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MINERAL EXPLORATION CONSULTANTS

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VANCOUVER, B.C.

ASSESSMENT REPORT

RECONNAISSANCE GEOCHEMISTRY AND GEOLOGY

OF THE CATO 4 CLAIM

MT. MILLIGAN AREA

OMINECA M.D.

N.T.S. 930/2W

Latitude : 55° 05' North

Longitude : 123° 27' West

LOG NO: JAN 30 RD.  
ACTION: *[Signature]*  
FILE NO:

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

21,747

Report Date: October 21, 1991

Work Done: July 24, 1990  
July 2 & 4, 1991

Claim on which work was done:

<u>Claim</u>	<u>Units</u>	<u>Record No.</u>	<u>Month of Record</u>
Cato 4	20	12388	July

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

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### SUMMARY

The Cato 4 mineral claim of 20 units was staked to cover an area of metamorphic sediments containing abundant pyrite 47 kilometres by road west of McKenzie, B.C. The regional geology in the area of the claims belong to the Wolverine Metamorphic Complex. The Wolverine Complex is made up of granitoid gneiss, schist, amphibolite and quartzite. The claims are underlain by these rocks, which in this location are permeated by abundant pyrite and limonite. Metamorphic rocks of the Slide Mountain Group occur to the northeast and the Takla terrain which hosts the Mt. Milligan porphyry copper-gold deposit lies some 25 kilometres to the west. Minor monzodiorite intrusions occur on the property, but contain only traces of pyrite.

A reconnaissance program of prospecting, mapping and soil geochemistry was done to evaluate the potential of the claim for copper and gold mineralization. Little was obtained from the soil geochemical survey which could be considered strongly anomalous for gold, or indicative of copper and gold mineralization. Assays of rock samples were also low in precious metals. Slightly elevated levels for copper and zinc were obtained in rock samples in one area.

It is concluded that the potential for porphyry copper and gold mineralization has been substantially reduced by this survey. Further geochemical work may be done over portions of the claim in the area of the anomalous copper and zinc values. Additionally, the property is prospective for the occurrence of zinc, tungsten and molybdenum replacements, because these elements occur in the adjacent area to the northeast in association with granitic intrusions.

## INTRODUCTION

The Cato 4 mineral claim covers a package of rusty, pyritic metasedimentary rocks, which were thought to have potential for hosting porphyry copper-gold and replacement lead-zinc mineralization. The first exploration traverse across the property was made by Wim Vanderpoll in late July of 1990, when minor galena and sphalerite was found in float. Additional exploration work in 1991 by D. L. Cooke and W. Vanderpoll was done to further evaluate the potential of the Cato 4 claim.

A total of \$3,665.73 was expended in this exploratory work on the Cato 4 mineral claim. This report summarizes the results of the exploration work and is being submitted for assessment credits to maintain the Cato 4 claim for two years.

## 1990/91 EXPLORATION PROGRAM

The current exploration work consisted of soil sample traverses along the secondary logging roads, and the north and western parts of the claim. Traverses were also done across the logged area at the north boundary of the property. Measurements were made with topofil chain. Prospecting, geological mapping and rock sampling were done at the same time as the soil sampling. This work was performed by Wim Vanderpoll, B.Sc., Geologist, on July 24, 1990, and by Wim Vanderpoll and David L. Cooke, Ph.D., P.Eng., Geologist, on July 2 and 4 1991.

## LOCATION AND ACCESS

The Cato 4 mineral claim is situated between McKenzie, B.C. and the Mt. Milligan area, which lies about 70 kilometres to the west (Figure 1). Access is by 47 kilometres of good gravel road west from McKenzie by way of the Philip Lakes logging main operated by Fletcher Challenge Ltd. The southern and western parts of the claim may be reached by secondary logging roads two kilometres north from the main access road (Figure 2).

The property covers an area of moderate relief which ranges from 3,600 feet to 4,600 feet elevation. Vegetation consists mainly of spruce, fir and lodgepole pine. Stands of timber have been harvested on the northwestern and southern parts of the claim.

#### PROPERTY AND OWNERSHIP

The Cato 4 claim is registered in the name of Wim Vanderpoll of Vancouver, B.C. The pertinent claim data is listed below:

<u>Claim</u>	<u>Units</u>	<u>Record Number</u>	<u>Record Date</u>
Cato 4	20	12388	July 24, 1990

#### REGIONAL GEOLOGY AND MINERALIZATION

Mt. Milligan occurs at the centre of an area of porphyry copper and 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 argillite occur locally. Older metamorphic rocks of the Slide Mountain and Wolverine Metamorphic Complex occur to the east of the Takla rocks. The Slide Mountain Group is mapped as Upper Palaeozoic in age and consists of gneissic quartz diorite, amphibolite, schist, greenstone, argillite and limestone (Tipper, 1974). The Wolverine Metamorphic Complex occurs to the east and south of the Slide Mountain Group. The Wolverine rocks, which are of possible Proterozoic age, consist of granitoid gneiss, pegmatite, schist, amphibolite and quartzite (Tipper, 1974). The metamorphic rocks are intruded by Cretaceous and Tertiary granites, granodiorites and quartz diorites.

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.

Minor molybdenum, zinc and tungsten mineralization is reported in association with the younger intrusions which cross cut the older metamorphic terrain. In addition placer gold occurs in some of the drainages of the area.

## PROPERTY GEOLOGY

The Cato 4 claim is underlain by a foliated package of interlayered metamorphic rocks, consisting of quartzite, phyllite, schist, argillite and hornblendite (Figure 3). The quartzite and schists are most prevalent. In the northwest corner of the property, black carbonaceous argillite and amphibolite (hornblendite) are interlayered with the quartzite and phyllite. The general attitude of these layers is one that strikes between  $340^{\circ}$  and  $350^{\circ}$  and dips  $25^{\circ}$  to  $35^{\circ}$  to the east. These rocks are intruded by dikes of monzonite to monzodiorite composition.

Abundant limonite and pyrite occurs in the metamorphic rocks. Some silicification and quartz stockwork development is also apparent in these rusty iron-stained rocks. Two samples of such mineralized rocks returned anomalous assays of 140 and 191 ppm copper (Appendix III). Precious metal and lead values from the analyses of these samples were insignificant. It might be more than coincidence that these anomalous copper values occur in close proximity to monzodiorite dikes. However, the dikes are relatively unaltered and contain trace to one percent disseminated pyrite.

## GEOCHEMISTRY

### SAMPLE COLLECTION AND ANALYSIS

Soil samples were taken with a shovel from depths of 15-30 centimetres on lines and along the secondary logging roads at 50 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 were collected where outcrop and/or float contained abundant pyrite and limonite. The sample location sites and numbers are indicated on Figure 3.

The soil samples were dried at approximately  $60^{\circ}\text{C}$  and then sieved to minus 80 mesh. A 1.0 gram sample was then digested with  $\text{HNO}_3$  and  $\text{HClO}_4$  mixture. These samples were then diluted to standard volume after cooling, and the solution 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 analyzed by Cominco Exploration Research Laboratory in Vancouver, B.C. These samples were pulverized and treated to aqua regia decomposition, prior to determination of six elements by atomic absorption spectrophotometry (Appendix III), using a 5 gram sample.

## DISCUSSION OF RESULTS

The analytical results are presented in Appendix III. 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
lead	:	+ 50 ppm
zinc	:	+ 200 ppm

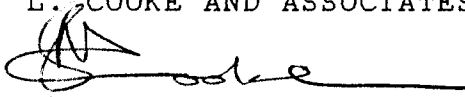
Although there is no obvious pronounced clustering of any anomalous element, a random scattering of copper, zinc and silver anomalies are evident for the soil samples. If the analyses of the rock samples are compared with the soils, it becomes apparent that a few copper and zinc anomalies occur in the same area (Soil samples #72, 73 and 79; and rock samples #78R, 79R and 80R).

## CONCLUSIONS AND RECOMMENDATIONS

The reconnaissance geochemical and prospecting program did not indicate any prominent areas of copper or gold mineralization. However, the soil and rock geochemistry indicated weakly anomalous levels for copper and zinc near the north-western boundary of the property. These anomalies occur within a north-northwest trending zone of rusty, pyritic phyllites, quartzites and argillites, which are intruded by monzonite and monzodiorite dikes.

Further evaluation of the anomalous area for its copper and zinc potential should consist of detailed geological mapping and soil geochemical sampling. This may be accomplished by running east-west lines over the area to the north and south of the known anomalous areas.

Report by  
D. L. COOKE AND ASSOCIATES LTD.

  
-----  
David L. Cooke, Ph.D., P.Eng.  
October 21, 1991



REFERENCES

1. Geophysical Paper, 1961: Tudyah Lake, British Columbia.  
Map 1563G, Geological Survey of Canada.
2. Muller, J. E., 1961: Geology, Pine Pass, British Columbia,  
Map 11-1961, Geological Survey of Canada.
3. Tipper, H. W., et al, 1974: Parsnip River, British  
Columbia, Map 1424A, Geological Survey of Canada.



TABLE I  
DESCRIPTION OF SAMPLES (1991)  
CATO 4 CLAIM

SOIL SAMPLES

Soil samples were taken with a shovel from depths of 8 to 12 inches (15 - 30 cm). Generally, sample material consisted of good red brown to medium brown soil. Occasionally, in low-lying areas, the sampled material consisted of a mixture of soil, grey sandy clay and black organic matter.

ROCK SAMPLES

<u>Sample Number</u>	<u>Description</u>	<u>Width</u>
C91 - 3R	Sub-outcrop of skarny, black graphitic schist.	Grab
C91 - 6R	Amphibolite with abundant calcite, pyrite, pyrrhotite patches. Angular float.	Grab
C91 - 12R	Rusty quartz biotite schist with limey skarn bands.	Grab
C91 - 6AR	Amphibolite rubble, with quartz, pyrrhotite and traces of chalcopyrite and sphalerite.	Grab
C91 - 76R	Rusty laminated quartz-carbonate rock with 1 - 3% pyrite along bedding planes.	Grab
C91 - 77R	Angular rubble of monzodiorite with minor disseminated pyrite.	Grab
C91 - 78R	Limonite stockwork in rusty quartzite.	2 metres
C91 - 79R	Rusty sericite schist with 5 - 10% disseminated pyrite.	Grab
C91 - 80R	Rusty, silicified argillite with vuggy yellow sulphurous seams.	Grab
C91 - 81R	Rubble of pinkish monzonite plus trace to 1% disseminated pyrite.	Grab

APPENDIX I

1990 - 1991 EXPENDITURES - JULY 21, 1991

CATO 4 MINERAL CLAIM

SALARIES - GEOLOGISTS

D. L. Cooke, July 2 @ 4/91, 2 days @ \$350 ..	\$700.00	
W.Vanderpoll, July 2 @ 4/91, 2 days @ \$300 ..	600.00	
W.Vanderpoll, July 24/90, 1 day @ \$300 ..	<u>300.00</u>	\$1,600.00

GEOCHEMISTRY

Analyses: 62 Soil & Silt samples, @ \$12/ea...	\$744.00	
8 Rock samples @ \$14.50/ea .....	116.00	
Materials: Sample Bags, flagging, etc. ....	<u>30.00</u>	890.00

DOMICILE

Room and Board: 5 man days @ \$50 ea .....	\$250.00	
Equipment Rental: 2 days @ \$30/day .....	<u>90.00</u>	340.00

TRANSPORTATION

Truck Rental: 3 days @ \$50/day .....	\$150.00	
Gasoline, etc. (35% of \$115.21) .....	40.33	
Mileage: (35% of 2077 km) 727 km @ 20c/km....	<u>145.40</u>	335.73

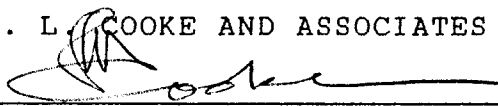
REPORT

D. L. Cooke, Geologist: 1 day @ \$350/day ....	350.00	
Typing and Drafting .....	<u>150.00</u>	<u>500.00</u>

TOTAL EXPENDITURES \$3,665.73

PREPARED BY:

D. L. COOKE AND ASSOCIATES LTD.

  
David L. Cooke, Ph.D., P.Eng.  
October 21, 1991



D. L. COOKE AND ASSOCIATES LTD.

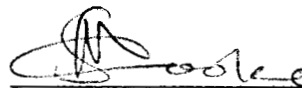
**D. L. COOKE AND ASSOCIATES LTD.**  
MINERAL EXPLORATION CONSULTANTS

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 M.A. and Ph.D. degrees 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 Cato 4 claim described herein.
6. And that I am the author of this report on the Cato 4 mineral claim, dated October 21, 1991.



DAVID L. COOKE, PH.D., P.ENG.

October 21, 1991



APPENDIX III

ANALYTICAL RESULTS

CU AU PORPHYRY AGG-WD

CATO

JOB V 91-0310R

REPORT DATE 21 OCT 1991

LAB NO	FIELD NUMBER	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Au PPB	WT Au GRAM	Mo PPM	H PPM
R9106051	C91-3R	35	132	191	.5	<10	5	<2	
R9106052	C91-6R	121	10	72	.5	<10	5	3	
R9106053	C91-12R	170	<4	73	<.4	<10	5	42	
R9106054	C91-13R	1360	<4	E44300	1.6	<10	5	2	
R9106055	C91-14R	29	<4	5300	<.4	<10	5	90	
R9106056	C91-15R	170	23	1250	.6	<10	5	14	
R9106057	C91-16R	2380	<4	212	.5	<10	5	10	
R9106058	C91-20R	118	<4	50	<.4	<10	5	148	
R9106059	C91-21R	3030	15	213	4	<10	5	218	
R9106060	C91-30R	85	7	55	.6	<10	5	3	
R9106096	C91-8R	593	<4	45	.5	<10	5	6	
R9106097	C91-10R	8	6	32	<.4	<10	5	<2	
R9106098	C91-18R	45	8	46	<.4	<10	5	20	
R9106099	C91-22R	840	30	125	.7	<10	5	790	
R9106100	C91-23R	<1	<4	35	<.4	<10	5	3	
R9106101	C91-6AR	88	9	26	<.4	<10	5	2	
R9106102	C91-76R	78	<4	80	<.4	<10	5	7	
R9106103	C91-78R	140	<4	85	.9	<10	5	2	
R9106104	C91-79R	96	<4	68	<.4	<10	5	2	
R9106105	C91-80R	191	20	68	.8	<10	5	11	
R9106106	C91-81R	29	14	135	<.4	<10	5	<2	
R9106107	C91-77R	36	<4	32	.7	<10	5	34	
R9106108	C91-122R	68	73	17	.6	<10	5	7	

I=INSUFFICIENT SAMPLE X=SMALL SAMPLE E=EXCEEDS CALIBRATION C=BEING CHECKED R=REVISED  
 IF REQUESTED ANALYSES ARE NOT SHOWN RESULTS ARE TO FOLLOW

ANALYTICAL METHODS

- CU AQUA REGIA DECOMPOSITION / AAS
- Pb AQUA REGIA DECOMPOSITION / AAS
- Zn AQUA REGIA DECOMPOSITION / AAS
- Ag AQUA REGIA DECOMPOSITION / AAS
- Au AQUA REGIA DECOMPOSITION / SOLVENT EXTRACTION / AAS
- WT Au THE WEIGHT OF SAMPLE TAKEN TO ANALYSE FOR GOLD (GEOCHEM)
- Mo HNO3 - HClO4 DECOMPOSITION / AAS
- H PYROSULPHATE FUSION / COLORIMETRIC

COMP: D.L. COOKE & ASSOCIATES LTD.  
 PROJ: CATO  
 ATTN: DAVID 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: 1V-0866-SJ1+2  
 DATE: 91/08/27  
 \* 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	TI PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM	AU-WET PPB
C91-1S	2.3	20190	6	1	263	.1	7	7000	.1	14	38	31850	2950	37	9410	319	1	190	30	520	13	1	20	1	1524	80.2	109	3	1	3	47	5
C91-2S	1.0	30640	5	1	234	.1	6	4970	.1	22	38	41600	2410	41	11390	382	1	120	50	1050	10	1	13	1	1685	99.4	183	4	1	4	68	10
C91-3S	.4	13560	3	1	109	.1	1	1990	.1	7	50	26620	810	16	2410	120	1	40	31	1370	12	1	37	1	594	114.7	187	2	1	2	32	5
C91-4S	1.7	23640	3	1	135	.1	8	3630	.1	13	25	41910	1700	20	6170	217	1	100	16	1700	19	1	16	1	1889	106.0	114	4	1	3	50	5
C91-5S	.7	27090	7	1	158	.1	8	4040	.1	21	40	48640	2320	41	13790	221	1	800	105	950	23	1	12	1	2069	97.7	161	4	1	7	152	5
C91-6S	1.0	33410	1	1	270	.1	10	7110	.1	25	66	45570	3070	41	15960	322	1	220	85	1450	15	1	24	1	2628	129.1	163	4	1	6	114	5
C91-7S	.9	23410	1	1	165	.1	5	4610	.1	16	32	38830	1870	28	8970	261	1	140	33	1610	17	1	15	1	1576	82.7	98	4	1	3	56	5
C91-8S	1.2	20660	6	1	169	.1	5	5260	.1	15	27	33290	2320	25	9060	260	1	140	32	1380	10	1	16	1	1474	71.5	94	4	1	3	56	10
C91-9S	1.3	26530	6	1	214	.1	7	5700	.1	18	37	45520	3010	34	10650	375	1	170	28	1940	27	1	18	1	1811	89.0	155	4	1	4	63	5
C91-10S	.8	29390	1	1	251	.1	8	6660	.1	21	48	52740	2910	31	11700	377	1	210	55	2020	14	1	15	1	2459	99.2	101	4	1	5	97	5
C91-24S	.8	25830	4	1	371	.1	6	7400	.1	20	50	40760	4100	31	12800	565	1	200	45	1340	13	1	20	1	1880	106.7	113	4	1	4	63	5
C91-25S	.6	29300	9	1	450	.1	7	9000	.1	23	85	49300	5540	32	16220	635	2	250	65	1800	19	1	24	1	1953	147.5	181	4	1	5	80	5
C91-26S	.6	28880	6	1	251	.1	6	5730	.1	18	55	43980	3600	34	12440	486	1	160	42	1280	15	1	16	1	1736	114.6	140	4	1	4	66	5
C91-27S	.7	22810	6	1	368	.1	6	8120	.1	18	57	38860	4780	29	12850	505	1	230	46	1530	14	1	22	1	1795	112.4	132	4	1	3	58	10
C91-28S	.6	24380	4	1	233	.1	5	5630	.1	15	45	39410	3650	28	10850	386	1	150	34	1280	14	1	15	1	1638	105.0	110	4	1	3	55	5
C91-29S	.5	28050	10	1	415	.1	6	7520	.1	23	66	44930	6440	37	14100	674	1	270	61	1250	20	1	23	1	1894	102.1	121	3	1	4	73	5
C91-30S	.7	24360	9	1	344	.1	7	10720	.1	20	58	40390	6480	35	12960	523	1	380	48	1260	12	1	34	1	1802	84.2	106	3	1	4	66	10
C91-31S	.7	20980	9	1	306	.1	6	7290	.1	18	37	33940	4140	30	10790	399	1	210	35	1720	16	1	17	1	1804	73.2	104	4	1	3	51	5
C91-32S	.9	21570	8	1	259	.1	5	9130	.1	17	30	32160	3140	28	8730	732	1	620	31	1240	19	1	19	1	1365	73.5	101	4	1	3	49	10
C91-33S	1.6	29820	13	1	346	.2	4	17420	.1	20	52	36510	3940	34	9840	1256	1	1070	48	1290	23	1	37	1	1172	79.7	148	5	1	4	63	5
C91-34S	.8	18650	8	1	134	.1	4	4830	.1	10	19	30900	1900	22	6080	253	1	590	15	850	15	1	14	1	1309	63.9	77	4	1	3	40	5
C91-35S	.9	39040	3	1	390	.1	8	11250	.1	23	55	44800	6060	39	18030	840	1	830	50	980	16	1	38	1	2052	102.8	104	4	1	4	74	5
C91-36S	.8	36080	3	1	264	.5	6	9740	.1	19	32	37010	4550	34	16900	807	1	820	26	690	21	1	28	2	1611	56.2	82	6	1	3	54	10
C91-37S	.7	23470	4	1	204	.1	5	6780	.1	13	25	34520	2940	33	9900	333	1	180	24	890	10	1	17	1	1656	75.1	100	4	1	3	53	30
C91-38S	2.0	22070	11	1	239	.1	4	5930	.1	14	29	30830	3770	29	8730	367	1	220	29	1070	24	1	16	1	1423	65.7	103	4	1	3	46	5
C91-39S	.7	26240	2	1	389	.1	7	7730	.1	20	58	44150	7740	34	12090	394	1	350	50	1160	20	1	20	1	1923	95.9	126	4	1	4	62	5
C91-40S	.5	27410	8	1	400	.1	7	7000	.1	21	53	41750	7410	35	12340	567	1	260	46	740	24	1	15	1	1925	92.9	108	4	1	4	64	5
C91-41S	.4	23360	3	1	158	.1	5	4500	.1	12	34	39370	2890	23	6920	238	1	100	18	1060	18	1	13	1	1361	82.6	93	4	1	3	47	5
C91-42S	.5	18930	7	1	146	.1	4	3380	.1	11	25	30950	2670	21	6640	277	1	90	22	1220	13	1	9	1	1052	64.9	75	4	1	2	40	5
C91-43S	.2	23060	1	1	137	.1	4	3670	.1	13	29	38480	3920	30	9030	306	1	90	20	960	13	1	8	1	1244	70.1	79	4	1	3	48	5
C91-44S	.8	17950	1	4	187	.1	6	9620	.1	13	25	28460	3450	22	9530	399	1	170	23	1000	15	1	18	1	1372	75.7	92	3	1	3	55	5
C91-45S	.1	21100	4	1	168	.1	6	3890	.1	12	31	36970	3730	27	8250	262	1	110	24	1090	23	1	10	1	1294	76.1	94	3	1	3	46	5
C91-46S	.9	22650	1	1	231	.1	5	11910	.1	14	28	31020	2750	29	6480	1058	1	970	22	1250	25	1	25	1	991	62.5	122	3	1	2	42	10
C91-47S	.3	25970	2	1	167	.1	8	5540	.1	13	28	39300	3220	42	9430	307	1	150	22	950	15	1	14	1	1589	75.2	90	4	1	3	49	5
C91-48S	.2	26850	4	1	173	.1	7	6880	.1	15	30	41880	3680	40	10000	400	1	120	22	820	16	1	16	1	1626	80.8	100	4	1	3	53	5
C91-49S	.4	30960	12	1	207	.2	8	5050	.1	18	36	36330	2300	30	10400	289	1	220	41	490	18	1	14	1	1645	75.3	77	4	1	3	57	5
C91-50S	.4	38880	7	1	173	.2	8	5230	.1	20	33	44570	2180	43	12180	268	1	260	35	770	55	1	16	1	1796	81.1	151	4	1	3	61	5
C91-51S	.6	44420	1	1	182	.1	11	5400	.1	21	33	52590	1910	38	21490	225	1	960	21	760	15	1	15	1	2508	120.8	287	4	3	4	62	10
C91-52S	.5	43210	1	1	225	.4	9	4000	.1	21	29	42210	2730	40	15350	380	1	230	30	780	38	1	12	1	1843	83.2	162	5	2	3	59	5
C91-53S	.6	37140	1	1	172	.1	10	6390	.1	17	16	41380	1750	42	16050	510	1	1230	18	920	25	1	22	1	2375	85.9	177	6	2	3	57	10
C91-54S	.5	38710	1	1	169	.5	9	5530	.1	14	17	38580	1100	38	14750	269	1	580	13	610	20	1	19	1	1945	80.2	126	6	2	3	51	5
C91-55S	.3	33050	1	1	135	.1	9	4110	.1	15	23	45310	1770	43	10590	321	1	550	18	1040	18	1	12	1	1985	92.9	110	5	2	4	55	5
C91-56S	.2	21630	1	1	140	.1	10	3300	.1	13	18	53590	1630	13	10060	278	1	100	1	1920	26	1	11	1	2587	132.6	110	4	2	3	33	10
C91-57S	.7	81400	1	1	136	1.4	10	12010	.1	19	28	32240	660	42	9600	183	1	2240	29	2180	22	1	96	1	1758	42.2	120	8	3	2	39	5
C91-58S	.5	42530	1	1	152	.1	11	4480	.1	17	22	46420	1380	54	13590	210	1	280	18	1240	15	1	13	1	2312	93.7	145	7	2	4	61	5
C91-59S	.9	24190	2	1	91	.1	8	4610	.1	12	26	38360	1010	36	8730	185	1	100	12	600	20	1	11	1	1586	81.8	78	6	1	3	44	5
C91-60S	.2	51400	4	1	190	.5	8	3430	.1	19	26	45800	1370	38	12060	228	1	540	20	550	24	1	11	1	1589	84.1	104	7	2	3	55	5
C91-61S	.4	16930																														

COMP: D.L. COOKE & ASSOCIATES LTD.  
 PROJ: CATO  
 ATTN: DAVID L. COOKE

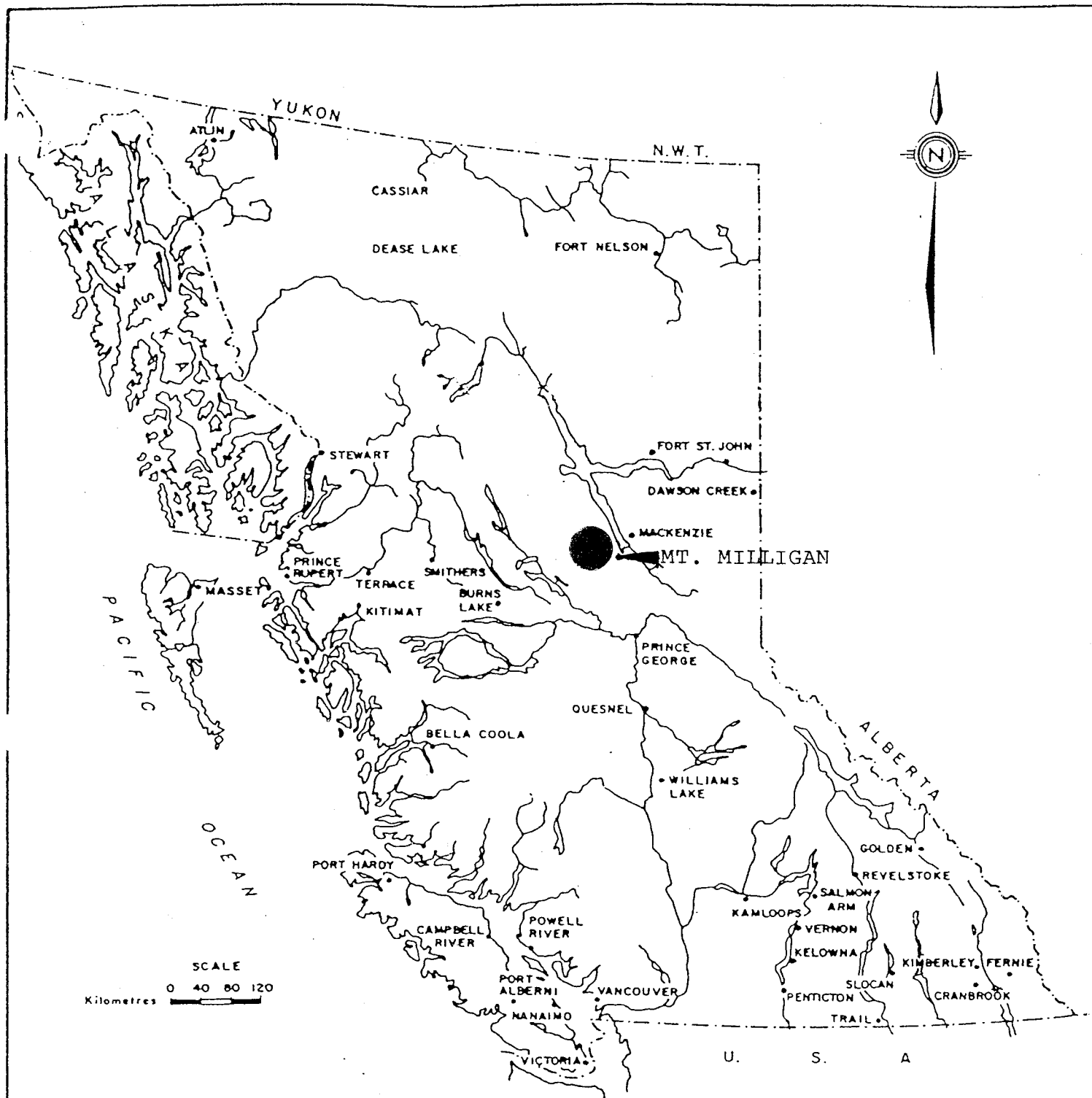
**MIN-EN LABS — ICP REPORT**  
 705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2  
 (604)980-5814 OR (604)988-4524

FILE NO: 1V-0866-SJ3+4  
 DATE: 91/08/27  
 \* 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	TI PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM	AU-WET PPM
C91-74S	.5	31070	5	6	173	.1	12	5930	.1	28	41	51870	1760	62	12710	509	1	100	48	2360	11	1	13	1	2354	96.2	137	4	3	5	69	10
C91-75S	.9	42380	1	2	304	.6	10	13790	.1	22	57	45060	3780	49	21710	523	1	1980	59	920	15	1	63	1	2228	116.4	135	4	3	4	59	5
C91-79S	.1	42320	1	4	199	.1	15	10370	.1	64	131	111030	2240	49	20210	1431	1	720	108	1870	3	1	28	1	3860	141.0	104	1	3	6	146	5
C91-82S	2.8	35940	28	6	140	.8	9	5970	.1	17	154	43900	1910	71	9550	476	1	340	27	1160	136	1	15	1	1459	92.1	204	6	5	3	50	5
C91-83S	.3	17210	2	1	77	.1	5	5550	.1	8	14	27780	680	16	4220	426	1	320	6	1010	31	1	20	1	869	60.8	177	5	1	2	26	5
C91-84S	.3	21310	2	1	54	.1	5	7740	.1	10	20	29520	980	29	6380	284	1	120	14	770	22	1	26	1	1121	56.1	87	4	3	2	33	5
C91-85S	.5	35420	5	2	215	2.0	8	7120	.1	20	36	37910	2800	35	12640	489	1	200	43	1420	54	1	22	1	1440	79.5	263	5	2	3	47	5
C91-86S	.1	20960	4	1	98	.1	6	4140	.1	11	23	43090	1440	23	7930	247	1	340	13	1530	30	1	13	1	1254	89.4	97	4	2	3	41	5
C91-87S	.2	29250	10	1	112	.1	5	4360	.1	14	23	45490	1200	34	6600	334	1	100	15	1430	26	1	11	1	1089	68.0	105	3	2	3	41	10
C91-88S	.1	33270	3	1	114	.5	6	4420	.1	13	23	37580	1310	31	8240	282	1	90	22	860	33	1	12	1	1156	75.1	123	4	2	3	44	5
C91-89S	.4	37080	3	3	52	.9	3	17110	.1	20	19	50430	300	11	3970	1057	1	420	23	1830	30	1	93	2	402	18.5	62	3	1	1	18	5
C91-90S	.1	20410	1	1	79	.1	6	3690	.1	10	14	32280	830	25	5490	326	1	80	12	1380	27	1	12	1	1136	62.8	87	4	2	2	30	5
C91-91S	.4	25790	1	1	121	.8	5	6380	.1	14	19	30150	1210	27	8240	439	1	190	26	1270	29	1	18	1	1062	60.3	115	4	2	3	35	5
C91-92S	.4	32150	7	1	66	.6	8	4590	.1	16	19	39060	1300	35	9480	249	1	130	19	700	20	1	11	1	1444	59.2	152	4	2	3	41	5
C91-93S	.4	28910	5	1	66	.2	6	3750	.1	12	14	34240	1300	35	6860	191	1	90	14	600	14	1	10	1	1313	55.9	118	5	2	3	38	10
C91-94S	.7	22760	7	1	114	.1	8	5320	.1	13	17	33960	1150	29	8780	426	1	160	22	1080	31	1	12	1	1463	66.2	180	6	2	3	42	5
C91-95S	.3	18230	11	1	115	.1	8	3860	.1	12	20	40740	1420	18	5270	420	1	80	7	780	24	1	11	1	1446	82.7	169	5	2	3	33	5
C91-96S	.5	20600	5	1	101	.1	5	3750	.1	11	20	31150	1780	25	6490	260	1	90	18	620	20	1	13	1	1176	59.3	82	4	1	3	35	5
C91-97S	.7	28190	5	1	193	.7	7	6090	.1	15	29	35520	2560	35	10420	511	7	160	32	910	31	1	19	1	1546	87.1	129	4	2	4	62	10
C91-98S	.3	31880	11	1	202	.5	7	3860	.1	14	34	40720	2230	34	9480	364	1	110	34	1210	50	1	10	1	1403	94.8	148	4	2	3	59	5
C91-99S	.8	23980	9	1	144	1.2	6	5380	.1	14	29	31870	2130	26	8870	450	13	140	28	1220	30	1	14	1	1352	79.6	110	5	2	3	48	5
C91-100S	1.1	13970	6	1	73	.1	5	2900	.1	7	17	26530	1560	9	4280	197	4	70	12	1260	22	1	10	1	1020	70.1	66	4	1	3	32	5
C91-101S	1.0	22650	8	1	104	1.2	7	2900	.1	13	37	33140	1750	20	7340	403	8	90	26	860	32	1	10	1	1464	73.1	107	6	2	4	52	5
C91-102S	.7	22980	6	1	97	.7	5	2990	.1	12	27	34590	1830	24	6220	363	8	90	16	1050	25	1	10	1	1099	62.6	91	5	2	3	38	10
C91-103S	.6	17930	4	1	65	.3	5	2980	.1	8	15	29810	1340	15	4280	203	8	80	6	720	23	1	11	1	1043	57.3	59	5	1	2	29	10
C91-104S	.2	23180	8	1	53	.7	4	2740	.1	9	18	32920	940	23	5330	209	5	70	9	580	30	1	10	1	758	53.6	61	5	1	2	32	5
C91-105S	.8	25690	6	1	127	.1	10	3840	.1	17	20	52600	1640	33	8600	282	3	520	12	950	25	1	9	1	2696	130.0	85	4	3	4	47	5
C91-106S	.5	17710	1	1	47	.1	10	1280	.1	11	13	37380	1590	17	5750	148	1	70	5	1230	17	1	7	1	2364	110.5	48	6	3	3	35	5
C91-107S	.3	11700	2	1	65	.8	4	3690	.1	7	7	18860	1140	14	3700	311	27	50	6	620	28	1	10	1	874	41.4	58	4	1	1	21	5
C91-108S	.3	11460	3	1	36	.5	2	1620	.1	3	11	10640	560	8	1930	106	1	150	3	780	21	1	7	1	354	23.6	37	4	1	1	13	5
C91-109S	.2	10890	1	3	57	.1	4	1900	.1	6	12	23380	800	6	1710	546	3	260	3	640	20	1	7	1	945	64.3	62	3	1	2	18	5
C91-110S	.7	19580	1	2	67	.7	4	8530	.1	11	27	29000	1100	27	4100	1840	62	440	11	1140	24	1	28	3	904	59.3	150	3	1	3	28	5
C91-111S	.6	8010	1	1	31	.1	4	1040	.1	2	7	5320	610	2	580	59	2	580	2	330	11	1	7	1	678	20.1	18	3	1	1	10	5







D. L. COOKE AND ASSOCIATES LTD.

MT. MILLIGAN AREA

LOCATION MAP  
CATO MINERAL CLAIMS

OMINECA M.D.

NTS 930/3W

D. L. COOKE AND  
ASSOCIATES LTD.

OWN. BY:

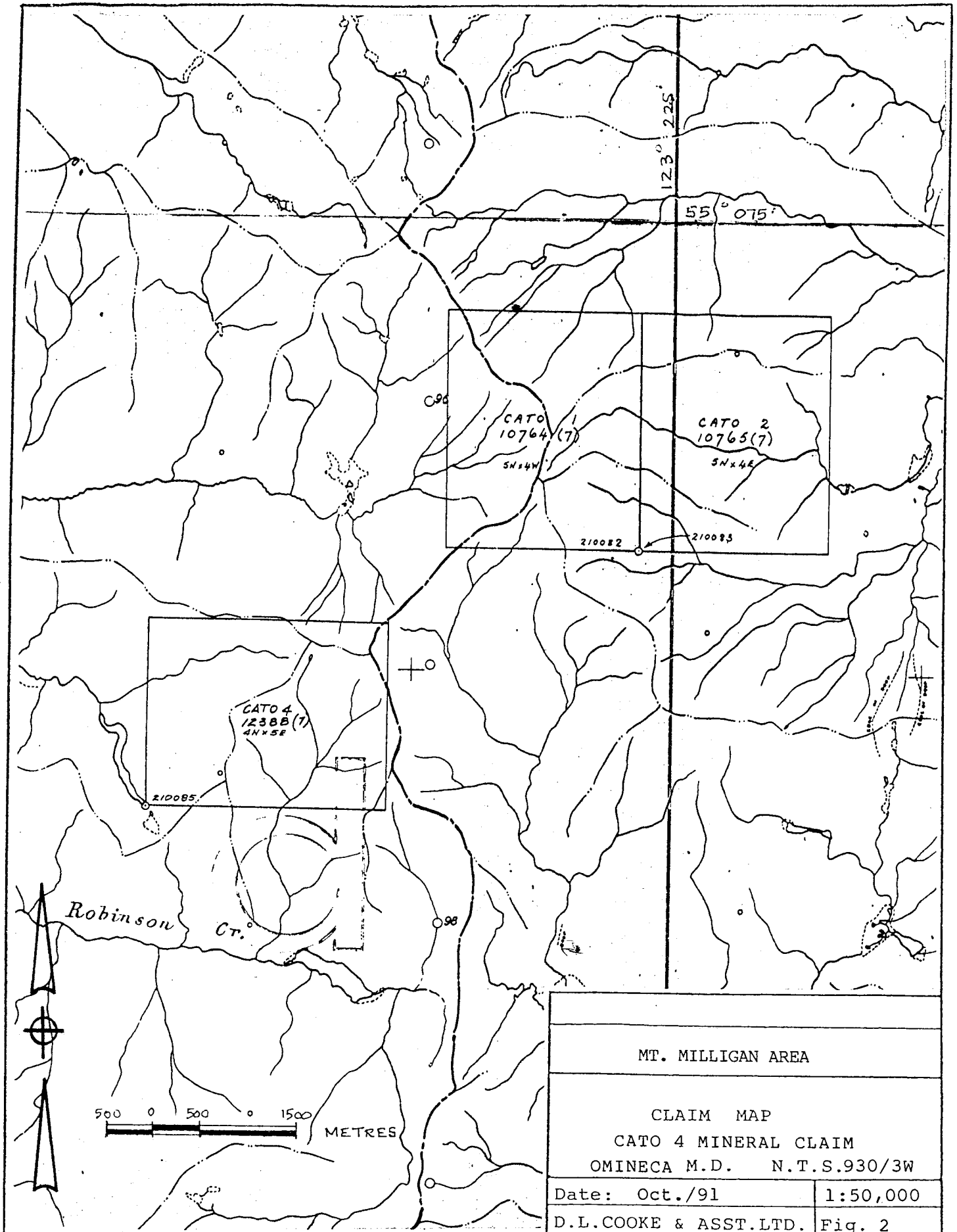
DATE: Oct/91

CHK. BY:

FIGURE

SCALE: AS SHOWN

1

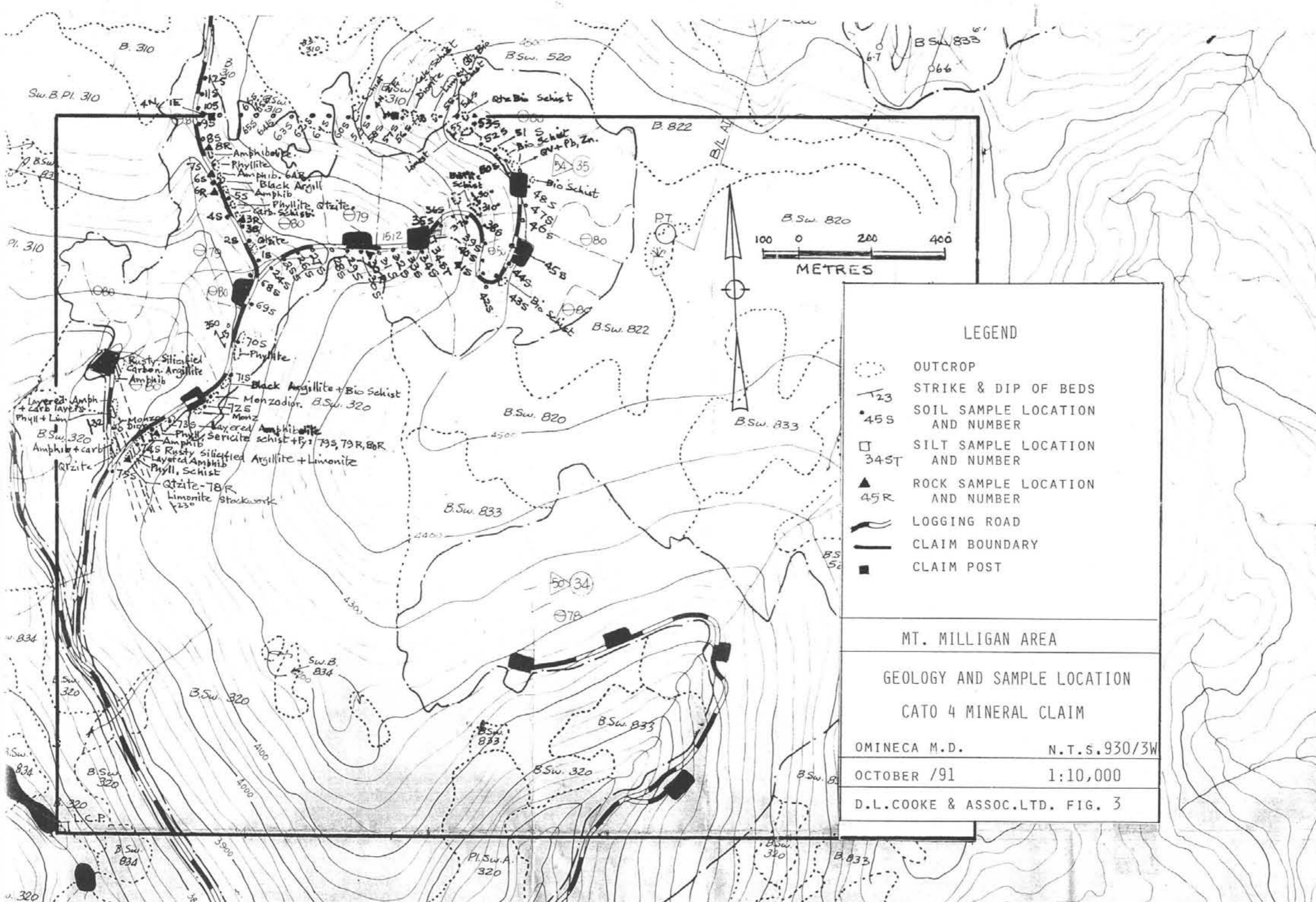


MT. MILLIGAN AREA

CLAIM MAP  
 CATO 4 MINERAL CLAIM  
 OMINECA M.D. N.T.S.930/3W

Date: Oct./91 1:50,000

D.L.COOKE & ASST.LTD. Fig. 2



**LEGEND**

- OUTCROP
- STRIKE & DIP OF BEDS
- SOIL SAMPLE LOCATION AND NUMBER
- SILT SAMPLE LOCATION AND NUMBER
- ROCK SAMPLE LOCATION AND NUMBER
- LOGGING ROAD
- CLAIM BOUNDARY
- CLAIM POST

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MT. MILLIGAN AREA

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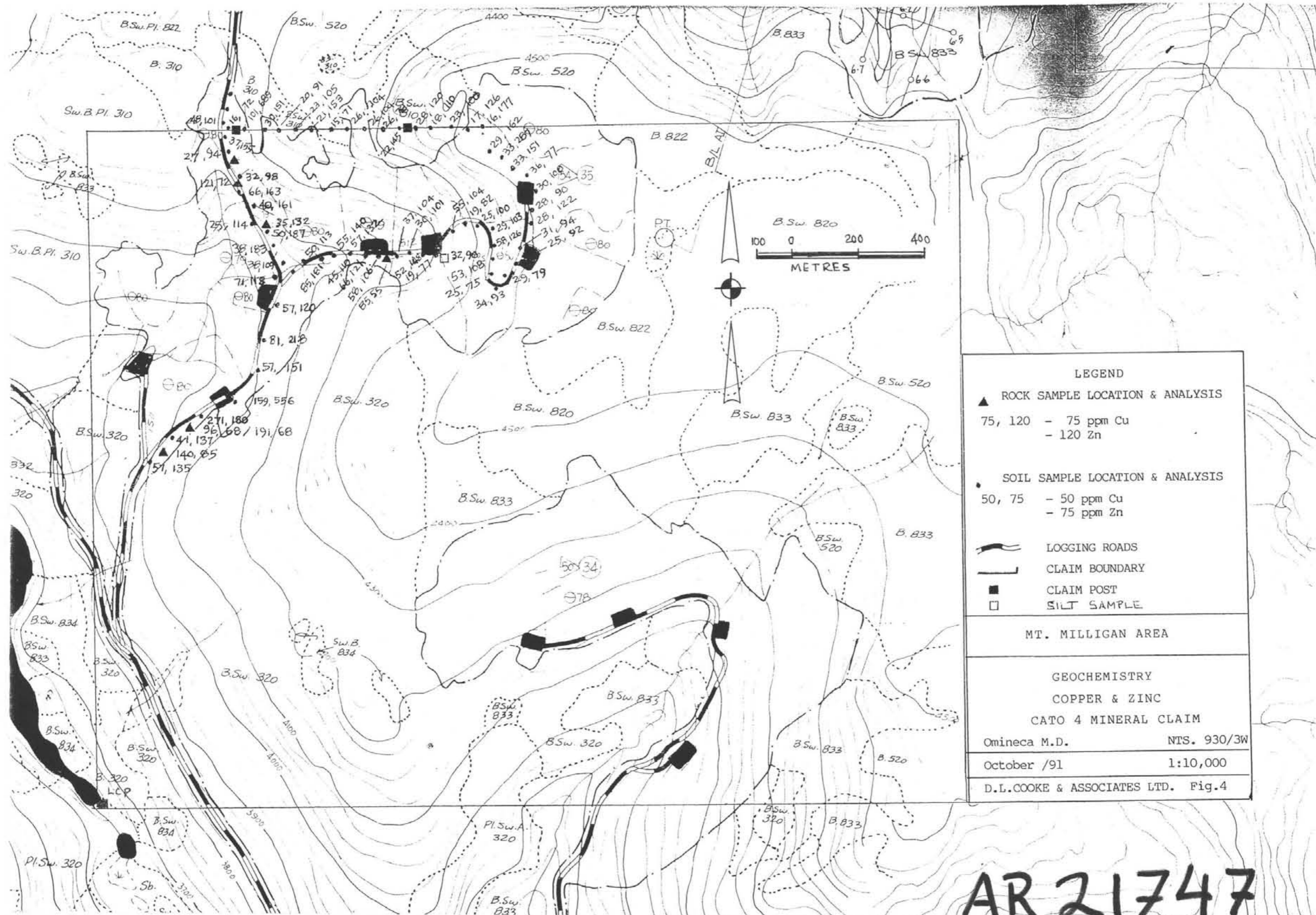
GEOLOGY AND SAMPLE LOCATION  
CATO 4 MINERAL CLAIM

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OMINECA M.D.	N.T.S.930/3W
OCTOBER /91	1:10,000
D.L.COOKE & ASSOC.LTD. FIG. 3	

21,747

GEOLOGICAL BRANCH  
ASSESSMENT REPORT



LEGEND	
▲	ROCK SAMPLE LOCATION & ANALYSIS
75, 120	- 75 ppm Cu - 120 Zn
●	SOIL SAMPLE LOCATION & ANALYSIS
50, 75	- 50 ppm Cu - 75 ppm Zn
	LOGGING ROADS
	CLAIM BOUNDARY
■	CLAIM POST
□	SILT SAMPLE
MT. MILLIGAN AREA	
GEOCHEMISTRY COPPER & ZINC CATO 4 MINERAL CLAIM	
Omineca M.D.	NTS. 930/3W
October /91	1:10,000
D.L.COOKE & ASSOCIATES LTD. Fig.4	

AR 21747