

D. L. COOKE AND ASSOCIATES LTD.  
MINERAL EXPLORATION CONSULTANTS

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VANCOUVER, B.C.

LOG NO: Feb 27/91 RD.  
ACTION:  
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1990 RECONNAISSANCE GEOLOGY  
AND GEOCHEMISTRY OF  
THE LAC 1 - 4 CLAIMS

Mt. Milligan Area  
NTS 93 O / 4 W

Latitude: 55° 06' North  
Longitude: 123° 50' West  
Omineca M.D.

by

DAVID L. COOKE, Ph.D., P.Eng.  
D.L. COOKE AND ASSOCIATES LTD.  
811 - 675 West Hastings Street  
Vancouver, B.C.  
V6B 1N2

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

20,992

January 29, 1991

Work Done: June 2-8, 1990

Claims on which work was done:

<u>Claim</u>	<u>Units</u>	<u>Record No.</u>	<u>Month of Record</u>
Lac 1	20	11722	March 28, 1991
Lac 2	20	11723	March 28, 1991
Lac 3	18	11724	March 27, 1991
Lac 4	12	11725	March 27, 1991

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- Figure 1: Location Map, Lac Claims  
Mt. Milligan Area
- Figure 2: Claim Map, Lac Claims, 1:50,000
- Figure 3: Reconnaissance Geology and Sample Locations,  
Lac Claims; 1:10,000
- Figure 4: Reconnaissance Geochemistry, Lac Claims, Gold,  
Arsenic and Copper; 1:10,000

## APPENDICES

- Appendix I Statement of Expenditures  
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## SUMMARY

The Lac property consists of the Lac 1 to 4 mineral claims which total 70 claim units. These claims are located in the Mt. Milligan area and may be reached by road 85 kilometres southwest of McKenzie, B.C.

The Mt. Milligan area is rapidly becoming a new camp for porphyry copper-gold deposits. Placer Dome Inc. recently acquired the Mt. Milligan copper-gold deposit from Continental Gold Corp. The deposit is covered by glacial drift which also obscures a great portion of the surrounding areas. The host rocks consist of Takla volcanic flows and tuffs and coeval alkaline intrusions of monzonitic composition.

The mineralization occurs in typical porphyry copper style and consists mainly of pyrite and chalcopyrite stockwork and disseminations. Gold occurs in the free state and in association with the sulphides. Gold-bearing quartz carbonate veins also commonly occur peripheral to the porphyry copper-gold mineralization and are localized by fault zones.

The Lac claims are partially covered by glacial drift. Rock exposures consist of strongly sheared and carbonatized Takla volcanic rocks containing abundant disseminations of pyrite. There is also evidence of quartz-carbonate stockwork and veins within the sheared and altered volcanic rocks. Minor amounts of black pyritic argillites occur within the volcanic assemblage.

Reconnaissance prospecting, geological mapping, rock and soil sampling were done over portions of the property during the periods June 2-8, 1990. Anomalous values for arsenic in soils were found in the northwest corner of the property where the glacial cover is shallow. Rock geochemistry within this area also returned anomalous results for arsenic, copper and silver. A few strongly anomalous values for gold in soils appear to be randomly distributed across the property.

These anomalous results are sufficiently encouraging to warrant further exploration of the Lac claims. Additional geological mapping, soil and rock geochemistry are recommended, together with VLF-EM, magnetometer and induced polarization surveys to detect disseminated sulphides below the glacial cover.

## INTRODUCTION

The Lac claims were staked in a drift-covered area over the eastern portion of a small boomerang-shaped aeromagnetic anomaly which occurs approximately 3.5 kilometres east of the Mt. Milligan copper-gold deposit of Continental Gold Corp. The Lake 1-5 claims cover the western portion of this aeromagnetic anomaly. The Mt. Milligan deposit lies on the southeast margin of a large aeromagnetic anomaly which reflects an underlying diorite - syenodiorite - monzonite intrusive complex. Detailed low-level airborne and ground magnetic surveys define the Mt. Milligan zones of mineralization as small satellite magnetic anomalies caused by sulphide-bearing monzonitic dikes and plugs.

The claims were examined for their porphyry copper-gold and gold vein potential during the period June 2-8, 1990. The results of this exploration work forms the subject of this report. A total of \$7,725.00 was spent in the exploration of the Lac 1 to 4 mineral claims. This report is submitted for assessment credits to maintain the Lac 1 to 4 claims each for a period of one year.

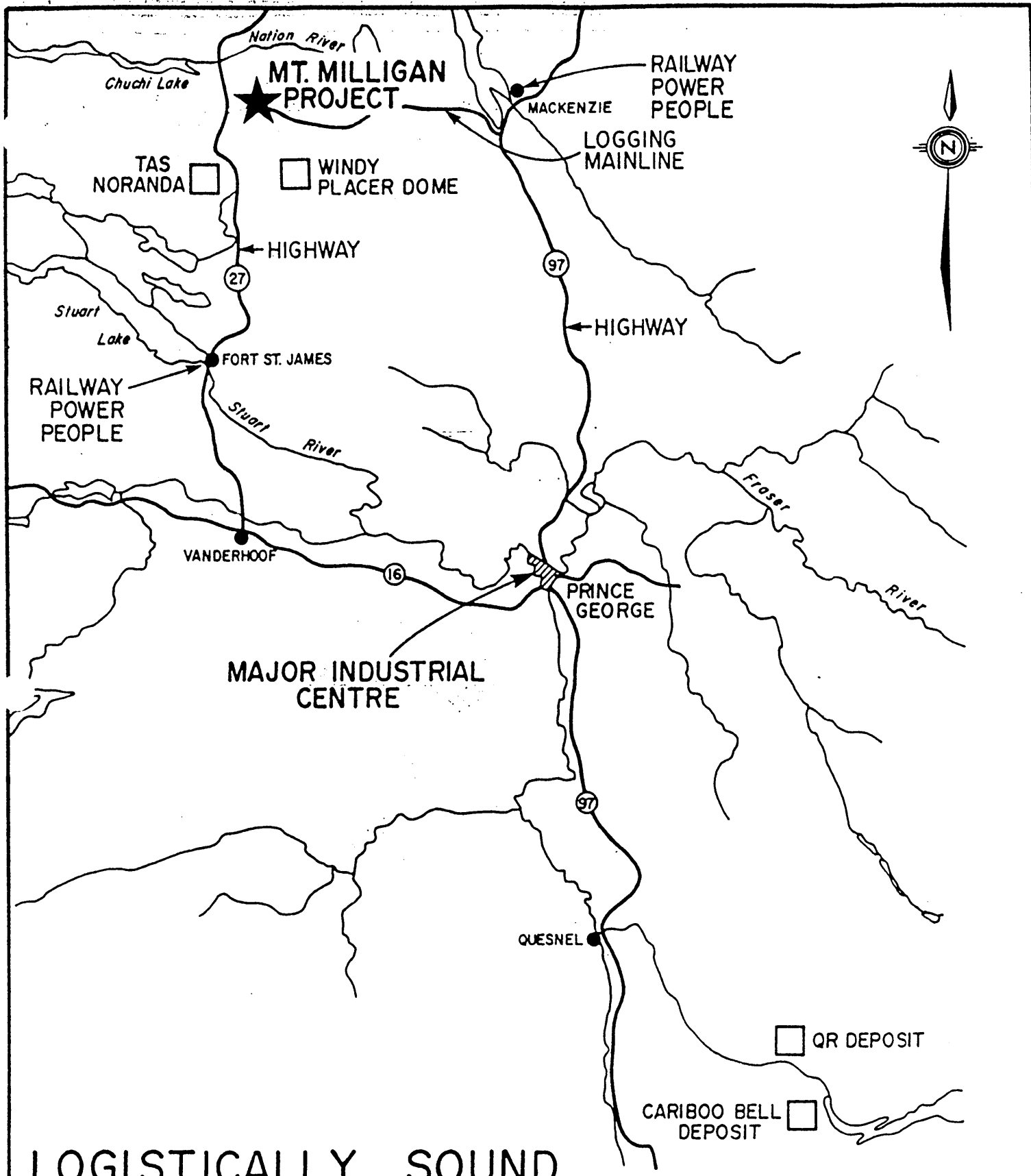
## 1990 EXPLORATION PROGRAM

There is no record of prior exploration work in the area of the Lac claims. The current reconnaissance program consisted of prospecting, geological mapping, soil and rock geochemistry along logging roads and logged off areas. Soil samples were collected every 100 metres along the traversed areas. Rock samples were collected for assay at irregular intervals. Data was blotted on 1:10,000 topographic maps. Sample control was provided by topofil chain from known points. This work was done by David L. Cooke, Ph.D., P.Eng., geologist, and M.A. Cooke, field assistant.

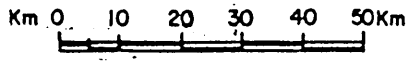
## LOCATION AND ACCESS

The Lac claims are situated in the Omineca Mining Division, approximately 35 kilometres southwest of McKenzie, B.C. (Figure 1). The claims lie 4.5 kilometres east of the Continental Gold Corp. / Placer Dome deposit. Access to the claims is from McKenzie by 85 kilometres of good logging roads operated by Fletcher Challenge Ltd. The area is one of active logging operations, and there are numerous clear-cut areas on the Lac property.

The property area is generally gently rolling. Elevations on the claims range from 992 metres at the level of Philip Lakes to 1,300 metres in the northeast section. Vegetation is primarily a mixture of spruce, fir and lodgepole pine. The underbrush is very dense in areas of secondary growth, which consist of young spruce and fir.



LOGISTICALLY SOUND



**MT. MILLIGAN  
GOLD/COPPER PROJECT  
LOCATION MAP**

Drawn. JW.	Date. Oct. 1988	FIG. 1
Scale. As shown		

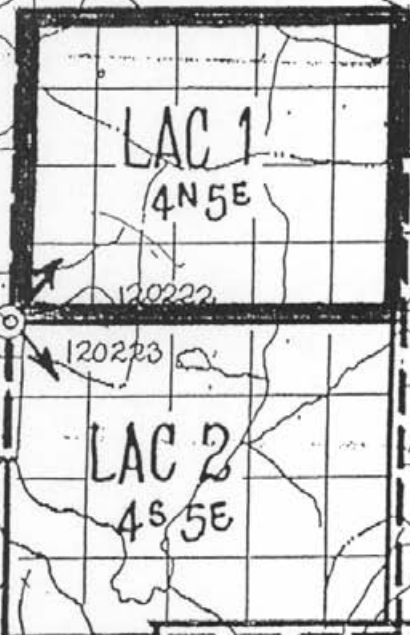
1110 9 MAR 23 '90 14:33 GOV'T AGENT SMITHERS 847-7232.



LAKE # 1

LAKE # 2

Philip  
Lakes



LAC 3  
6N3W

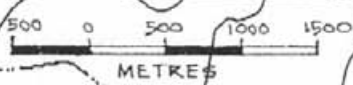
LAC 2  
4S5E

LAC 4  
2S6W

FRED 2/  
HH 3

LATITUDE  
55°04'00"

LONGITUDE  
123°49'38"



LAC CLAIMS	
MT. MILLIGAN AREA	
CLAIM MAP	
OMINECA M.D. N.T.S.93 0/4W	
Date: Feb. 1991	1:50,000
D.L.COOKE & ASST.LTD.	Fig. 2

### PROPERTY AND OWNERSHIP

The Lac 1 - 4 mineral claims are owned by D.L. Cooke, 10667 Arbutus Wynd, Surrey, B.C. The pertinent claim data is as follows:

	<u>Units</u>	<u>Record No.</u>	<u>Due Date</u>
Lac 1	20	11722	March 28, 1991
Lac 2	20	11723	March 28, 1991
Lac 3	18	11724	March 27, 1991
Lac 4	12	11725	March 27, 1991

### REGIONAL GEOLOGY AND MINERALIZATION

Mt. Milligan occurs roughly at the core of an area of porphyry copper-gold mineralization which runs northwesterly from Carp Lake to the Nation River in the Omineca Mining Division of B.C. This area is part of the Quesnel Trough of Upper Triassic rocks, which extend northwesterly from the U.S. border through B.C. to the Yukon.

The Upper Triassic rocks in the Mt. Milligan area belong to the Takla Group and consist mainly of andesitic and basaltic flows and pyroclastics. Minor amounts of black argillites have been noted locally. Older metamorphic rocks of the Slide Mountain and Cache Creek Groups occur to the east of the Takla rocks. The Takla volcanic rocks are intruded by calc-alkaline and alkaline plutons of Upper Triassic to Cretaceous ages.

The geology of the Mt. Milligan area is mainly obscured by glacial drift. The Mt. Milligan porphyry copper-gold deposit which is currently being developed by Placer Dome Inc. contains 385 million tons of probable ore with a grade of 0.22% copper and 0.016 ounce gold per ton. The mineralization consists of pyrite, chalcopyrite and free gold within Takla volcanic rocks and in coeval alkaline intrusions (monzonite, diorite, etc.) of



Triassic age. The sulphides occur as disseminations and stockworks in both intrusive and volcanic host rocks.

The intrusions are characterized by abundant disseminations of magnetite, which make them detectable by airborne and ground magnetic surveys. Sulphides are concentrated in the intrusive margins and adjacent volcanic rocks and may be traced under the glacial cover by induced polarization methods.

In addition to the disseminated and stockwork habit of sulphide mineralization, there are fault-controlled gold veins which occur peripheral to the porphyry mineralization. The veins contain quartz, carbonate, pyrite, chalcopyrite and gold which in some cases is of economic interest.

#### **PROPERTY GEOLOGY AND MINERALIZATION**

The Lac claims lie over the eastern portion of a small boomerang-shaped aeromagnetic anomaly which lies to the southeast of the larger Mt. Milligan aeromagnetic anomaly. These claims have potential for the occurrence of mineralized satellitic alkaline intrusions similar to the Mt. Milligan intrusions. The property, however, is extensively covered by glacial drift material of unknown thickness. Some rock exposures occur in the northwestern parts of the claim group (Figure 3) which suggests that the area is underlain by sheared and altered Takla volcanic flows and fragmentals. Minor amounts of black, pyritic argillites occur in the southwest corner of the property.

Various amounts of pyrite occur in the sheared volcanic rocks. Alteration consists of silicification and carbonatization. In the northwest part of the property, carbonatized rocks contain quartz, carbonate and pyrite veinlets. The silica and carbonate alteration zone is anomalous in arsenic and copper. Although the dimensions are not known, it appears to be trending to the northeast and appears to be fault-controlled.

## GEOCHEMISTRY

### Sample Preparation and Analysis

Soil samples were taken with a shovel from depths of 15-30 centimetres along the major and minor logging roads at 100 metre intervals. Soil samples were placed in numbered Kraft sample bags and shipped to Min-En Laboratories in North Vancouver, B.C. for analysis. Rock samples and stream silt samples were occasionally collected in the course of soil sampling, prospecting, mapping, etc. The sample location sites and numbers are indicated on Figure 3.

The soil samples were dried at approximately 60°C and then sieved to minus 80 mesh. A 1.0 gram sample was then digested with HNO<sub>3</sub> and HClO<sub>4</sub> mixture. These samples were then diluted to standard volume after cooling, and the solutions analyzed for 30 elements by computer operated Jarrell Ash 9000 Induction Coupled Plasma (ICP) Analyzer. Gold was determined on separate solutions by atomic absorption spectrophotometry. Rock samples were crushed and treated in a similar geochemical fashion.

### Discussion of Results

The analytical results are presented in Appendix III. Significant values for copper, gold and arsenic in rocks and soils are plotted on Figure 4. Although there were some high values for silver and copper, there seems to be no clustering of these values together. Because of the small sample population, statistical treatment of the data was not attempted. By inspection and experience, the following values were assumed to be anomalous:

gold	:	+ 10 ppb
silver	:	+ 1.0 ppm
arsenic	:	+ 20 ppm
copper	:	+ 100 ppm

It can be seen from the plot of arsenic in soils and arsenic and copper in rocks that the larger number of the anomalous values occur within the northwest area. This is also the area of strong silica and carbonate alteration in rocks. The apparent irregular distribution of anomalous gold in soils may be due to the irregular distribution and variable depth of the glacial gravel, sand and clay cover which may be masking the underlying bedrock source. Alternatively, this distribution may be the result of glacial transport of mineralized material from the west.

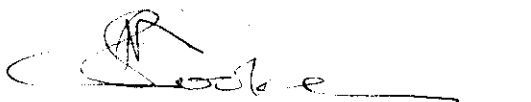
## CONCLUSIONS AND RECOMMENDATIONS

The reconnaissance prospecting, geological mapping, soil and rock geochemistry of the Lac claims indicated the presence of anomalous and altered zones permissive for the occurrence of porphyry copper-gold as well as fault-controlled gold-quartz mineralization.

The extensive nature of glacial drift cover in the low-lying areas is probably masking most of the geochemical response from the underlying bedrock. Geophysical methods will be required to further evaluate the property. Additional soil sampling, rock geochemistry and geological mapping are recommended for the more elevated parts of the property.

A program of magnetometer, VLF-EM and IP surveys is recommended for further evaluation of the Lac claims especially in the extensively covered areas.

Report by:  
**D.L. COOKE AND ASSOCIATES LTD.**



David L. Cooke, Ph.D., P.Eng.  
January 29, 1991



## REFERENCES

- Cooke, D.L., 1989: Summary Report, Lac 1-4 Mineral Claims, Mt. Milligan Area, 3 pp.
- Geophysical Paper, 1961: Philip Lakes, British Columbia, Map 1573G, Geological Survey Canada.
- Geophysical Paper, 1961: Wittsichica Creek, British Columbia, Map 1584G, Geological Survey Canada.
- Muller, J.E., 1961: Geology, Pine Pass, British Columbia, Map 11-1961, Geological Survey Canada.
- Rice, H.M.A., 1948: Smithers - Fort St. James, British Columbia, Map 971A; 1 inch to 8 miles.

APPENDIX I  
**STATEMENT OF EXPENDITURES**  
**LAC 1-4 MINERAL CLAIMS**  
**OMINECA M.D.**

**Salaries**

D.L. Cooke, Geologist, Jun 2-8, 1990 7 days at \$350/day	\$ 2,450.00	
M.A. Cooke, Field Assistant, Jun 2-8, 1990 7 days at \$125 per day	<u>875.00</u>	\$ 3,325.00

**Transportation**

4x4 rental, Jun 2-8, 1990 7 days at \$50 per day	350.00	
1,920 km at 15¢ per km	288.00	
Gasoline, etc.	<u>105.00</u>	743.00

**Geochemistry**

Analyses - Min-En Laboratories Inc.		2,082.00
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**Domicile**

Room and board 14 man days at \$50 per day		700.00
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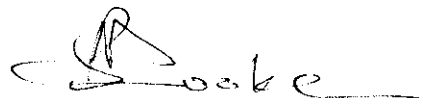
**Report etc.**

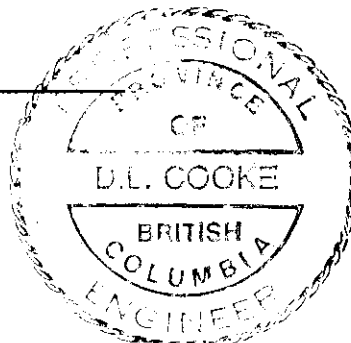
Report by D.L. Cooke 2 days at \$350 per day	700.00	
Drafting and typing	<u>175.00</u>	<u>875.00</u>

**Total Expenditures**

\$ 7,725.00

Statement Prepared by:  
**D.L. COOKE AND ASSOCIATES LTD.**

  
 \_\_\_\_\_  
 David L. Cooke, Ph.D., P.Eng.  
 January 29, 1991

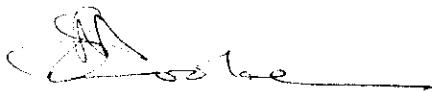


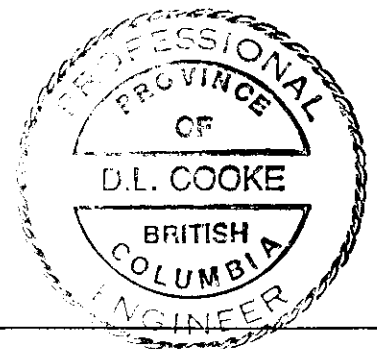
## APPENDIX II

### STATEMENT OF QUALIFICATIONS

I, DAVID LAWRENCE COOKE, of the Municipality of Surrey in the Province of British Columbia, hereby certify:

1. That I am a Consulting Geologist, residing at 10667 Arbutus Wynd, Surrey, B.C., V3R 0B5, with a business office at 811 - 675 West Hastings Street, Vancouver, B.C., V6B 1N2.
2. That I graduated with a B.Sc. degree in Geology from the University of New Brunswick in 1959, and with a M.A. degree and Ph.D. degree in Geology from the University of Toronto in 1961 and 1966 respectively.
3. That I have practised my profession as an exploration geologist from 1959 to the present time in Canada, the U.S.A., Mexico, the Caribbean and South America.
4. That I am a Registered Member of the Association of Professional Engineers of the Province of British Columbia.
5. That I personally performed the exploration work on the Lac 1-4 claims described herein.
6. And that I am the author of this report on the Lac 1-4 mineral claims, dated January 29, 1991.

  
DAVID L. COOKE, PH.D., P.ENG.  
January 29, 1991



APPENDIX III

ANALYTICAL RESULTS



COMP: CROSS LAKE MINERALS/D.L.COOKE  
 PROJ: LAC  
 ATTN: R.S.MIDDLETON/D.L.COOKE

MIN-EN LABS — ICP REPORT  
 705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2  
 (604)980-5814 OR (604)988-4524

FILE NO: 0V-0711-SJ1+2  
 DATE: 90/06/28  
 \* SOIL \* (ACT:F31)

SAMPLE NUMBER	AG PPM	AL PPM	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA PPM	CD PPM	CO PPM	CU PPM	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO PPM	NA PPM	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	U PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM	AU PPM
L90-1S	1.0	22690	1	4	117	1.0	6	10020	.8	15	119-37560	1170	16	9040	726	1	210	40	600	20	1	18	1	1	111.2	60	2	1	2	49	3	
L90-2S	.6	17250	1	4	87	.7	6	9050	.1	14	62-30430	1170	13	8570	506	1	200	23	870	16	1	20	1	1	92.6	53	1	1	1	39	2	
L90-3S	.9	20070	1	5	81	.8	8	8900	.1	16	54-33610	1140	17	8820	384	1	230	22	1350	14	1	29	1	1	106.0	63	2	1	2	36	2	
L90-4S	.7	16920	1	4	78	.7	7	8830	.3	13	40-27910	1190	13	7910	463	1	200	17	1150	14	1	23	1	1	89.8	49	2	1	1	36	1	
L90-5S	1.1	16720	1	4	87	.7	7	9960	.1	14	45-31430	1400	12	8240	493	1	230	21	1220	16	1	28	2	4	98.0	49	4	1	2	42	2	
L90-6S	.8	14340	1	5	68	.7	6	9860	.1	14	49-35890	1110	11	7100	496	1	230	21	1050	18	1	23	1	1	123.1	45	3	1	3	49	1	
L90-7S	.7	18510	1	4	99	.6	5	10730	.1	12	51-29060	1220	12	8030	492	1	230	20	1080	14	1	21	1	1	94.4	47	2	1	1	36	2	
L90-8S	.8	15750	1	4	72	.8	7	10060	.1	14	38-40630	1040	11	6950	453	1	230	14	1100	16	1	23	1	1	151.7	41	2	3	3	52	3	
L90-9S	.9	23210	1	5	152	1.0	6	9760	.2	15	99-35360	1900	16	9640	742	1	200	40	800	15	1	20	1	1	100.1	57	2	1	2	47	2	
L90-10S	1.0	20870	1	5	115	.8	8	10100	.1	15	52-36410	1400	17	9930	579	1	240	22	1290	16	1	29	1	1	115.0	58	2	1	2	46	1	
L90-11S	.7	15270	1	3	91	.6	7	8850	.1	12	33-28680	1140	11	7770	478	1	220	16	1160	17	1	27	1	1	94.0	47	2	1	1	37	6	
L90-12S	.6	18030	1	4	104	.8	6	8880	.1	13	65-31220	1680	15	9090	527	1	280	25	1110	17	1	24	1	1	91.8	50	1	1	1	38	6	
L90-13S	.6	16130	1	5	85	.6	7	9060	.3	12	44-28030	1130	13	8310	464	1	250	17	1110	16	1	24	1	1	88.6	44	1	1	1	36	1	
L90-14S	1.2	17710	1	5	122	.7	9	9870	.1	14	26-31080	1330	12	7750	552	1	200	17	1470	20	1	30	2	3	100.4	65	4	1	2	43	5	
L90-15S	1.2	17600	1	4	109	.8	7	8860	.3	14	38-34000	980	12	8190	615	1	180	22	950	16	1	24	2	6	117.1	50	5	1	2	48	9	
L90-16S	.4	13810	1	3	63	.6	5	8790	.1	11	30-25290	900	12	5600	333	1	160	13	720	13	1	21	1	1	85.0	38	1	1	1	31	4	
L90-17S	.6	15810	1	4	73	.5	5	7830	.1	10	36-24260	850	13	8000	413	1	170	14	770	16	1	21	1	1	78.7	40	1	1	1	32	2	
L90-18S	.7	16480	1	3	90	.5	7	8290	.1	11	26-24370	920	15	7600	357	1	190	15	700	15	1	22	1	1	82.1	54	2	1	1	33	1	
L90-19S	.9	24970	1	5	139	1.0	6	10360	.1	16	81-38180	1690	19	10050	774	1	230	30	1000	19	1	23	1	1	109.3	68	3	1	2	50	1	
L90-20S	1.0	17470	1	4	107	.7	7	10660	.2	13	44-29840	1290	15	8500	421	1	220	22	1180	17	1	26	1	1	94.3	54	2	1	1	41	1	
L90-21S	.9	25400	1	5	142	1.0	6	10550	.1	16	67-35670	1520	19	8990	585	1	180	34	900	21	1	25	1	1	102.8	58	3	1	2	46	4	
L90-22S	.9	26220	1	5	148	1.1	6	8790	.1	16	87-37330	1750	20	10340	811	1	190	32	730	19	1	24	1	1	107.8	63	4	1	2	50	1	
L90-23S	.8	15170	1	5	84	.5	11	8590	.1	11	24-24380	2710	14	7670	323	1	2300	15	990	23	1	25	1	1	84.1	45	2	2	2	35	3	
L90-24S	.7	15750	1	3	67	.5	6	7870	.2	10	29-24670	880	14	7540	268	1	170	12	890	12	1	22	1	1	79.3	51	1	1	1	31	1	
L90-25S	.5	18540	1	3	90	.7	6	6680	.1	11	28-25720	870	17	6660	425	1	150	13	820	15	1	17	1	1	83.2	68	2	1	1	30	2	
L90-26S	.4	15490	1	3	70	.7	5	9310	.4	13	50-28470	1320	16	9080	412	1	210	20	1070	12	1	24	1	1	87.1	49	1	1	1	38	6	
L90-27S	.7	20370	1	4	84	.8	7	8300	.1	12	41-30390	1250	17	7820	331	1	200	17	1540	16	1	25	1	1	96.6	72	3	1	1	36	1	
L90-28S	.5	12050	1	2	64	.3	5	6090	.1	7	13-19130	800	10	3720	210	1	120	6	610	16	1	16	1	1	66.8	50	2	1	1	22	154	
L90-29S	.5	16810	1	3	59	.5	5	6730	.1	11	27-25410	850	16	7490	284	1	150	15	1140	13	1	17	1	1	81.3	48	1	1	1	30	3	
L90-30S	.4	17320	1	2	63	.6	6	4670	.1	11	20-25180	550	14	4290	211	1	120	8	1660	13	1	13	1	1	74.1	78	1	1	1	29	1	
L90-31S	.5	19940	1	4	80	.7	6	5700	.1	12	29-29270	740	18	5850	235	1	130	19	1370	19	1	16	1	1	80.8	84	1	1	1	30	1	
L90-32S	.2	15160	1	3	73	.5	5	6350	.1	11	36-26670	860	15	7490	350	1	130	14	1250	14	1	15	1	1	76.9	60	1	1	1	28	2	
L90-33S	.7	20250	1	3	77	.7	7	7290	.1	13	36-29380	720	13	8580	311	1	150	19	1280	15	1	19	1	1	86.6	50	1	1	2	40	2	
L90-34S	.4	13580	1	2	67	.4	5	7200	.1	9	24-21680	540	12	6420	237	1	140	15	850	14	1	16	1	1	71.3	40	1	1	1	27	8	
L90-35S	.4	16900	1	3	96	.6	7	7480	.1	13	34-31420	720	14	6600	339	1	180	19	910	18	1	19	1	1	102.9	42	1	1	1	38	6	
L90-36S	.7	14680	1	3	71	.5	6	7130	.2	10	22-22990	870	13	6420	326	1	150	14	660	16	1	17	1	1	74.8	48	1	1	1	31	18	
L90-37S	.6	18490	1	3	83	.8	7	7110	.1	12	26-27010	690	14	6320	383	1	140	17	570	17	1	18	1	1	85.8	54	1	1	1	35	2	
L90-38S	.7	20370	1	4	120	.8	7	9400	.1	14	40-33110	810	14	7310	439	1	180	20	660	19	1	22	1	1	98.5	45	1	1	2	41	2	
L90-39S	.8	16880	1	3	127	.6	8	8110	.2	13	34-27380	740	13	8320	567	1	140	18	1130	22	1	21	1	1	86.1	63	1	1	2	35	1	
L90-40S	1.1	16910	1	4	142	.8	7	11620	.7	14	38-33030	920	11	9000	1551	1	230	22	910	23	1	33	1	1	104.5	42	1	1	2	47	2	
L90-41S	1.2	17340	1	4	90	.9	8	11470	.1	17	52-37970	780	11	9360	498	1	190	20	830	22	1	30	1	1	106.3	48	2	1	2	40	3	
L90-42S	1.1	17760	1	4	92	1.0	7	12070	.1	14	64-32260	700	15	7360	698	1	170	22	910	24	1	30	1	1	94.1	60	1	1	2	42	2	
L90-43S	.5	14530	1	3	72	.4	7	7790	.1	11	22-23550	620	13	7110	408	1	160	13	460	15	1	16	1	1	82.1	43	1	1	1	29	2	
L90-44S	.8	17400	1	3	102	.7	6	7770	.2	12	27-26410	680	12	8130	539	1	160	18	660	18	1	19	1	1	84.2	48	1	1	1	34	2	
L90-45S	.1	12150	1	2	55	.3	5	6900	.1	7	15-16550	460	9	5610	199	1	140	8	370	14	1	13	1	1	61.9	28	1	1	1	20	1	
L90-46S	.9	15290	1	3	72	.6	8	7440	.1	12	22-28130	730	11	6530	358	1	130	11	1050	24	1	20	1	1	91.0	55	1	1	1	32	1	
L90-47S	.8	15680	1	3	93	.7	7	7050	.2	11	25-32610	530	13	5580	236	1	130	13	1020	15	1	17	1	1	103.9	40	1	1	1	32	2	
L90-48S	1.7	24230	1	5	82	1.3	8	6440	.1	20	46-49150	680	17	6130	869	1	120	15	2590	25	1	19	1	1	139.5	69	2	1	3	54	125	
L90-49S	.4	20510	1	4	75	.6	7	6520	.1	10	34-24690	460	14	5250	210	1	140	11	550	16	1	13	1	1	87.8	28	1	1	1	31	4	

COMP: CROSS LAKE MINERALS/D.L.COOKE  
 PROJ: LAC  
 ATTN: R.S.MIDDLETON/D.L.COOKE

MIN-EN LABS — ICP REPORT  
 705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2  
 (604)980-5814 OR (604)988-4524

FILE NO: 0V-0711-SJ3+4  
 DATE: 90/06/28  
 \* SOIL \* (ACT: F31)

SAMPLE NUMBER	AG PPM	AL PPM	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA PPM	CD PPM	CO PPM	CU PPM	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO PPM	NA PPM	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	U PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM	AU PPM
L90-61S	.2	10810	67	4	89	1.4	2	7220	.5	18	67-65960	1070	9	3770	1143	1	100	3	1570	31	6	17	1	1	53.3	109	1	3	1	3	2	
L90-62S	.3	13720	24	3	74	1.1	3	3920	.1	15	52-44820	1000	9	3090	657	1	90	9	1390	26	2	12	1	1	67.0	78	1	1	1	13	17	
L90-63S	.4	16150	46	3	76	1.0	3	3930	.1	13	45-40050	1380	16	3150	576	1	80	7	1090	28	2	10	1	1	74.5	105	1	1	1	20	3	
L90-64S	1.1	12030	1	2	74	.5	6	4660	.1	9	21-25150	890	9	3010	532	1	90	6	790	27	1	13	1	1	72.0	86	1	1	1	24	2	
L90-65S	.7	16100	1	3	40	.7	4	7460	.1	10	22-29700	810	13	3310	276	1	230	9	2500	20	1	23	1	1	83.9	46	1	1	1	25	1	
L90-66S	.7	17000	1	2	62	.7	5	4350	.1	10	30-29440	610	16	4290	273	1	100	12	1670	18	1	12	1	1	76.6	53	1	1	1	25	2	
L90-67S	.8	18710	1	3	101	.8	6	4790	.1	11	31-34560	860	23	5370	293	1	120	11	1510	20	1	14	1	1	79.5	67	1	1	1	25	6	
L90-68S	.7	19130	1	6	88	.9	5	6120	.1	13	39-40810	1120	24	5890	277	1	130	12	2100	21	1	19	1	1	100.4	76	1	1	1	34	15	
L90-69S	.4	17170	1	3	77	.8	5	4870	.1	12	30-34580	730	25	5330	242	1	110	9	500	18	1	14	1	1	81.6	79	1	1	1	24	3	
L90-70S	.7	16040	1	3	59	.7	6	6820	.1	13	42-31240	700	11	5870	329	1	150	15	990	19	1	16	1	1	92.3	32	1	1	1	30	18	
L90-71S	.9	19960	1	3	88	.6	7	6510	.1	11	26-28810	1010	18	6170	252	1	180	14	740	19	1	17	1	1	90.5	49	1	1	1	31	16	
L90-72S	.8	16810	1	3	72	.7	6	6260	.1	12	32-29210	740	13	5900	290	1	150	17	1450	21	1	16	1	1	91.6	41	1	1	1	35	1	
L90-73S	.9	15650	1	3	87	.6	6	6860	.5	9	35-24160	1000	14	6770	355	1	170	15	1060	19	1	18	1	1	75.5	81	1	1	1	33	1	
L90-74S	.9	21570	1	3	96	.8	6	6220	.1	13	45-31830	1090	16	8100	707	1	160	20	1030	18	1	14	1	1	95.3	75	1	1	1	42	2	
L90-75S	.6	15330	1	3	68	.5	5	6690	.1	9	23-23990	680	13	5600	241	1	160	11	1370	18	1	16	1	1	75.8	53	1	1	1	29	11	
L90-76S	.9	14620	1	2	97	.5	6	6740	.1	10	15-22870	610	11	3640	461	1	150	9	1830	18	1	19	1	1	75.0	64	1	1	1	27	4	
L90-77S	1.1	13810	5	3	58	.7	7	8580	.1	11	35-29610	810	13	7080	311	1	200	14	710	25	1	20	1	1	93.7	38	2	1	2	41	7	
L90-78S	1.2	24070	1	4	99	.9	7	8970	.1	14	43-33830	860	18	6870	265	1	170	22	1290	21	1	21	1	1	103.9	46	2	1	2	45	2	
L90-79S	1.0	22040	1	4	66	1.0	7	6830	.1	14	30-44800	710	22	6040	287	1	120	13	3720	25	1	21	1	1	134.0	80	2	1	3	50	10	
L90-80S	.9	17940	1	3	66	.6	6	6700	.1	11	27-26650	600	20	6200	326	1	130	16	600	21	1	15	1	1	90.3	46	1	1	1	34	1	
L90-81S	1.0	19480	1	4	86	1.0	7	6750	.1	15	28-42940	710	22	5470	293	1	130	7	870	21	1	15	1	1	130.9	44	2	1	2	36	1	
L90-82S	.8	19230	1	4	50	.7	7	4820	.1	11	23-36370	600	22	5180	281	1	130	9	1270	16	1	12	1	1	115.1	61	2	1	1	32	2	
L90-83S	.7	16170	1	3	59	.6	7	6240	.1	10	25-26500	470	13	6480	230	1	140	12	520	19	1	17	1	1	84.9	37	1	1	1	33	7	
L90-84S	.7	15100	1	3	59	.5	5	7390	.1	9	36-22250	480	13	6790	249	1	170	15	590	16	1	18	1	1	76.6	29	1	1	1	30	2	
L90-85S	1.0	13390	1	3	64	.4	7	8790	.1	9	30-22280	610	11	6730	303	1	200	13	1010	18	1	23	1	1	72.5	29	1	1	1	33	1	
L90-86S	1.1	11200	1	3	54	.4	8	8790	.1	10	25-22510	480	9	6140	343	1	200	13	960	20	1	25	1	1	75.1	26	1	1	1	33	2	
L90-87S	1.2	13840	1	4	70	.6	7	10030	.1	12	43-27970	620	11	7990	441	1	260	17	1230	18	1	25	1	1	89.0	35	2	1	1	40	2	
L90-88S	1.1	14160	1	3	75	.7	6	8620	.1	11	33-25810	510	9	6780	307	1	170	16	1120	20	1	21	1	1	88.7	28	2	1	2	38	57	
L90-89S	1.0	11340	1	2	89	.6	6	8910	.1	10	28-25990	560	8	6810	1613	3	200	18	1230	23	1	21	1	1	86.5	28	1	1	2	39	2	
L90-90S	.7	12240	1	2	43	.5	5	6620	.2	8	21-23840	410	9	5180	190	1	120	10	1000	19	1	14	1	1	75.1	25	1	1	1	27	1	
L90-91S	.3	10580	1	2	55	.5	4	7060	.3	9	27-23010	470	10	5980	341	1	200	12	930	15	1	14	1	1	72.0	25	1	1	1	28	8	
L90-92S	.4	14060	1	2	56	.6	5	5730	.1	9	24-22390	400	12	5290	206	1	150	14	670	13	1	12	1	1	68.8	37	1	1	1	27	2	
L90-93S	.8	10920	1	2	52	.5	5	7800	.2	10	25-22920	410	10	6400	350	1	190	14	1130	17	1	18	1	1	72.8	27	1	1	1	31	2	
L90-94S	1.0	17390	1	3	70	.8	7	7060	.1	12	30-34240	560	14	7790	336	1	160	17	1250	18	1	20	1	1	100.2	41	2	1	2	37	1	
L90-95S	.7	19830	1	3	82	.8	6	6410	.1	13	46-33380	860	18	8460	341	1	160	18	1200	18	1	17	1	1	94.4	49	1	1	1	37	4	
L90-96S	.7	11760	1	2	52	.6	5	7700	.3	10	33-23520	590	11	7040	308	1	190	17	900	17	1	16	1	1	76.9	29	1	1	1	34	24	
L90-97S	.5	12620	1	2	58	.7	5	6640	.1	11	24-32250	540	11	5210	244	1	140	10	1780	17	1	17	1	1	108.3	41	1	1	2	40	2	
L90-98S	.7	14050	1	3	50	.7	6	6210	.1	11	23-33640	380	12	5030	227	1	130	11	650	15	1	15	1	1	110.1	36	1	1	2	39	3	
L90-99S	.5	14880	1	2	51	.7	5	6330	.1	8	20-24960	300	11	4750	169	1	110	9	610	17	1	10	1	1	76.3	27	1	1	1	33	2	
L90-100S	.9	15710	1	2	60	.7	7	6220	.1	10	20-34230	460	12	4740	200	1	150	9	1110	17	1	16	1	1	106.3	34	1	1	2	39	1	
L90-101S	.7	13680	1	2	39	.6	5	5980	.1	9	24-29710	430	12	4870	184	1	140	10	1730	16	1	16	1	1	92.9	34	1	1	1	34	2	
L90-106S	.8	17350	1	3	121	.8	4	3430	.7	14	50-33630	1670	13	7350	1873	1	140	14	1450	30	1	11	1	1	88.8	63	1	1	2	39	1	
L90-107S	1.0	15610	13	3	85	1.0	4	12910	.2	12	83-31210	1060	19	6330	455	1	180	18	1020	25	1	38	1	1	70.9	55	1	1	1	33	2	
L90-108S	.7	21240	1	4	90	1.1	6	6810	.1	15	44-39340	1540	18	6560	355	1	150	15	2730	22	1	23	1	1	93.3	90	1	1	1	32	3	
L90-109S	.5	16970	1	3	60	.8	5	6860	.1	11	35-30450	940	15	5880	317	1	170	10	730	15	1	18	1	1	81.1	36	1	1	1	26	1	
L90-110S	.7	19480	1	3	78	.9	6	4560	.1	14	26-36430	770	17	4610	311	1	140	9	1860	22	1	13	1	1	92.8	88	1	1	1	31	1	
L90-111S	1.0	20400	1	3	83	.8	6	5040	.1	14	40-33820	870	14	6400	265	1	180	14	1440	17	1	15	1	1	97.7	68	1	1	2	39	2	
L90-112S	.6	17010	1	3	65	.9	5	5810	.1	13	52-30260	980	12	6810	351	1	170	17	1310	17	1	15	1	1	83.6	39	1	1	1	33	2	
L90-113S	.5	16560	1	3	77	.8	5	4740	.1	11	28-33670	930	19	4680	394	1	150	11	1350	19	1	13	1	1	95.5	38	1	1	1	30	1	
L90-114S	.7	18																														



COMP: CROSS LAKE MINERLAS/D.L.COOKE  
 PROJ: LAC  
 ATTN: R.S.MIDDLETON/D.L. COOKE

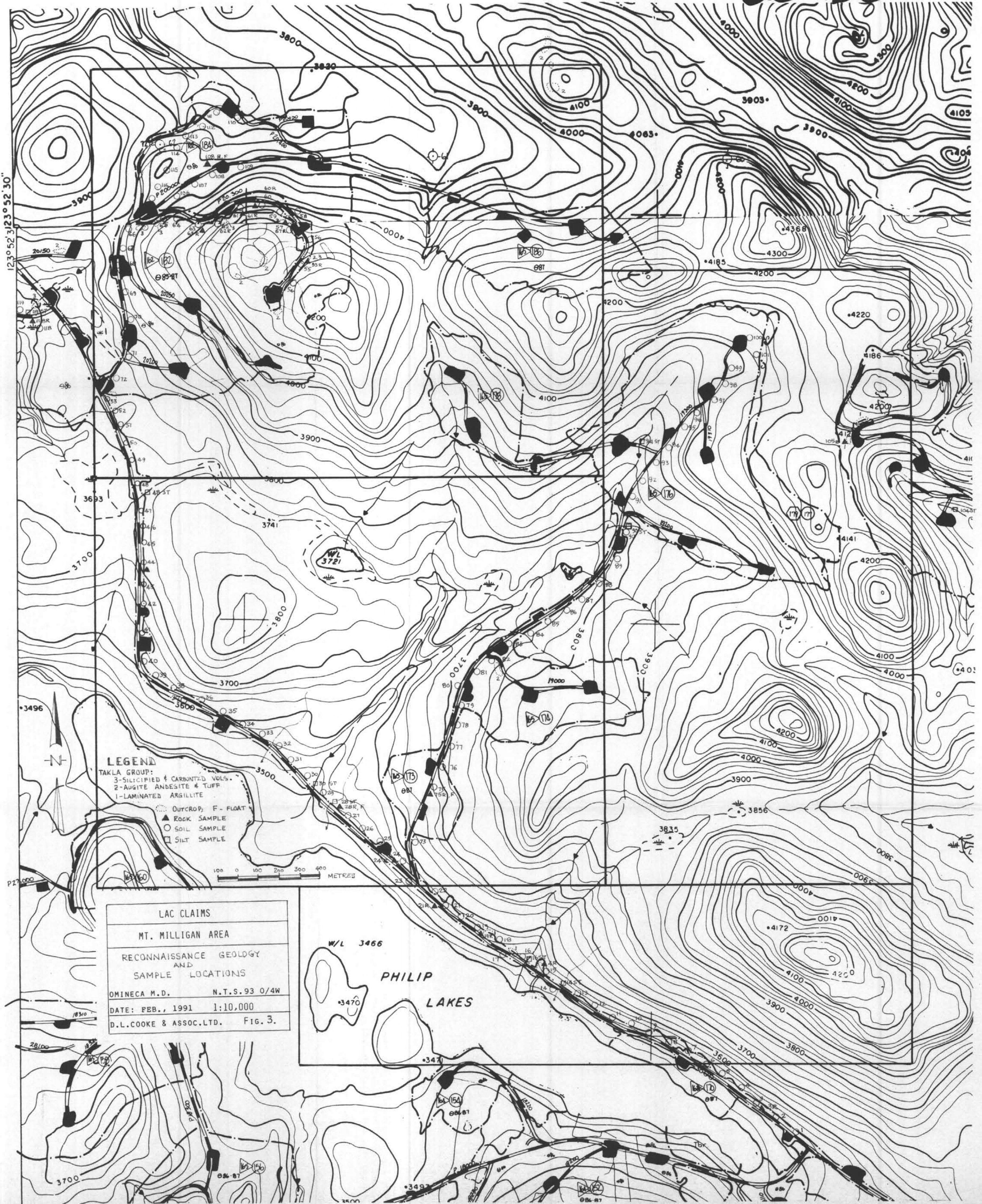
**MIN-EN LABS -- ICP REPORT**  
 705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2  
 (604)980-5814 OR (604)988-4524

FILE NO: 0V-0711-RJ1  
 DATE: 90/06/26  
 \* ROCK \* (ACT:F31)

SAMPLE NUMBER	AG PPM	AL PPM	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA PPM	CD PPM	CO PPM	CU PPM	FE PPM	K PPM	LI PPM	MG PPM	MN PPM	MO PPM	NA PPM	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	U PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM	AU PPB
L90-3R	1.9	29790	1	7	22	.7	11	25660	.1	21	238	41080	1010	32	9640	504	1	700	11	1380	19	1	12	1	1	119.8	28	3	1	3	25	4
L90-19R	.6	6200	1	1	56	.7	6	3830	.6	8	47	28550	1710	4	5400	156	1	490	1	1220	17	1	17	1	1	98.7	11	1	1	3	39	11
L90-21R	2.2	17870	1	5	47	.6	12	39330	.1	22	80	43570	460	11	13470	1110	1	180	12	1480	32	1	224	1	1	143.9	40	5	1	6	68	6
L90-24R	2.4	22970	1	5	226	.9	16	11860	1.0	26	115	70420	700	27	24830	1105	1	380	15	1480	27	1	24	1	1	256.3	71	4	1	8	85	2
L90-28R	1.6	8270	1	1	11	.4	7	17500	.1	19	274	28600	90	1	2220	317	1	70	46	1060	19	1	55	1	1	42.1	6	1	1	4	64	2
L90-55R	.9	7690	25	4	56	1.0	2	26410	1.9	16	93	37610	2730	6	6660	889	1	160	3	2600	31	6	72	1	1	43.3	56	4	1	2	25	1
L90-57R	2.3	18680	1	3	19	.4	12	30180	.1	22	133	38890	1250	15	16440	775	1	170	20	1550	18	1	83	1	1	139.4	35	4	1	8	107	2
L90-60R	.7	7370	45	6	112	1.0	2	20610	1.4	23	122	45940	4210	4	3160	914	1	200	4	2090	32	3	72	1	1	29.5	54	1	1	1	13	8
L90-61R	.3	11160	128	10	131	1.4	1	9150	.4	23	124	49160	6470	5	2660	288	1	340	6	3230	31	5	30	1	1	37.6	47	1	1	2	29	1
L90-63R	1.2	3600	45	4	36	.9	2	55110	1.9	18	155	40410	2380	1	9520	1308	2	330	11	2370	37	4	181	1	1	23.8	45	4	2	3	32	3
L90-75R	2.1	20650	42	14	243	.6	14	12880	.2	23	97	54470	3480	27	17990	546	1	200	4	2030	23	1	74	1	1	117.4	55	2	1	5	39	2
L90-102R	2.1	26640	1	7	330	1.3	10	59290	.6	31	137	62860	1720	25	33430	1439	1	540	30	1270	19	1	77	1	1	214.6	57	2	1	8	137	1
L90-105R	2.1	18880	1	4	76	.4	12	18770	.1	15	42	35160	1900	14	12730	883	1	300	10	700	20	1	41	1	1	70.0	57	3	1	5	63	2
L90-118R	.9	12140	7	6	158	.8	3	23440	.3	19	87	38020	4410	7	4140	1159	1	180	7	1720	31	1	44	1	1	32.0	60	3	1	2	16	1



20992



123° 52' 31.23" 52' 30"

**LEGEND**  
 TAKLA GROUP:  
 3-SILICIFIED & CARBONATED VOL.  
 2-AUGITE ANDESITE & TUFF  
 1-LAMINATED ARGILLITE

○ OUTCROP; F- FLOAT  
 ▲ ROCK SAMPLE  
 ○ SOIL SAMPLE  
 □ SILT SAMPLE

0 100 200 300 400 METRES

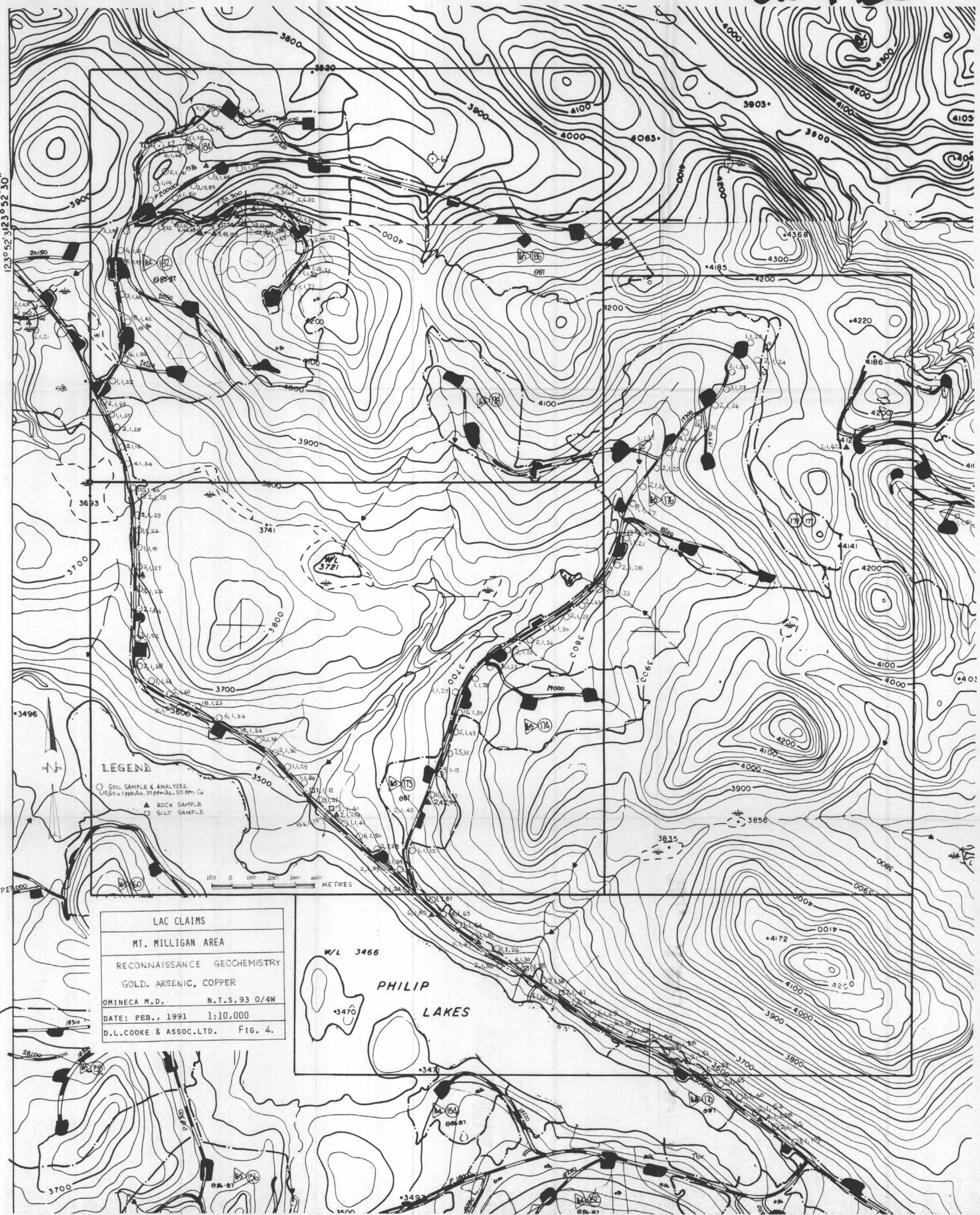
LAC CLAIMS  
 MT. MILLIGAN AREA  
 RECONNAISSANCE GEOLOGY  
 AND  
 SAMPLE LOCATIONS  
 OMINECA M.D. N.T.S. 93 0/4W  
 DATE: FEB., 1991 1:10,000  
 D.L.COKE & ASSOC.LTD. FIG. 3.

W/L 3466  
 PHILIP LAKES



20992

123° 52' 31.23" 52° 30'



**LEGEND**

- SOIL SAMPLE & ANALYSES.  
1:10,50 = 1ppb Au, 10 ppm As, 50 ppm Cu
- ▲ ROCK SAMPLE
- SILT SAMPLE

0 100 200 300 400 METRES

LAC CLAIMS	
MT. MILLIGAN AREA	
RECONNAISSANCE GEOCHEMISTRY	
GOLD, ARSENIC, COPPER	
OMINECA M.D.	N.T.S. 93 0/4W
DATE: FEB., 1991	1:10,000
D.L. COOKE & ASSOC. LTD.	FIG. 4.

W/L 3466  
PHILIP LAKES