
140 - 14th St.,
Blaine, Wash. 98230

Air freight shipments are addressed to :-

Acme Analytical Laboratories Ltd.
c/o Cole McCubbin
Vancouver, B.C.

Shipments from the U.S. should be labelled "Geological Samples for Analysis - No Commercial Value".

3. Suggested Geochemical Analyses

- A. Rocks with No Visible Mineralization - 30 element ICP + geochemical Au.
- B. Rocks with High Sulphides - 16 element ICP Assay.
- C. Cores - assays for elements of mineralization and possible 30 element ICP.
- D. Soils - 30 element ICP + geochemical Au.

4. Samples with Possible Native Gold

For rocks and cores with nugget or native gold, request that the total sample be pulverized and sieved on a 100 mesh screen. Two fire assays are then required for each sample; one on the entire +100 mesh fraction for any possible native gold and one on the -100 mesh. (1 A.T.)

Pan or sluice concentrates are best treated by cyclone concentration and fire assay for total Au.

**ACME ANALYTICAL LABORATORIES LTD.**

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GEOCHEMICAL LABORATORY METHODOLOGY - 1986Sample Preparation

1. Soil samples are dried at 60°C and sieved to -80 mesh.
2. Rock samples are pulverized to -100 mesh.

Geochemical Analysis

0.5 gram samples are digested in hot dilute aqua regia in a boiling water bath and diluted to 10 ml with demineralized water. Extracted metals are determined by :

A. Atomic Absorption (AA)

Ag⁺, Bi⁺, Cd⁺, Co, Cu, Fe, Ga, In, Mn, Mo, Ni, Pb, Sb⁺, Ti, V, Zn
(* denotes with background correction.)

B. Inductively Coupled Argon Plasma (ICP)

Ag, Al, As, Au, B, Ba, Bi, Ca, Cd, Co, Cu, Cr, Fe, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Sr, Th, Ti, U, V, W, Zn.

C. Mass Spec (lower detect limits)

Same as above except delete As, and add Li, Ga, Ge, Rh, Pd, Pt, In, Te, Re, Os, Ir, Hg, Tl.

Geochemical Analysis for Au⁺

10.0 gram samples that have been ignited 4 hours at 600°C are digested with 30 ml hot dilute aqua regia, and 75 ml of clear solution obtained is extracted with 5 ml Methyl Isobutyl Ketone.

Au is determined in the MIBK extract by Atomic Absorption using background correction (Detection Limit = 1 ppb).

Geochemical Analysis for Au⁺⁺, Pd, Pt, Rh

10.0 - 30.0 gram samples are subjected to Fire Assay preconcentration techniques to produce silver beads.

The silver beads are dissolved and Au, Pd, Pt, and Rh are determined in the solution by graphite furnace Atomic Absorption. Detections - Au=1 ppb; Pd, Pt, Rh=5 ppb

Geochemical Analysis for As

0.5 gram samples are digested with hot dilute aqua regia and diluted to 10 ml. As is determined in the solution by Graphite Furnace Atomic Absorption (AA) or by Inductively Coupled Argon Plasma (ICP).

Geochemical Analysis for Barium

0.10 gram samples are fused .6 gm LiBO₂ and dissolved in 50 ml 5% HNO₃, (Same as Whole Rock).

Ba is determined in the solution by ICP or M.S.

Geochemical Analysis for Tungsten

0.50 gram samples are fusion Na₂O₂ and dissolved in 20 ml H₂O.
W in the solution determined by ICP with a detection of 1 ppm.

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Geochemical Analysis for Selenium

0.5 gram samples are digested with hot 3 ml of 50% HNO₃ and diluted to 10 ml with H₂O. Se is determined by M.S.

Precious Metal Mass Spec Analysis (41 elements listed above.)

5.0 gm samples are digested with 30 ml aqua regia and diluted to 100 ml then analysed by M.S.

Geochemical Analysis for Fluorine

0.25 gram samples are fused with sodium hydroxide and leached with 10 ml water. The solution is neutralized, buffered, adjusted to pH 7.8 and diluted to 100 ml.

Fluorine is determined by Specific Ion Electrode using an Orion Model 404 meter.

Geochemical Analysis for Tin

1.0 gram samples are fused with ammonium iodide in a test tube. The sublimed iodine is leached with 5 ml of dilute hydrochloric acid.

The solution is determined by Atomic Absorption.

Geochemical Analysis for Chromium

0.1 gram samples are fused with Na₂O₂. The melt is leached with HCl and analysed by AA or ICP. Detection 1 ppm.

Geochemical Analysis for Hg

0.5 gram samples are digested with aqua regia and diluted with 20% HCl.

Hg in the solutions are determined by cold vapour AA using a F & J Scientific Hg assembly. The aliquots of the extract are added to a stannous chloride / hydrochloric acid solution. The reduced Hg is swept out of the solution and passed into the Hg cell where it is measured by AA.

Geochemical Analysis for Ga & Ge

0.5 gram samples are digested with hot aqua regia with HF in pressure bombs.

Ga and Ge in the solutions are determined by graphite furnace AA or M.S. Detection 1 ppm.

Geochemical Analysis for Tl (Thallium)

0.5 gram samples are digested with 1:1 HNO₃. Tl is determined by graphite AA or by M.S. Detection .1 ppm.

Geochemical Analysis for Te (Tellurium)

0.5 gram samples are digested with hot aqua regia. The Te extracted in MIBK is analysed by graphite furnace AA or analysed by M.S. Detection .1 ppm.

Geochemical Whole Rock

0.1 gram is fused with .6 gm LiBO₂ and dissolved in 50 ml 5% HNO₃. Analysis by ICP gives excellent precision for major components. The M.S. can analyze for up to 50 elements with lower detection limit but lower precision.

**ACME ANALYTICAL LABORATORIES LTD.**

Assaying & Trace Analysis
852 E. Hastings St., Vancouver, B.C. V6A 1R6
Telephone: 253-3158

1986

GEOCHEMICAL ANALYSES
Rocks and Soils

Group I Digestion - 0.50 gm sample is digested by 3 ml Aqua Regia and diluted to 10 ml with H₂O.

Group IA - Analysis by Atomic Absorption.

Element	Detection	Element	Detection	Element	Detection
Antimony *	2 ppm	Copper	1 ppm	Molybdenum	1 ppm
Bismuth *	2 ppm	Iron	0.01%	Nickel	1 ppm
Cadmium *	0.1 ppm	Lead	2 ppm	Silver	0.1 ppm
Chromium	1 ppm	Lithium	2 ppm	Vanadium	2 ppm
Cobalt	1 ppm	Manganese	5 ppm	Zinc	2 ppm

First Element \$2.00

Subsequent Element \$.75

Group IB - Same digestion; hydride generation of volatile elements and analysis by ICP.

Element	Detection		
Arsenic	0.1 ppm	First Element	\$3.00
Antimony	0.1 ppm	All Elements	\$4.00
Bismuth	0.1 ppm	(This technique is unsuitable for samples grading over 1% Cu or Ni and is only partial for Ge.)	
Germanium	0.2 ppm		
Selenium	0.2 ppm		
Tellurium	0.3 ppm		

Group IC - Same digestion.

Element	Detection	Method	Price
Mercury	5 ppb	Flameless AA	\$2.00

Group ID - Same digestion - 30 elements ICP.

Element	Detection		
Ag	0.1 ppm		
Cd, Co, Cr, Cu, Mn, Mo, Ni, Sr, Zn	1 ppm		
As, Au, B, Ba, Bi, La, Pb, Sb, Th, V, W	2 ppm		
U	5 ppm		
Al, Ca, Fe, K, Mg, Na, P, Ti	0.01%		
Any 2 elements	\$ 3.00	5 elements	\$ 4.00
		10 elements	\$ 5.00
		All 30 elements	\$ 6.00

Group IE - Same digestion as above analysis by ICP MS.

Element	Detection		
Li, Be, Ga, Ge	1 ppm		
Rh, Pd, Ag, Cd, In, Sn, Sb, Te, I, Ir, Pt, Au, Hg, Tl, Th, U	0.1 ppm		
First Element	\$5.00	Additional Element	\$1.00
		All Elements	\$15.00

* Minimum 20 samples or \$5.00 surcharge.



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Group 2 - Base Metals by Specific Extraction and Instrumental Techniques.

Element	Method	Detection	Price
Barium	LiBO ₂ fusion, ICP analysis	10 ppm	\$3.50
Carbon	LECO (Total as C or CO ₂)	0.01%	5.00
Carbon & Sulfur	LECO	0.01%	6.00
Carbon (graphite)	LECO	0.01%	7.00
Chromium	LiBO ₂ fusion, ICP analysis	5 ppm	3.50
Fluorine	NaOH fusion, Specific Ion Electrode	10 ppm	4.00
Gallium	HF, Aqua Regia, AA determination	1 ppm	4.00
Germanium	HF, Aqua Regia, AA determination	1 ppm	4.00
Sulphur	LECO (Total as S)	0.01%	5.00
Sulphur	LECO (insoluble SO ₄)	0.01%	7.00
Tin	NH ₄ I fusion, AA determination	1 ppm	3.00
Tungsten	Na ₂ O ₂ fusion, ICP determination	2 ppm	3.00
Uranium	Aqua Regia digestion, Fluorometric	0.1 ppm	4.00
Thallium	Nitric acid - AA	0.1 ppm	3.00

Group 3 - Noble Metals.

Element	Method	Detection	Price
Au	AA (10 gm, ignited at 600°C, Aqua Regia digestion, MIBK extraction, graphite furnace AA determination.)	1 ppb	\$4.00
Au	FA+AA (10 gm, Fire Assay Conc. to Ag bead, Aqua Regia digestion of bead, graphite furnace AA determination.)	1 ppb	\$5.50 for first element
Palladium	Same	2 ppb	\$2.50 for each additional element
Platinum	Same	2 ppb	
Rhodium	Same	2 ppb	

Group 4A - Geochem Whole Rock Assay.

0.1 gram is fused with .6 gm LiBO₂ and is dissolved in 50 ml 5% HNO₃.
SiO₂, Al₂O₃, Fe₂O₃, CaO, MgO, Na₂O, K₂O, MnO, TiO₂, P₂O₅, Cr₂O₃, LOI + Ba by ICP
Price : \$3.50 first metal \$1.00 each additional \$9.00 for all 13 metals

Group 4B - Same fusion + ICP optical analysis

Element	Detection	Price
Ba, Co, Cu, Ni, Sr, Zn	10 ppm	\$3.50 first element or \$1.00 each additional to Whole Rock analysis
Rb, Ce	20 ppm	
Nb, Ta, Y, Zr	30 ppm	\$5.00 for all 12
Cs	10 ppm by AA	\$2.00

Group 4C - Same fusion, analysis by Mass Spec. (MS)

Be, Cu, Rb, Y, Zr, Nb, Sn, Cs, La, HF, Ta, W, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Th, U
Detection : 1 to 5 ppm Price : \$7.00 for first element \$20.00 for all 27 elements

* Minimum 20 samples or \$5.00 surcharge.



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Regular Assay

Aluminum (Al)	\$7.50	Moisture (H ₂ O)	\$5.00
Antimony (Sb)	7.50	Molybdenum (Mo)	6.75
Arsenic (As)	7.50	Molybdenum Sulfide (MoS ₂)	7.50
Barium (Ba)	7.50	Niobium (Nb)	10.00
Bismuth (Bi)	7.50	Nickel (Ni)	6.75
Boron (B)	7.50	Nickel (Non-sulfide)	7.50
Cadmium (Cd)	6.75	Palladium (Pd)	12.50
Calcium (Ca)	7.50	Phosphorus (P)	7.50
Carbon (Total) (C)	7.50	Platinum (Pt)	12.50
Carbon (Graphitic)*	9.50	Potassium (K)	7.50
Carbon plus Sulfur (Total)*	11.00	Rhodium (Rh)	12.50
Cerium (Ce)	10.00	Rubidium (Rb)	7.50
Chromium (Cr)	7.50	Selenium (Se)	10.00
Cesium (Cs)	10.00	Silica (SiO ₂)	7.50
Cobalt (Co)	6.75	Silver (Ag)	6.75
Copper (Cu)	6.75	Silver (Fire Assay)	9.00
Copper (non-sulfide)*	8.00	Sodium (Na)	7.50
Europium (Eu)	10.00	Specific Gravity* (SG)	6.00
Fluorine (F)	7.50	Strontium (Sr)	7.50
Gallium (Ga)	7.50	Sulfur (Total)* (S)	7.50
Germanium (Ge)	7.50	Sulfur (Sulfate) (S)	8.50
Gold (Au)	6.75	Tantalum (Ta)	7.50
Gold (Fire Assay)	8.25	Tellurium (Te)	10.00
Gold plus Silver (Fire Assay)	11.25	Thallium (Tl)	10.00
Indium (In)	8.50	Thorium* (Th)	7.50
Iron (Total) (Fe)	7.50	Tin (Sn)	8.00
Iron (Ferrous)*	9.00	Titanium (Ti)	7.50
Lanthanum (La)	7.50	Tungsten (W)	7.50
Lithium (Li)	7.50	Uranium (U)	7.50
Lead (Pb)	6.75	Vanadium (V)	7.50
Loss on Ignition (LOI)	2.00	Yttrium (Y)	10.00
Magnesium (Mg)	7.50	Zinc (Zn)	6.75
Manganese (Mn)	7.50	Zirconium* (Zr)	10.00
Mercury* (Hg)	7.50	Pb Isotope Ratio	20.00

* Minimum 5 samples per batch

Other elements by Mass Spec. on request.

Multi-Element Assay Price

Arsenic, Antimony, Bismuth, Cadmium, Cobalt, Copper, Gold, Iron, Lead, Manganese, Molybdenum, Nickel, Silver, Thorium, Uranium, Zinc.

Price : First element \$6.75 Each Additional \$3.00 All 16 elements \$20.00

Whole Rock Assay Prices

SiO₂, Al₂O₃, Fe₂O₃, CaO, MgO, Na₂O, K₂O, MnO, TiO₂, P₂O₅, Cr₂O₃, LOI.

Price : First oxide \$7.50 Each Additional \$3.50 All 12 \$20.00

Volume Discounts Available.

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Supplies

Soil Envelopes	4" x 6"	\$100.00/thousand
Soil Envelopes	4" x 6" with gusset	\$120.00/thousand
Plastic Bags	7" x 13" 6 ml	\$ 10.00/hundred
Plastic Bags	12" x 20" 6 ml	\$ 20.00/hundred
Ties		\$ 4.00/hundred
Assay Tags		N/C
10% HCl		\$ 5.00/liter
Dropping bottles		\$ 1.00/each
Zn Test	A & B	\$ 10.00/each liter

Hydrogeochemical analysis
Natural water for mineral exploration.

26 elements ICP	\$6.00
50 elements MS	\$6.00 first element \$1.00 additional element \$25.00 all
Au detection	.001 ppb \$6.00
F detection	20 ppb \$3.00
U detection	.01 ppb UA3 \$4.00

Special Geochemical Packages

Exp 1	30 elements ICP + Au by AA	\$10.00
Exp 2	30 elements ICP + Au + Hg	\$12.00
Exp 3	Ag, As, Se, Te, Bi, Sb + Au + Hg	\$11.00
Exp 4	30 elements + Se, Te, + Au + Hg	\$14.00
Exp 5	Same as Exp 4 + Geochem Whole Rock	\$20.00
Exp 6	Geochem Group I (ICP + MS) Whole Rock + Fire Assay Geochem Au, Pt, Pd, Rh + Total C & S + F	\$60.00

• Minimum 20 samples or \$5.00 surcharge.

Regular Fire Assay for Noble Metals.

Gold & Silver	\$ 11.00
Gold, Silver, Palladium, Platinum, Rhodium	\$ 25.00
Placer Concentrate for total Gold - up to 1/2 lbs	\$ 11.75
- up to 5 lbs.	\$ 13.25

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Sample Preparation

S1	Soils and silts - drying at 60°C and sieve to -80 mesh	\$.75
S2	Same as above include saving part of reject	\$1.00
S3	Soils and silts drying at 60°C and pulverize up to 100 gms to -100 mesh	\$1.50
S4	Soils and silts sieve to -20 mesh first, pulverize to -100 mesh	\$1.75
R1	Rock or core - crush to -3/16" approx., split off 200 gms, pulverize to 98% -100 mesh	\$3.00
R2	Same as R1 but sieve to -100 mesh and save +100 mesh for possible native Au	\$3.50
R3	Same as R1 but sieve to -140 mesh and save +140 mesh for possible native Au	\$4.00
R4	Same as R2 except pulverize half of total reject	additional pulverizing \$1.50/lb
R5	Same as R2 except pulverize whole sample	additional pulverizing \$2.00/lb
	Composites - each sample added, then mixed	\$1.00
	Crushing surcharge for samples over 10 lbs.	\$.25/lb
	Drying extra wet rock samples	\$1.50
V1	Drying vegetation plants or leaves and pulverize 50 gms to -80 mesh	\$3.00
C1	Cyclone (water) of -30 mesh for native Au	\$3.50/lb
C2	Pan Conc. (water) and cyclone overflow fines for native Au	\$5.00/5 lbs.
D1	Core splitting and sampling	\$.75/ft
H1	Special Handling	\$16.00/hour

Sample Storage

Crushed rocks or rejects are retained for 3 months and discarded unless claimed.

Pulps are retained for one year and discarded unless claimed.

APPENDIX 3

GM-122 PROTON MAGNETOMETER

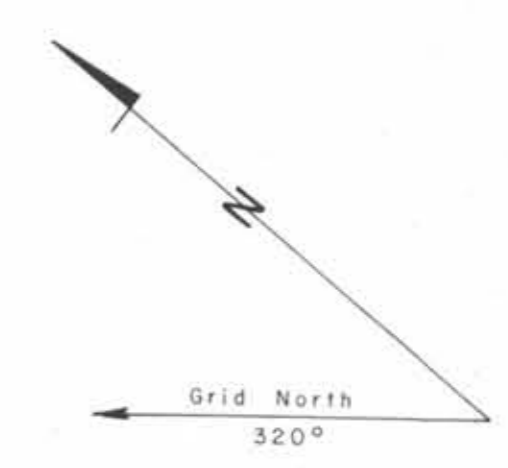
General Description, Principle of Operation

If a proton rich fluid such as kerosene, jet fuel, heptane, etc. is placed into a magnetic field, the protons will align along the magnetic field vector. The magnetic field is induced in the sensor upon depressing the pushbutton. Then this field is suddenly removed. Protons which behave as elementary gyroscopes will start precessing around the remaining magnetic field - that of the earth. The precession frequency is directly proportional to the magnetic field of the earth. The magnetometer counts this frequency, divides it by the appropriate constant to obtain a reading in gammas ($1\gamma = 10^{-5}$ gauss) and displays the reading in the form of a 5 digit number.

SPECIFICATIONS

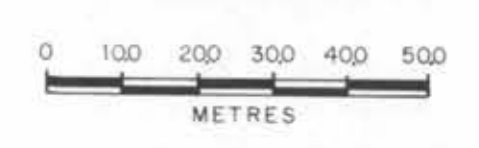
GM-122 PROTON MAGNETOMETER

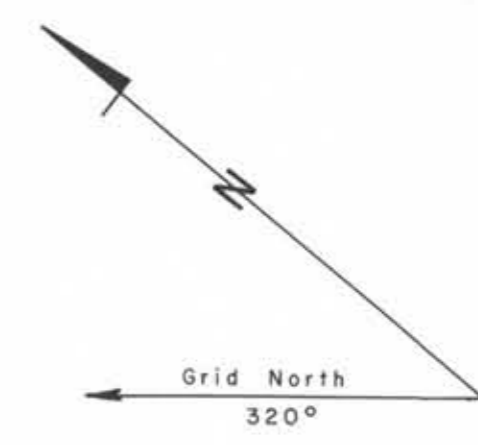
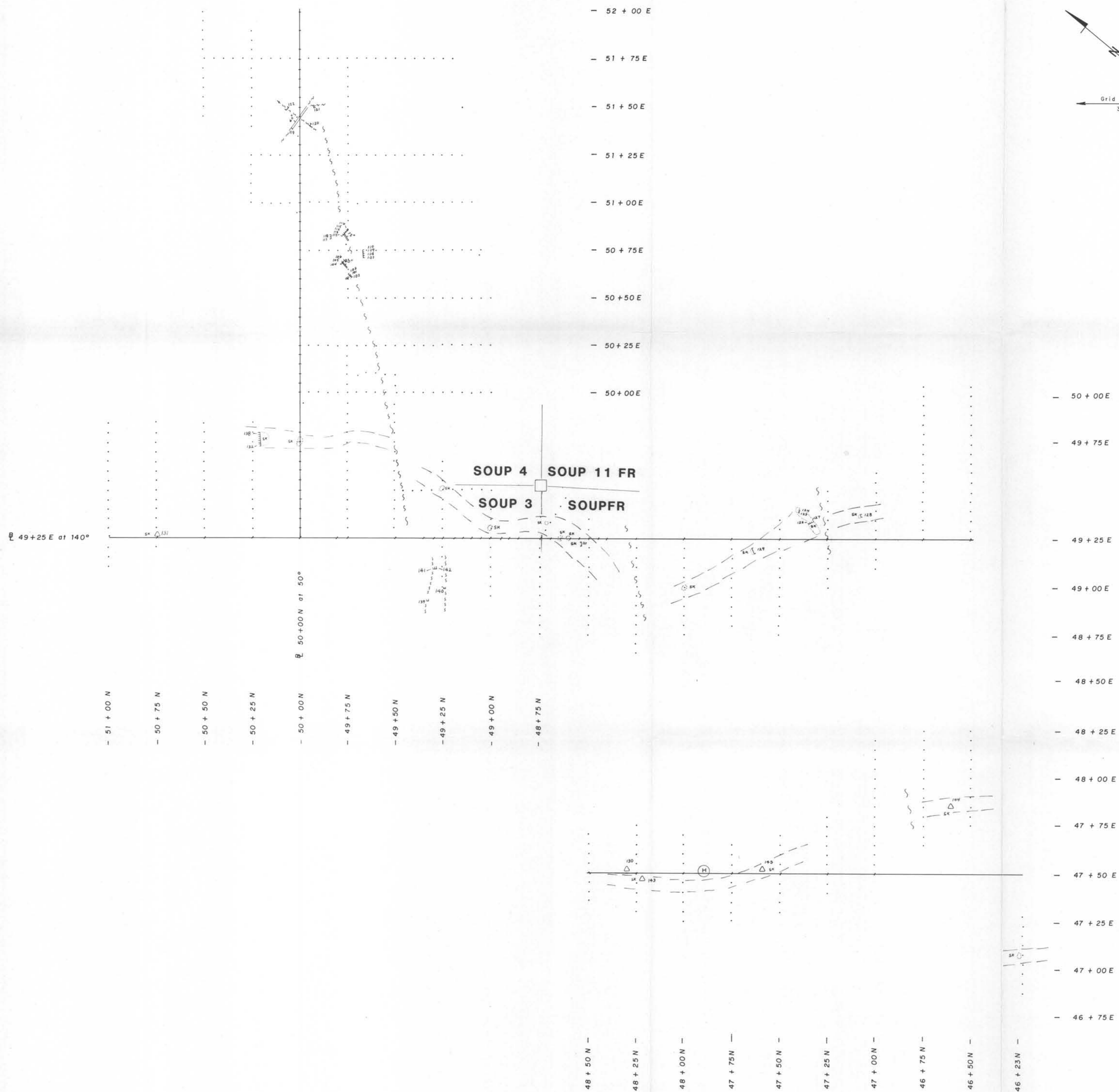
Range:	20,000 to 99,999 in 12 ranges
Accuracy:	$\pm 1 \%$ through operating temperature range.
Sensitivity:	1 $\%$
Gradient Tolerance:	600 $\%$ /ft.
Power:	12 "D" cells
Power Consumption:	50 Joules (Wsec) per reading.
Polarizing Power:	0.8 A @ 13.5 V for 1.5 sec. (3 second cycle). 0.8 A @ 13.5 V for 3 sec. (6 second cycle).
Number of Readings with 1 Battery Set:	2,000 - 10,000 depending on type of batteries.
Frequency of Readings:	1 every 3 seconds. 1 every 6 seconds.
Controls:	Pushbutton switch - Slide switch for 3 and 6 seconds located on P/C Board.
Output:	5 digit incandescent filament readout.
Indicators:	LED point. Lock Indicator - last three digits of the display blanked off when phaselock not achieved. Segment Function Indicator - all segments light up to permit visual inspection of the display function.



GEOLOGICAL BRANCH
ASSESSMENT REPORT
15,201

LEMING RESOURCES LTD.
KLIYUL CREEK GOLD PROJECT
SOUP CLAIMS
SADDLE GULLY SKARN ZONE
MAGNETOMETER SURVEY





- LEGEND:**
- 129 Chip sample location and sample number
 - 131 Representative composite sample of rubble

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,201

**LEMMING RESOURCES LTD.
KLIYUL CREEK GOLD PROJECT
SOUP CLAIMS
SADDLE GULLY SKARN ZONE
ROCK CHIP SAMPLES**

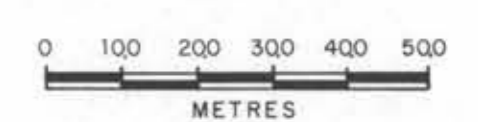


FIGURE 5