

LOG NO: <i>March 19/91</i> RD.
ACTION:
FILE NO:

PROSPECTING, GEOCHEMICAL  
AND GEOPHYSICAL  
ASSESSMENT REPORT ON THE  
SOPHIA GROUP  
ROSSLAND, BRITISH COLUMBIA

Trail Creek Mining Division  
NTS: 82 F/4W  
Latitude: 49° 02' 20" North  
Longitude: 117° 52' 30" West

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**21,104**

Owner                    Tom Lewis  
&  
Operator:                P.O. Box 793  
                              Rossland, B.C.  
                              V0G 1Y0

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                              March 18, 1991

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## SUMMARY

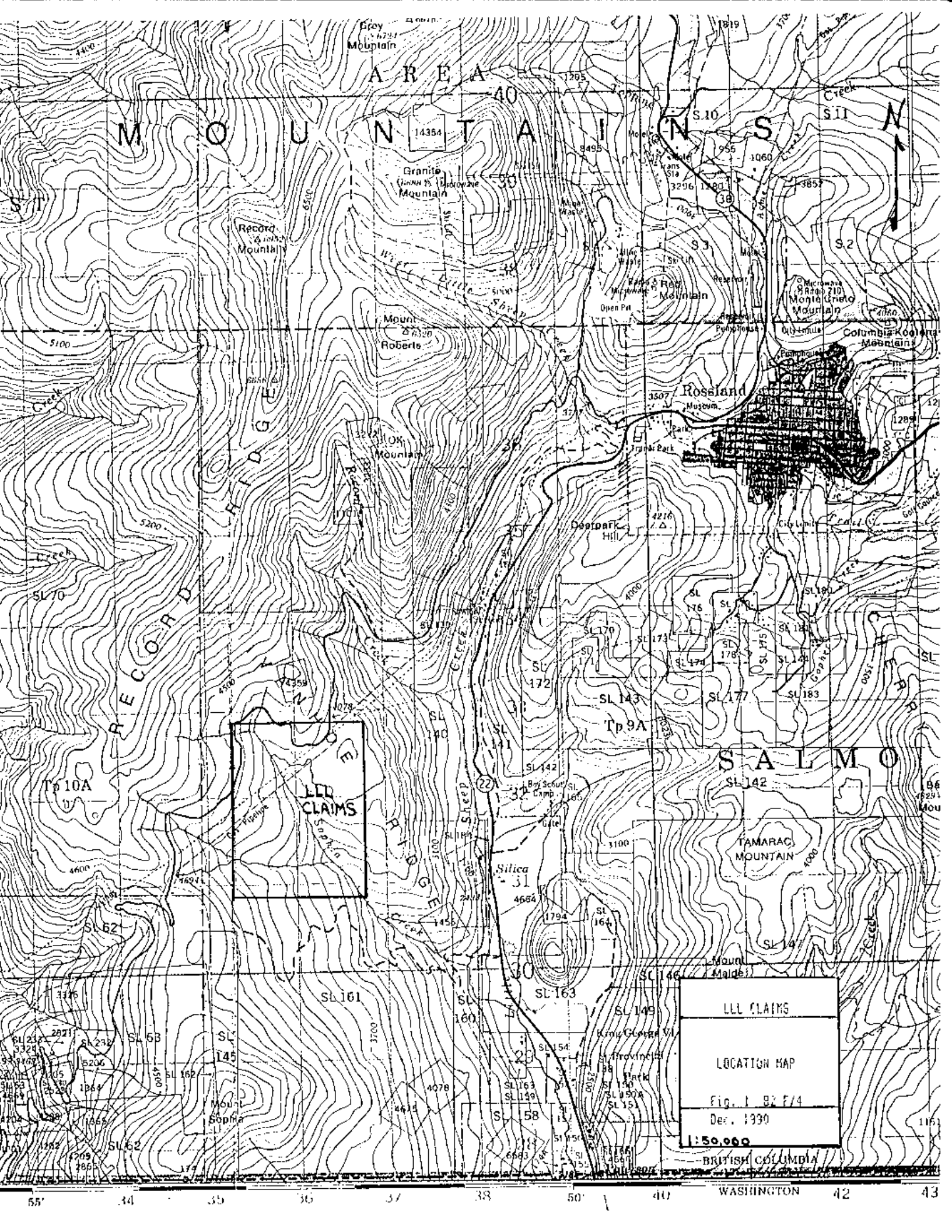
The LLL claims are situated approximately seven kilometres southwest of the town of Rossland, in the Province of British Columbia. These claims are underlain by Jurassic Rossland Group sediments, and volcanics; by ultramafics of unknown age; and are intruded by a number of felsic Coryell equivalent Eocene intrusives. The property has been the site of a great deal of exploration activity in the past twenty years, and a number of areas have been previously noted as being geophysically, and geochemically anomalous.

During the period July 07 - Nov 10 1990 a program of prospecting, infill geochemistry, and Vlf-em geophysics was conducted on the property. The program was designed to better define anomalies which were already outlined in previous work by various parties on the property, as well as to search for previously undiscovered mineralization. In all 132 soil samples were taken, as well as 18 rock samples. In addition 1.4 kilometres of Vlf - em survey were undertaken.

This report details the results of the work undertaken, and makes recommendations for a further work program of two shallow drillholes to test two geochemical, and/or geophysical anomalies.

## LOCATION AND ACCESS

The property is located approximately seven kilometres southwest of the town of Rossland, in the West Kootenay district of British Columbia, as displayed on NTS map sheet 82F/4(Fig 1). The property is roughly bounded on the north, and the west by the old Cascade Highway which runs between Rossland, and the Sheep



MOUNTAIN AREA

M O U N T A I N A R E A

RECORD RIDGE

SALMO

LLL CLAIMS

LLL CLAIMS  
LOCATION MAP  
Fig. 1 92 E/4  
Dec. 1930  
1:50,000

BRITISH COLUMBIA

Creek valley. Access is made onto the property, by the aforementioned highway, which is open year round, and by several other power, and gas line service roads, which are passable by four wheel drive from April until November. There is also a four wheel drive road which passes within a hundred metres of the southeastern most portions of the property, which can be accessed via highway #22.

The claims are all within the Sophia Creek drainage, between Sophia Mountain to the west, and Ivanhoe Ridge to the east. The highest elevation on the claims is in the order of 4700 ft. A.S.L., while the lowest is approximately 3100 ft. A.S.L. The geographical heart of the claim area is at 49° 02' 20" North latitude and 117° 52' 30" West longitude. The claim area is characterized as being one of moderate slope, except for an occasional steep, but short scarp.

#### VEGETATION AND CLIMATE

The forest cover in the claim area is of a mixed coniferous nature, with Cedar, Fir, and Larch being the most prevalent tree species. Poplar groves are common on the eastern portions of the claim block. Spacing between trees is quite wide, but, undergrowth of Alders can be thick, especially in the proximity of Sophia creek, and its' tributaries.

The climate of the area is typified as being moderate, with warm dry summers, and cool winters, when a great deal of precipitation may occur in the form of snowfall. The property would be free of snow cover most likely from the period of mid - May to mid - November in most years.

## PROPERTY

The property consists of twelve - two post mineral claims staked on December 30th 1989(Fig 2). Four claims are less than a full unit in size, due to common boundaries with pre - existing mineral claims in the area.

TABLE I  
MINERAL CLAIMS

Claim	Record Number	Date Recorded	Mining District	Expiry Date (pending approval of this report)
LLL1	1369	12/30/90	Trail Creek	Dec. 30, 1993
LLL2	1370	"	" "	"
LLL3	1371	"	" "	"
LLL4	1372	"	" "	"
LLL5	1473	"	" "	"
LLL6	1474	"	" "	"
LLL7	1475	"	" "	"
LLL8	1476	"	" "	"
LLL9	1477	"	" "	"
LLL10	1478	"	" "	"
LLL11	1479	"	" "	"
LLL12	1480	"	" "	"

## HISTORY

The Rossland Camp has a long history of mineral exploration, and production. The first claim staked in the area was the Lily May in 1887, which was later restaked in 1889. While doing work on this claim in 1890 Bourgeois, and Morris staked several claims on the gossanous outcrops on the southerly lower slopes of Red Mountain, which were later to become the most fabulously rich producing claims in the Camp. Development of the camp was rapid, and by 1895 the population of the Camp was in the order of 3,000 people. By 1896 a full fledged boom was on.

Despite a number of setbacks production was steadily underway by the turn of the century, and continued uninterrupted

LLL CLAIMS  
 CLAIM MAP  
 Fig. 2 B2 E/4SW  
 Dec. 1990

RC

Fredrick Cr.

Swedberg Cr.

RIDGE

RECORD

1323  
 12804  
 OK  
 REV. REV.  
 C.C.  
 L 3233  
 01261(4)  
 L  
 11013  
 1239(2)  
 REV.  
 C.C.

244

2450

LAND 3/  
 252(4)  
 2530

JEWEL 14  
 1397  
 CR.  
 ROSS 1  
 933 (12)  
 5N X 4W

JEWEL 15  
 1398  
 ROSS 2  
 934 (12)  
 5N X 4E

JERO 71  
 868 (5)  
 JERO 43  
 890 (5)

Cranston

Scheme

JERO  
 865  
 6N X 3W

LLL1 1369	LLL2 1370	LLL3 1371
LLL4 1372	LLL5 1373	LLL6 1374
LLL7 1375	LLL8 1376	LLL9 1377
LLL10 1378	LLL11 1379	LLL12 1380

RIDGE

TRIUMPH  
 1133(8)  
 4N X 2E

ROSS 4  
 936 (12)  
 5.5 X 4C

VERMONT #1  
 916 (5)  
 5N X 4E  
 (95704)

JEWEL 5  
 295

JEWEL 1  
 126632  
 126633  
 126634  
 126635  
 126636  
 126637  
 126638  
 126639  
 126640  
 126641  
 126642  
 126643  
 126644  
 126645  
 126646  
 126647  
 126648  
 126649  
 126650

95704  
 95705

Jewel 9  
 1394  
 Jewel 12  
 1397

Jewel 10  
 1398  
 L 3325

Jewel 11  
 1399  
 935 (12)  
 5.5 X 4W

Jewel 6  
 1397  
 Jewel 7

JEWEL 2

43

Cr.

into the 1920's. The mines of Red Mountain, were by and far the premiere producers of the Camp. Also of note were the mines of Monte Cristo, and Columbia-Kootenay mountain; the South Belt mines, where gold was produced associated, with lead - zinc mineralization; the Crown Point area where production was low, but, where mineralization was almost identical to the deposits on Red Mountain, several kilometres to the North west; and finally the Velvet - Portland mines area on the west slopes of Sophia Mountain.

In all the Camp produced some 3,000,000 ounces of gold, and roughly the same amount of silver, in addition to well over 100,000,000 pounds of copper.

To the west of the claim block the claims on which the Velvet-Portland mine is located, were staked in 1896, and work was commenced on them almost immediately. The mine was worked intermittently from 1901 - 1942, and then was the scene of renewed activity from 1954 -1962. In all 91,084 tons of ore have been shipped from the property, which returned 19,744 oz Au, 20,195 oz Ag, 1,224 tons Cu(M of M's 1901-1962).

To the east of the claim block, the O.K., IXL, and the Midnight claims have produced roughly 10,000 tons of ore, which have returned 33,000 oz Au, 13,000 oz Ag, and 20,000 lbs of Cu(M of M's 1898-1962). This high grade deposit is of special note due to the geology of this mine area, and that of the subject claim block being analogous.

The claim area itself has been the site of a good deal of activity over the years, as evidenced by the number of old trenches to be found on the property. Also, there is a caved-in



shaft on the property of undeterminable depth. The writer could not find any record of work done on the property prior to 1960.

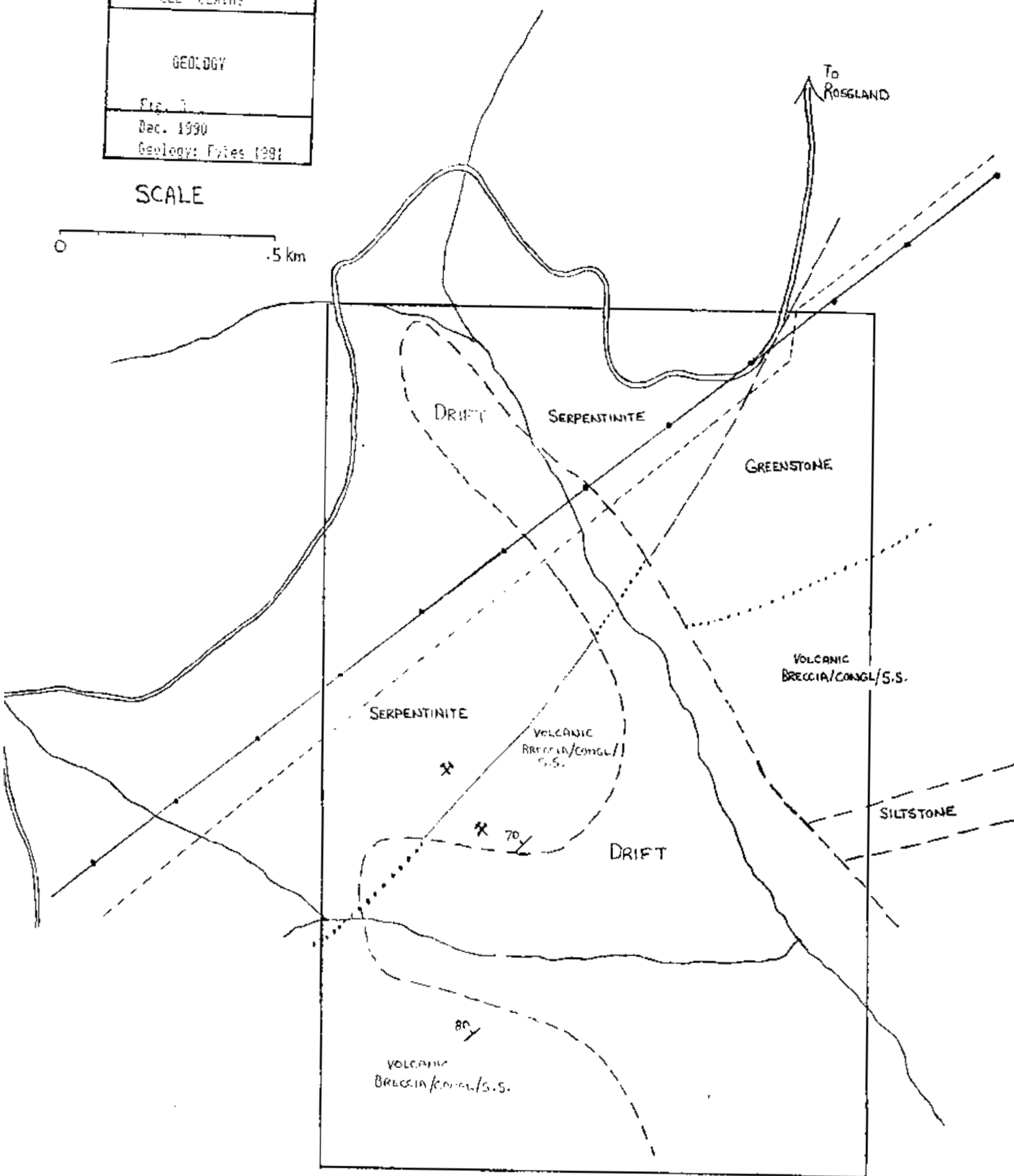
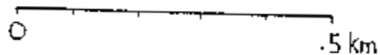
In the past twenty years the area as received a fair amount of attention. In the early 70's the area was staked by G. Addie who conducted exploration for PGE mineralization, which met with only limited success. The area was then staked by Morrison in 1978 who prospected, then conducted geological, and geochemical surveys in the area, followed by trenching, which uncovered a significant mineralized zone in the ultramafics. The property was then optioned off to Noranda who conducted geological, geochemical, and geophysical(IP, Mag, Hlem) surveys over a portion of the claim area. Noranda then conducted some trenching which was not particularly successful. Noranda allowed their option to drop, and an option agreement was then entered into with Sidon International Resources Corp. Sidon conducted geochemical, and geophysical surveys over the areas earlier covered by Noranda, and Morrison, as well as areas further to the south, and to the east, in the claim block.

#### GEOLOGY

The claim area straddles the northeasterly striking contact between a large body of ultramafic rocks, of probable Cretaceous age, and Andesites of the Rossland group of the Lower Jurassic(Fig 3). Locally these rocks are reported to be intruded by various dykes, and other smaller bodies of Eocene aged Coryell monzonite, and syenite(Assmt reports 10,799 & 13,421). Also a porphyritic quartz diorite body, which is surrounded by the ultrabasics has been mapped by both Morrison, and Noranda.

ALL CLAIMS
GEOLOGY
Fig. 3
Dec. 1990
Geology: Fyles 1991

SCALE



Serpentinite is the dominant ultramafic lithology in the area, however several different authors have identified both peridotite, and dunite in the Rosslund camp, hence it is possible that all three may occur within the claim area. The relationship between the ultramafics, and all other rocks is presently unknown.

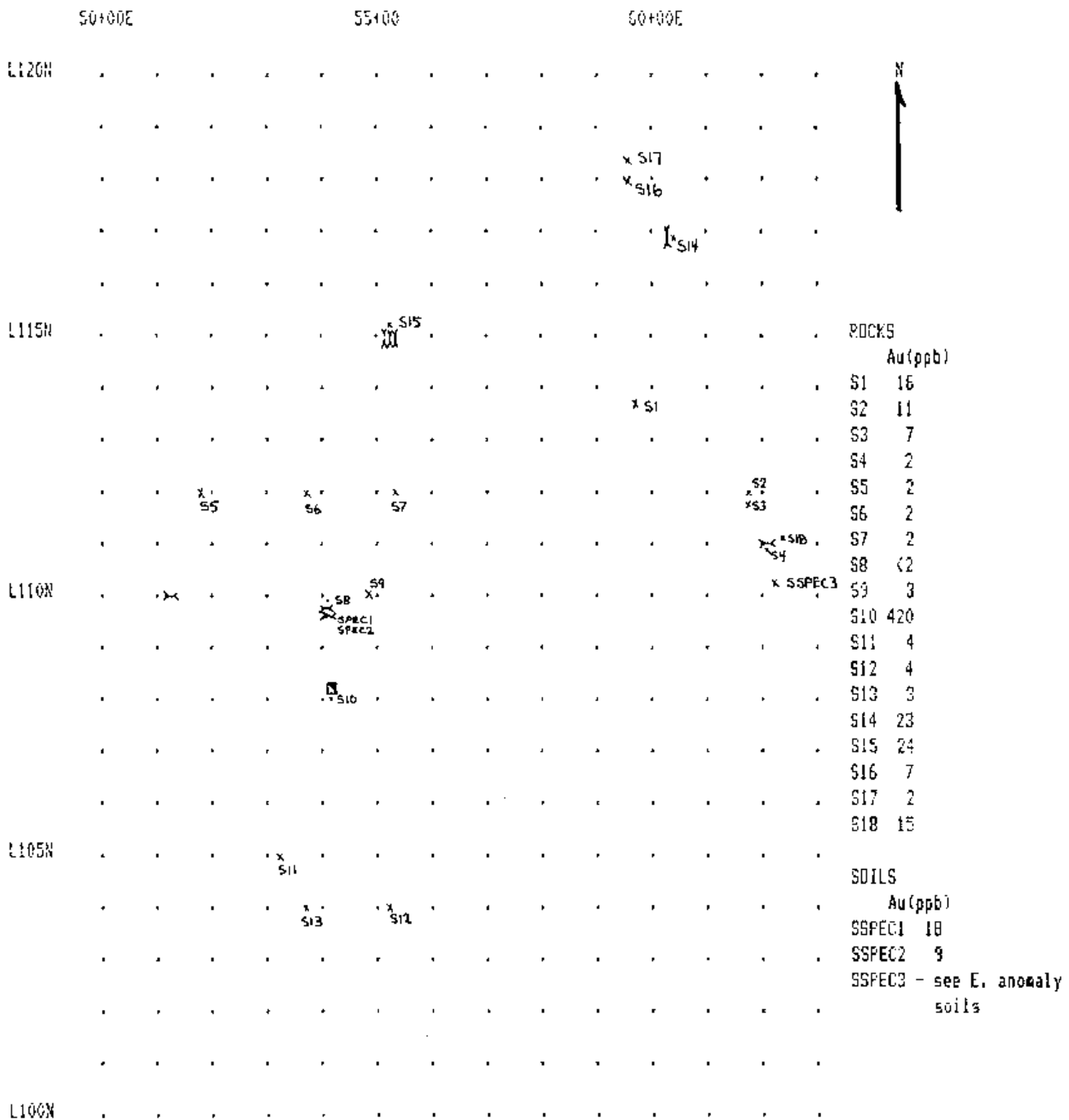
#### PROSPECTING

Six days were spent prospecting(Fig 4) on the property, in the search for new mineral showings, and to follow up any leads from previous published work on the claim area. The grid that was put in by Sidon International(Assmt report #17,346) was utilized for traverses, as it was still in reasonably good shape. All previously known showings were visited, as were all geophysical, and geochemically anomalous areas. In all 18 rock, and three special soil samples were taken, none of which returned significant precious, or base metals.

#### GEOCHEMICAL SURVEY

An infill geochemical survey was conducted on select portions of the already established Sidon grid, to augment, and also to validate previously detected geochemical anomalies (Assmt report #17,346). The survey(Fig's 5 - 8) concentrated on two main areas:

- 1) The eastern central portion of the claim block where a strong base metals geochemical response had been noted.
- 2) The south western portion of the claim block where



LEGEND

- xS5 Sample Location & Number
- ⌵ Trench
- Shaft



LLI CLAIMS
PROSPECTING MAP
Fig. 4
Dec. 1990

scattered anomalous gold values occurred.

On the south western portion it was hoped that with infill work a pattern of anomalous gold values would be outlined, coinciding with economic gold mineralization in local rocks. Especially as this area is in the locale of a felsic intrusive it was felt that it represented a good "hunting ground". However, the gold distribution in soils within the infill area was sporadic(Fig 5).

In the eastern portion of the claim block the infill program was successful in better outlining the shape of the previously known anomaly, as well as confirming its' validity as a bona fide exploration target(Fig's 6,7,8).

Standard industry practices were followed in the conduct of the soil geochemistry survey, with all samples being shipped to Barringer Laboratories in Calgary, or Acme Analytical Laboratories in Vancouver for analyses.

#### GEOPHYSICAL SURVEY

A 1.4 km geophysical Vlf - em survey was conducted over the eastern anomaly(Assmt report #17,346) to give it better definition(Fig's 9 & 10). Readings were taken at intervals of 12.5 metres, on lines which were 50 metres apart, in an effort to increase the resolution of the anomaly first noted in the above report. A Geonics Vlf - em Model Eml6 receiver was used(Serial #14802) for the survey, utilizing the Seattle station as a transmitter. All readings were taken facing westerly. The inphase data thus gained was then Fraser filtered(Fraser 1969) to render it into a contourable form.

50+00E

52+00E

54+00E

56+00E

L108N

x x  
<2 <2

x x x x x x  
<2 2 <2 2 3 2

L102N

x x x x x x x  
<2 4 2 3 2 6 5

x x x x x x  
6 2 2 9 <2 <2 2 15 2  
x x x x x  
2 2 10 3 1

L104N

x x x x x  
3 2 3 <2 77 5

x x x x x x  
<2 8 2 <2 5 3 5 18 2 4

x x x x x  
2 1 1 1 1

L102N

x x x x x x  
1 60 1 2 24 2

x x x x  
<2 9 2

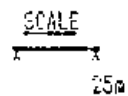
x x x x x  
1 1 2 1 2

x x x x x  
<2 <2 2 15 6 2 <2



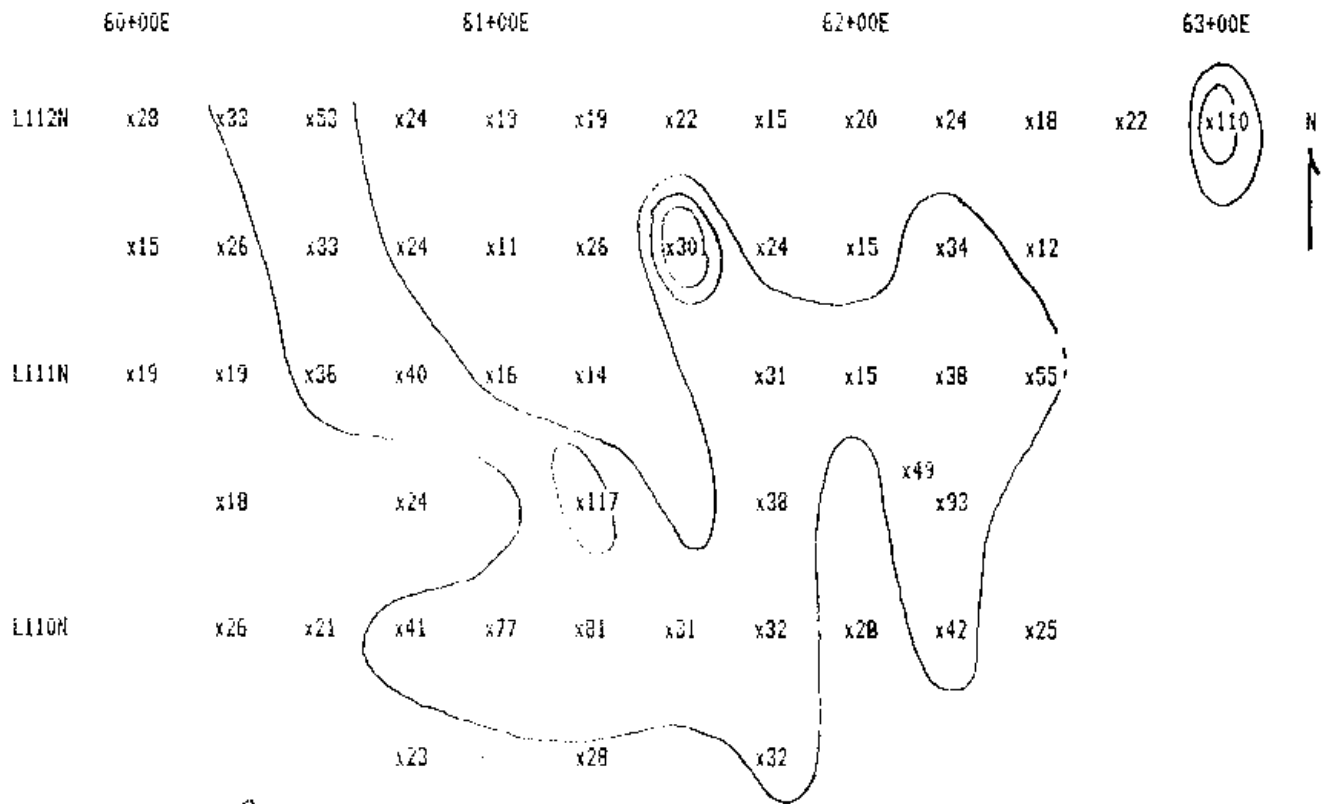
LEGEND

- x Sample Location
- 0 Assay result



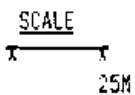
LLL CLAIMS WESTERN ANOMALY
Au GEOCHEMICAL SURVEY MAP
Fig. 5
Dec. 1990





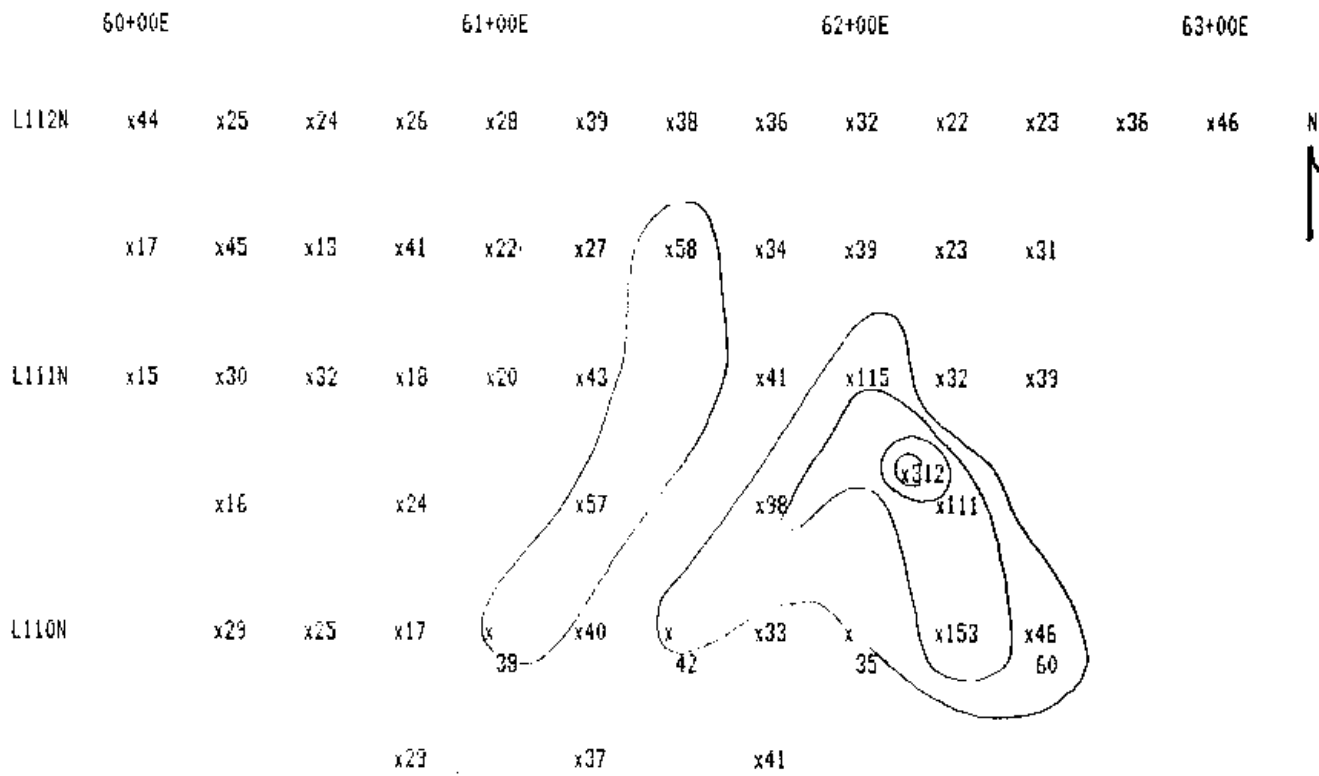
LEGEND

- x    Sample Location
- x22    Assay Result
- Contour Line



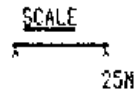
LLL CLAIMS EASTERN ANOMALY
Pb(ppm) GEOCHEMICAL SURVEY MAP
Fig. 7
Dec. 1990





LEGEND

- x Sample Location
- x22 Assay Result
- Contour Line



LLL CLAIMS EASTERN ANOMALY
Cu(ppm) GEOCHEMICAL SURVEY MAP
Fig. 8
Dec. 1990

## RESULTS

Prospecting failed to discover any new, and significant mineralization on the property. Several old trenches were located, and sampled, but, nothing of real interest was found. The eastern most trench on L111+00N was found where the earlier soil survey(Assmt Report #17,346) had disclosed a multi-element anomaly. This trench was found to be in siltstones, which contained disseminated sulphides, but which did not contain significant concentrations of base or precious metals. In all approximately 25 kilometres of flagged line were traversed.

The Geochemical survey in the southwestern portion of the claim block did not outline any consistent, and meaningful pattern of gold mineralization in this area. There are a few spot highs, the highest of which is 60 ppm, but, further infill work in this area failed to produce further results of any interest, hence little value is placed on this portion of the claim area.

Infill work on the eastern anomaly was successful in fully defining the areal extent of the earlier(report 17,346) discovered anomaly. The three element(Cu,Pb,Zn) anomalous area appears to be confined to the area between L's 110+00N to 111+50N and from between 61+00 to 62+50E. The peak concentrations of these three elements do not occur at coincidental locations, but the anomaly contours on the Zinc geochem map(Fig 6) contains the locations of the peak concentrations of both Lead, and Copper. The concentrations of Lead and Zinc in the soils in this area indicate that these minerals probably do not occur in economic quantities. However, they may be important pathfinders to deposits similar to the IXL, or the Velvet - Portland where minor

60+18.75E

61+18.75E

62+18.75E

L112N

-5 -2 -4 -2 -2 -5 2 18 21 11 0 4 -7 -2 3 4 3 4 5 3 3 1

-10 -18 -25 -16 -11 -11 -11 -10 -3 13 23 24 29 26 13 10 26 31 5 -10 3

L111N

-11 -5 -4 -8 -9 10 33 56 49 -6 -27 9 35 59 10 -24 -36 -26 -19 -13 -15 -11

14 3 -6 -13 -24 -22 13 39 20 1 4 -1 -15 -18 -19 -10 0 -3

L110N

-15 -19 -11 -10 2 11 15 18 12 0 -1 -0 -9 2 9 -1 -9 -8

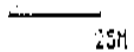


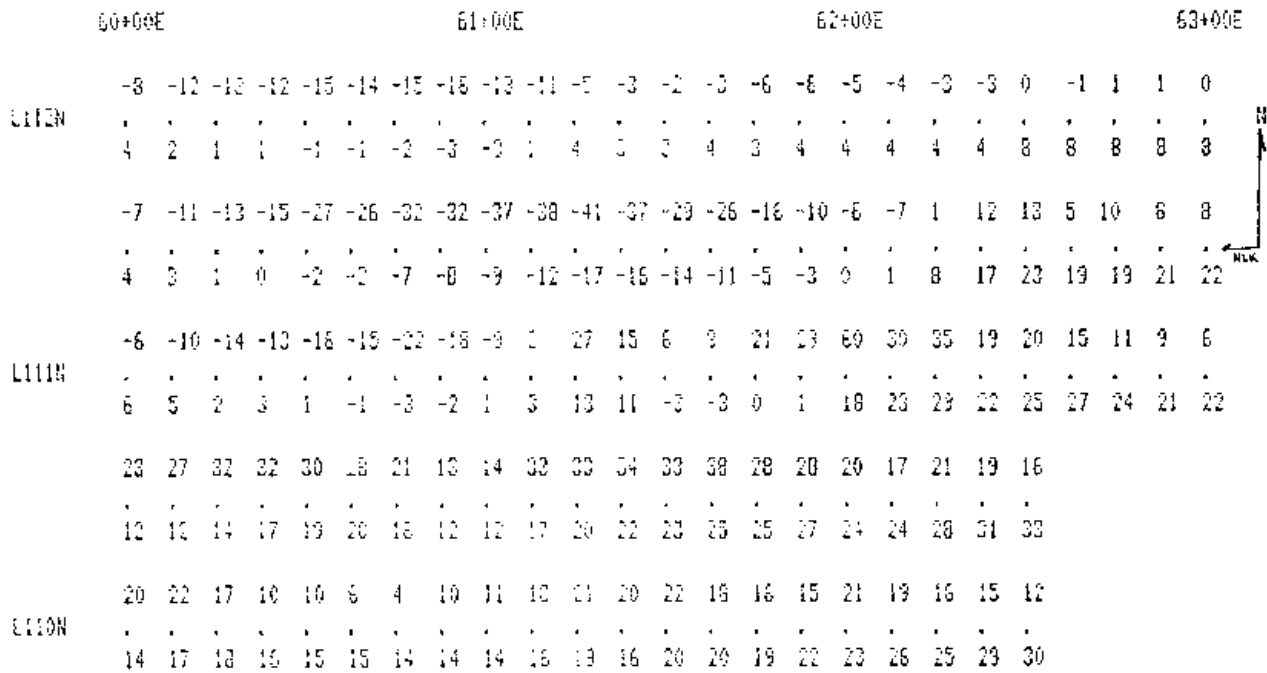
LEGEND

- Filtered Data
- Plotting Location
- Contour Line

LLL CLAIMS EASTERN ANOMALY
Vlf - em GEOPHYSICAL SURVEY MAP
Fig. 9
Dec. 1990

SCALE

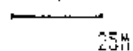




LEGEND

- .
- 20 In Phase
- .
- 10 Out of Phase

SCALE



LLL CLAIMS EASTERN ANOMALY
Vlf - em GEOPHYSICAL SURVEY NAP
Fig 10
Dec. 1990

amounts of these minerals were produced along with precious metals.

The Vlf - em survey over the eastern area produced a good clear image of conductor strike, and attitude(Fig 9). It appears that there are three conductors of consequence located in this area. One of these which strikes southwesterly, appears to have a junction with a northeasterly striking conductor at 61+80E on line 111+00N. The peak response from these two conductors occurs at this junction, and it appears that the southern most terminus of both of these conductors occurs slightly to the south of this point. The resultant unified conductor appears to dip steeply to the west. The other conductor in this area exhibits a peak response on line 111+00N at approximately 61+10E, and has a northern most terminus just to the north of this point. This conductor exhibits a more northerly strike, and also appears to dip to the West.

#### CONCLUSIONS AND RECOMMENDATIONS

The soil geochemical survey was not successful in outlining a pattern of anomalous gold mineralization in the Southwest corner of the claim block. It was successful in outlining a pattern of base metal mineralization in the eastern portions of the claim block. The 1.4 kilometre detailed Vlf-em survey was successful in detecting, and better defining a previously known Vlf-em anomaly in the eastern area. Prospecting, while successful in locating a number of old workings on the claim block, was not successful in uncovering any significant mineralization.

A two hole shallow diamond drilling program is recommended to test the two geophysical highs located on L111+00N, at approximately 61+10E, and 61+80E, to determine if any economic mineralization is associated.

PROPOSED PROGRAM COSTS

200 feet Diamond Drilling		
@ \$20.00/foot	=	\$4000.00
Site prep, Supervision, etc.		
4 days @ \$200.00/day	=	800.00
Transportation, Assays, etc.	=	300.00
	TOTAL	\$5100.00

STATEMENT OF COSTS

Prospecting		
6 days @ \$200.00/day	=	\$1200.00
Geochemical Survey		
4 days @ \$200.00/day	=	800.00
Geophysical Survey		
1 day @ \$200.00/day	=	200.00
Report Preparation		
2 days @ \$200.00/day	=	400.00
Assays & Prep.		
18 rocks @ \$15.00/sample	=	270.00
132 soils @ \$8.67/sample	=	1144.50
Transportation		
4 X 4 rental 11 days @ \$25.00/day	=	275.00
Vlf - em Rental		
1 day @ \$40.00/day	=	40.00
Supplies, shipping, etc.	=	45.00
	TOTAL	\$4374.50

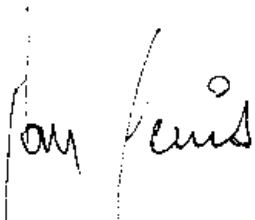
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CERTIFICATE OF QUALIFICATIONS

I, Thomas M. Lewis, of P.O. Box 793 Rossland, in the Province of British Columbia do hereby certify that:

- 1) I am a graduate (1989) of Brandon University, Brandon Manitoba, with a BSc. degree in geology, a graduate (1986) of Mount Royal College, Calgary Alberta, with a Diploma in Petroleum, and Mineral Land Management, and a graduate (1975) of Fanshawe College, London Ontario, with a Diploma in Arts and Sciences.
- 2) I am a geologist residing at 1830 4th Avenue, Rossland, B.C.
- 3) I have been continually active in mining exploration since 1987.
- 4) I am an Associate member of the Geological Association of Canada.
- 5) This report is based on work conducted by myself, on the property, and from the references cited in the bibliography.
- 6) I am the sole beneficial holder of the claims.

  
Thomas M. Lewis BSc.

Dated at Rossland, British Columbia this 18th day of March, 1991.



SOPHIA SAMPLE DESCRIPTIONS

- S1 113+75N - 59+50E Silic volc w/blebs, & dissem po.
- S2 111+60N - 61+75E Volc. w/blebs, & dissem po. Qtz cavity fillings.
- S3 111+50N - 61+75E Andesite w/blebs & dissem py, poss tr graph. Silicified zone.
- S4 111+00N - 62+00E Siltstone w/dissemin py & po.
- S5 111+85N - 52+50E Dunite w/dissemin magnetite.
- S6 112+00N - 53+75E V crse grd intermed intrusive (Qtz Diorite). w/magnetite.
- S7 112+00N - 55+10E Dunite w/dissemin magnetite.
- S8 110+00N - 54+00E From pits. Sheared Dunite w/Magnetite
- S9 110+00N - 54+87E Intermed volc w/dissemin py.
- S10 108+10N - 54+25E Boiler Adit. Qtz/carb vein - N wall adit. Py w/tr po.
- S11 104+55N - 53+25E Fn grd Qtz diorite. v fn grd py dissem/blebs & along frac's.
- S12 103+00N - 55+18E Qtz diorite w/< 1% cubic py.
- S13 103+00N - 53+70E Siltstone w/1-2% fn grd dissem py & po
- S14 116+75N - 59+50E Serp w/dissemin po, mag, & cu py.
- S15 115+00N - 55+25E Serp/Qtz monz contact. Pits. Monz. w/1 % dissem py.
- S16 117+00N - 57+50E Float. Silic andesite, w/2-3% dissem py & po.
- S17 116+60N - 57+50E Float. Serp w/ dissem mag.
- S18 111+00N - 62+10E Andesite w/dissemin & blebs po.

**BARRINGER***Laboratories (Alberta) Ltd.*

4200B - 10 STREET N.E., CALGARY, ALBERTA, CANADA T2E 6K3  
 PHONE: (403) 250-1901

AUTHORITY: T. LEWIS

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**GEOCHEMICAL LABORATORY REPORT**

SAMPLE TYPE: SOIL

SAMPLE NUMBER	AU PPB	CU PPM	PB PPM	ZN PPM
11150N:61+00E	2.0	27.0	11.0	151.0
11150N:61+25E	<2.0	22.0	26.0	346.0
11150N:61+50E	9.0	58.0	301.0	435.0
11150N:61+75E	2.0	34.0	24.0	148.0
11150N:62+00E	4.0	39.0	15.0	146.0
11150N:62+25E	<2.0	23.0	34.0	228.0
11150N:62+50E	2.0	31.0	12.0	189.0
11100N:62+00E	11.0	115.0	15.0	1080.0
112N:53+75E	8.0	20.0	37.0	302.0
114N:52+75E	3.0	116.0	17.0	99.0
114N:53+00E	4.0	58.0	15.0	67.0
114N:53+25E	2.0	53.0	13.0	61.0
114N:53+50E	7.0	30.0	12.0	53.0
114N:53+75E	2.0	22.0	14.0	70.0

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**GEOCHEMICAL LABORATORY REPORT**

SAMPLE TYPE: SOIL

SAMPLE NUMBER	AU PPB
101N:52+25E	<2.0
101N:52+75E	<2.0
101N:53+25E	2.0
101N:53+75E	15.0
101N:54+25E	6.0
101N:54+75E	2.0
101N:55+25E	<2.0
101N:59+75E	<2.0
101N:60+25E	<2.0
101N:60+75E	2.0
101N:61+25E	12.0
101N:61+75E	25.0
102N:52+25E	60.0
102N:52+75E	24.0
102N:53+25E	2.0
102N:53+75E	<2.0
102N:54+25E	9.0
102N:54+75E	2.0
103N:52+75E	<2.0
103N:53+25E	8.0
103N:53+75E	2.0
103N:54+25E	<2.0
103N:54+75E	5.0
103N:55+25E	18.0
103N:55+75E	4.0
104N:53+25E	3.0
104N:53+75E	2.0
104N:54+25E	3.0
104N:54+75E	<2.0
104N:55+25E	77.0

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\*\*\* FINAL REPORT \*\*\*

**GEOCHEMICAL LABORATORY REPORT**

SAMPLE TYPE: SOIL

SAMPLE NUMBER	AU PPB
104N:55+75E	5.0
105N:51+25E	6.0
105N:51+75E	2.0
105N:52+25E	2.0
105N:52+75E	9.0
105N:53+25E	<2.0
105N:53+75E	<2.0
105N:54+25E	2.0
105N:54+75E	15.0
105N:55+25E	2.0
105N:55+75E	MS
106N:50+75E	<2.0
106N:51+25E	4.0
106N:51+75E	2.0
106N:52+25E	3.0
106N:52+50E	2.0
106N:52+75E	6.0
106N:53+25E	5.0
107N:50+25E	<2.0
107N:50+50E	2.0
107N:50+75E	<2.0
107N:51+25E	2.0
107N:51+75E	3.0
107N:52+00E	2.0
108N:50+25E	<2.0
108N:50+75E	<2.0
108N:54+30E	4.0
110N:54+75E	2.0
110N:54+87.5E	2.0
SSPEC:1	18.0



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852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6  
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DATE RECEIVED: DEC 10 1990

DATE REPORT MAILED: *Dec. 11/90.*

### GEOCHEMICAL ANALYSIS CERTIFICATE

Tom Lewis FILE # 90-6263  
P.O. Box 793, Rossland B.C. V0G 1Y0

SAMPLE#	AU* ppb
L104+50N 55+00E	2
L104+50N 55+12.5E	2
L104+50N 55+25E	10
L104+50N 55+37.5E	3
L104+50N 55+50E	1
L103+00N 54+87.5E	3
L103+00N 55+12.5E	5
L103+00N 55+37.5E	2
L102+50N 52+00E	2
L102+50N 52+25E	1
L102+50N 52+50E	1
L102+50N 52+75E	1
L102+50N 53+00E	1
L102+50N 54+75E	2
L102+50N 55+00E	3
L102+50N 55+25E	3
L102+00N 52+12.5E	1
L102+00N 52+37.5E	1
L102+00N 52+62.5E	2
L102+00N 52+87.5E	2
L101+50N 52+00E	1
L101+50N 52+25E	1
L101+50N 52+50E	2
L101+50N 52+75E	1
L101+50N 53+00E	2
STANDARD AU-S	51

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

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

GEOCHEMICAL ANALYSIS CERTIFICATE

Tom Lewis File # 90-6264 Page 1  
P.O. Box 793, Rossland B.C. V0G 1Y0

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
L112+00N 60+00E	1	44	28	132	.4	62	13	1517	2.71	6	5	ND	2	63	.8	4	3	54	.71	.047	29	56	.65	118	.14	9	2.26	.05	.13	1
L112+00N 60+25E	1	25	33	179	.2	72	15	915	3.07	18	5	ND	2	53	1.0	2	2	53	.45	.214	8	67	.77	207	.16	7	2.88	.03	.15	1
L112+00N 60+50E	1	24	53	154	.1	60	13	925	2.53	13	5	ND	2	35	.7	2	2	46	.23	.186	8	56	.61	162	.14	2	2.64	.03	.13	1
L112+00N 60+75E	1	26	24	156	.2	93	14	681	3.08	13	5	NO	3	40	.2	2	2	55	.27	.187	10	72	.90	222	.16	7	3.18	.04	.15	1
L112+00N 61+00E	1	28	19	150	.3	89	15	858	2.93	15	5	ND	3	41	.6	4	2	53	.29	.181	10	67	.85	185	.16	7	3.53	.02	.15	1
L112+00N 61+25E	1	39	19	111	.1	55	16	920	3.50	17	5	ND	3	48	.2	2	2	63	.33	.197	9	63	1.06	268	.17	5	3.40	.03	.19	1
L112+00N 61+50E	1	38	22	128	.1	51	16	1303	3.32	10	5	ND	2	48	.3	2	2	62	.37	.145	12	57	.89	304	.17	4	3.21	.03	.17	1
L112+00N 61+75E	1	36	15	92	.3	49	14	768	3.17	8	5	ND	3	27	.2	2	2	66	.23	.102	11	58	.91	179	.17	2	3.31	.02	.13	1
L112+00N 62+00E	1	32	20	107	.2	51	14	815	3.05	11	5	ND	3	24	.2	3	2	61	.19	.139	9	59	.92	212	.17	5	3.08	.03	.12	1
L112+00N 62+25E	1	22	24	146	.2	40	17	1226	3.75	6	5	ND	1	55	.2	2	2	61	.41	.176	9	63	1.12	266	.18	2	3.21	.03	.12	1
L112+00N 62+50E	1	23	18	162	.2	64	13	977	2.84	10	5	ND	3	37	.8	2	2	52	.25	.163	7	51	.69	280	.17	3	3.02	.04	.15	1
L112+00N 62+75E	1	36	22	118	.2	58	16	1508	3.43	8	5	ND	2	48	.2	2	2	65	.29	.169	11	68	1.00	343	.17	5	3.13	.03	.18	1
L112+00N 63+00E	1	46	110	141	.2	31	13	1925	2.68	22	5	ND	1	23	2.3	3	2	52	.19	.143	7	47	.60	219	.14	4	1.66	.03	.12	1
L111+50N 60+00E	1	17	15	151	.1	69	13	1153	2.83	9	5	ND	2	35	.3	2	2	47	.23	.176	8	66	.73	348	.16	4	2.65	.03	.14	1
L111+50N 60+25E	1	45	26	156	.3	92	17	1104	3.76	17	5	ND	5	159	.2	2	2	63	.46	.306	26	87	1.35	307	.23	4	3.83	.03	.26	1
L111+50N 60+50E	1	13	33	147	.1	68	11	1174	2.45	17	5	ND	2	38	.2	3	2	43	.28	.136	6	54	.59	222	.16	4	2.40	.03	.14	1
L111+50N 60+75E	1	41	24	143	.3	105	15	358	3.19	14	5	ND	5	41	.4	2	2	59	.32	.100	11	90	1.04	190	.15	5	2.91	.03	.17	1
L111+00N 60+00E	1	15	19	130	.2	137	14	745	2.79	12	5	ND	3	29	.3	2	2	43	.21	.250	9	92	.80	210	.14	6	2.97	.03	.13	1
L111+00N 60+25E	1	30	19	131	.3	94	17	495	3.51	11	5	ND	4	30	.2	3	2	55	.26	.233	10	81	.99	226	.18	7	3.79	.03	.19	1
L111+00N 60+50E	1	32	36	219	.2	78	22	1412	3.20	14	5	ND	1	49	.8	2	2	49	.37	.294	7	60	.71	295	.15	5	3.35	.02	.15	1
L111+00N 60+75E	1	18	40	280	.2	81	14	1162	2.93	9	5	ND	2	45	1.6	2	2	51	.32	.199	8	67	.76	311	.15	6	2.60	.03	.17	1
L111+00N 61+00E	1	20	16	279	.1	73	13	590	2.77	17	5	ND	2	25	.6	2	2	48	.21	.191	6	51	.51	152	.17	2	2.70	.03	.14	1
L111+00N 61+25E	2	43	14	749	.4	80	14	742	3.15	19	5	ND	3	52	7.4	3	2	74	.34	.208	8	60	.81	247	.16	7	3.72	.03	.19	1
L111+00N 61+75E	2	41	31	1049	.2	76	14	840	3.37	15	5	ND	2	51	11.7	2	2	73	.34	.078	7	53	.74	229	.17	4	3.25	.04	.18	1
L111+00N 62+25E	1	32	38	294	.3	58	16	1458	3.42	12	5	ND	2	46	1.9	2	2	64	.34	.210	9	61	.89	321	.15	5	2.99	.02	.17	1
L111+00N 62+50E	1	39	55	196	.4	49	16	1660	3.26	15	5	ND	1	54	2.0	4	2	65	.47	.100	11	61	.97	279	.14	6	2.84	.02	.18	1
L110+50N 60+25E	1	16	18	126	.2	110	16	866	2.89	11	5	ND	3	24	.4	3	3	51	.21	.069	8	118	.89	116	.13	7	1.75	.03	.13	1
L110+50N 60+75E	1	24	24	166	.1	127	18	1147	3.17	13	5	ND	2	45	.7	2	2	56	.30	.142	9	94	1.04	247	.14	2	2.37	.03	.14	1
L110+50N 61+25E	1	57	117	276	.1	40	21	3073	2.75	14	5	ND	1	85	4.4	2	2	42	.62	.269	8	36	.57	501	.11	3	2.83	.02	.15	1
L110+50N 61+75E	4	98	38	184	.1	59	22	2342	5.46	5	5	NO	1	90	1.7	2	8	107	.95	.145	4	71	1.52	348	.14	2	4.57	.05	.44	12
L110+50N 62+25E	1	111	93	259	.2	32	59	2167	3.94	11	5	ND	1	142	2.7	3	2	46	1.08	.516	6	45	.95	555	.11	5	2.91	.03	.25	1
L110+00N 60+25E	1	29	26	119	.1	117	18	484	3.22	11	5	ND	2	38	.4	2	2	53	.33	.146	8	107	1.14	213	.16	3	2.72	.03	.19	1
L110+00N 60+50E	1	25	21	118	.1	127	18	695	3.31	8	5	ND	2	30	.6	2	2	56	.24	.119	10	100	1.23	195	.16	2	3.21	.02	.17	1
L110+00N 60+75E	1	17	41	147	.3	74	15	1246	2.40	15	5	ND	1	68	2.2	2	2	34	.77	.209	11	54	.58	282	.10	11	1.79	.02	.15	1
L110+00N 61+00E	3	38	77	190	.5	71	19	2540	3.08	11	5	ND	1	78	3.7	3	6	48	.62	.167	12	71	.97	637	.13	6	2.62	.02	.22	5
L110+00N 61+25E	1	40	81	205	.1	37	19	3921	2.43	11	5	ND	1	96	3.8	2	4	36	.57	.248	10	41	.53	916	.12	3	2.12	.02	.14	2
STANDARD C	18	58	39	131	6.9	70	32	1036	3.97	40	18	7	36	52	18.7	14	21	56	.46	.097	36	61	.86	179	.07	33	1.88	.06	.13	13

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM. - SAMPLE TYPE: SOIL

DATE RECEIVED: DEC 10 1990 DATE REPORT MAILED: Dec 11/90 SIGNED BY: *Chung* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm
L110+00N 61+50E	1	42	31	146	.2	62	16	1449	3.28	12	5	ND	1	122	1.3	2	4	58	.74	.273	13	65	1.02	464	.17	9	3.08	.03	.20	2
L110+00N 61+75E	1	33	32	184	.3	22	14	2894	2.16	11	5	ND	1	117	1.7	2	2	37	.78	.440	12	28	.43	820	.11	9	2.60	.04	.19	1
L110+00N 62+00E	1	35	28	165	.2	67	18	986	3.72	10	5	ND	4	64	.6	2	2	64	.46	.180	14	64	1.05	402	.22	7	3.81	.03	.24	1
L110+00N 62+25E	1	153	42	171	.1	55	54	2638	4.16	19	5	ND	1	74	1.5	4	2	42	.65	.400	10	37	.53	411	.12	10	4.02	.02	.13	1
L110+00N 62+50E	1	60	25	167	.3	71	19	575	4.46	15	5	ND	4	58	.2	2	2	87	.48	.092	17	81	1.46	203	.27	9	4.42	.04	.25	1
L109+50N 60+75E	1	29	23	139	.3	118	17	898	3.34	15	5	ND	3	45	.7	2	2	55	.37	.246	16	93	1.04	263	.18	10	3.68	.03	.18	1
L109+50N 61+25E	1	37	28	159	.3	129	21	718	4.12	14	5	ND	3	57	.2	2	2	68	.47	.174	15	108	1.60	252	.22	10	4.05	.03	.28	1
L109+50N 61+75E	2	41	32	178	.2	72	18	1191	3.94	13	5	ND	2	82	1.2	2	5	66	.57	.322	14	73	1.20	391	.20	7	3.94	.03	.23	4
SSPEC 3	7	312	49	329	.7	66	25	496	7.81	49	5	ND	3	51	1.2	4	2	67	.24	.410	9	42	.59	109	.12	7	5.75	.03	.16	1
STANDARD C	18	59	44	134	7.3	71	31	1042	3.98	42	17	7	37	52	19.0	14	19	57	.46	.098	40	59	.87	180	.07	35	1.90	.07	.14	13



**BARRINGER**

*Laboratories (Alberta) Ltd.*

4200B - 10 STREET N.E., CALGARY, ALBERTA, CANADA T2E 6K3  
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AUTHORITY: T. LEWIS

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*Laboratories (NWT) Ltd.*

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PHONE: (403) 920-4500

22-AUG-90

PAGE: 1 OF 6

COPY: 1 OF 2

WORK ORDER: 7142D-90

\*\*\* FINAL REPORT \*\*\*

**GEOCHEMICAL LABORATORY REPORT**

SAMPLE TYPE: ROCK

SAMPLE NUMBER	AU PPB
S-: 1	16.0
S-: 2	11.0
S-: 3	7.0
S-: 4	2.0
S-: 5	2.0
S-: 6	2.0
S-: 7	2.0
S-: 8	<2.0
S-: 9	2.0
S-: 10	420.0
S-: 11	4.0
S-: 12	4.0
S-: 13	3.0
S-: 14	23.0
S-: 15	24.0
S-: 16	7.0
S-: 17	2.0

ACME ANALYTICAL LABORATORIES LTD.  
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PHONE (604) 253-3158 FAX (604) 253-1716

DATE RECEIVED: DEC 10 1990

DATE REPORT MAILED: Dec 11/90.

### GEOCHEMICAL ANALYSIS CERTIFICATE

Tom Lewis FILE # 90-6262  
P.O. Box 793, Rossland B.C. V0G 1Y0

SAMPLE #	AU* ppb
S18	15
STANDARD AU-R	450

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

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

