3894

GEOCHEMICAL REPORT

on a

SOIL SAMPLE SURVEY

EL RIO, VEGA, FARGO, EAGLE AND VERA CLAIM GROUPS

SURREY LAKE, NICOLA M.D., B.C.

September 1972 92I/7E

El Rio, Vega, Fargo, Eagle and Vera Claim Groups:	24 miles S25W of Kamloops on Surrey Lake
:	50° 120° SW
:	N.T.S. 92 I/7E

Written for:

Largo Mines Ltd
Arlington Silver Mines Ltd
1110 One Bentall Centre
505 Burrard Street,
Vancouver 1, B.C.

by

David G. Mark
Geophysicist,
GEOTRONICS SURVEYS LTD
514-602 West Hastings Street,
Vancouver 2, B.C.

September 29, 1972

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SUMMARY

A soil sampling geochemistry survey, in which the samples were tested for copper, was carried out over a portion of the Eagle, El Rio, Fargo, Vega and Vera claim groups during the latter part of September, 1972 by George Novak. The purpose of the sampling was to delineate any possible zones of copper sulphides.

The property is located on the northwestern slope of Mt. Guichon 24 miles S25W of Kamloops on the western edges of Surrey and Sussex Lakes. Access is by a two-wheel drive road from the Mamit Lake-Merritt road. Elevation is 4,500 to 5,000 feet and terrain is moderate.

The property is largely underlain by the Nicola group of rocks. On the eastern end is found Palaeozoic rocks and a batholith of the Coast Intrusions. The property is on strike of a westerly-trending fault. No mineralization is known to date on the property but much is found throughout the general area in both the Nicola rocks and the Coast Intrusions.

The results were statistically analyzed for the sub-anomalous and anomalous threshold values and were found to be 35 and 50 ppm respectively over the survey area. From this were produced four distinct zones that trend in a northwesterly direction. The zones contain anomalies that are isolated in nature and may indicate vein-shear zone type copper mineralization.

CONCLUSIONS AND RECOMMENDATIONS

It is felt that the soil sampling has delineated some zones of good possible copper mineralization. In the writer's opinion, Zone B is by far the most promising followed by Zones A, C, and D.

However, Zone B strikes northwesterly off of the property edge and its northwest end holds the highest values. The zone most probably extends further northwest and therefore it is recommended that the ground in this area be staked. Zone A is almost completely off of the property and it is recommended that at least the south-eastern part be staked.

Following the above, the geology of the property should be thoroughly mapped. This will greatly assist in the interpretation of any further geochemical or geophysical surveys. Attention should be paid to Anomaly E. The area around the value and the area upstream should be thoroughly prospected. Silt samples may help determine the location of the source.

The soil sampling should be continued to the north and west. Within the anomalous zones and on their possible extensions, the survey line interval should be dropped to 250 feet.

A self-potential survey should be run across the soil sample highs. This may help determine whether the copper zones are massive vein-type mineralization or otherwise. A VLF-EM instrument should be tried across these anomalous highs as well since it also may give invaluable information as to the mode of mineralization. If positive results are obtained, then the VLF-EM and the S.P. should be continued over the rest of the soil sampled area.

A magnetometer survey is recommended at least over the area soil sampled to date. It may be a good indicator

of copper mineralization considering the magnetite with the copper ore at Craigmont. Also, since a granitic batholith is nearby, a magnetometer may greatly assist in the mapping of different rock-types, especially intrusives.

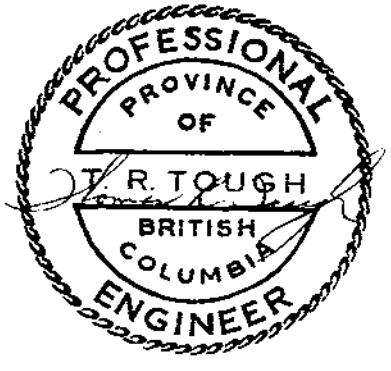
Any further work such as induced polarization, trenching, and drilling will depend upon the results obtained from the above recommendations.

Respectfully submitted,

GEOTRONICS SURVEYS LTD.,

David G. Mark,
Geophysicist

September 29, 1972



GEOCHEMICAL REPORT

on a

SOIL SAMPLING SURVEY
FOR COPPER
EL RIO, EAGLE, FARGO, VEGA AND VERA CLAIM GROUPS
SURREY LAKE, NICOLA M.D., B.C.

INTRODUCTION AND GENERAL REMARKS:

This report discusses the survey procedure, compilation results, and their interpretation of a soil sample survey carried out over the Eagle, El Rio, Fargo, Vega and Vera claim groups during September, 1972.

The number of soil samples picked up was approximately 1,466. Of these, 780 were picked up on the eastern portion of the property, and the rest were picked up off its eastern edge.

The samples were pickedup by George Novak after the claims were staked but before they were recorded. The sampling was not carried out by Geotronics Surveys Ltd. The writer knows Mr. Novak, has spoken to him regarding the sampling, and is thus satisfied that the sampling was done in a competent and professional manner.

The object of the survey was to outline any probable areas of copper sulphide mineralization. Copper orebodies are found throughout the general area within a radius of 20 miles, most notably those of Craigmont, Bethlehem, Lornex, Highmont and Valley Copper as well as the copper-mineralized body of Afton.

PROPERTY AND OWNERSHIP

The Eagle, El Rio, Fargo, and Vega claims are fully owned by Largo Mines Ltd., and Arlington Silver Mines Ltd., both of Vancouver, British Columbia. The Vera claims are fully owned by Peter Pecek of Vancouver, British Columbia and are presently being offered to the above two mining companies.

All claims are shown on Figure 2 and are described as follows:

Claim Name	Record Number	Expiry Date
Eagle 1-22 incl.	50342-63 incl	October 8, 1972
El Rio 1-20 incl.	50390-409 incl.	October 8, 1972
Fargo 1-10 incl.	50410-19 incl.	October 8, 1972
Vega 1-26 incl.	50364-89 incl.	October 8, 1972
Vera 1-4 incl.	110648-51 incl.	April 18, 1973

LOCATION AND ACCESS

The property is located on the west shores of Sussex and Surrey lakes. These two lakes are approximately 24 miles S25W of the City of Kamloops, British Columbia.

The geographical coordinates are: 50° 23'N and 120° 37'W.

The property may be reached by travelling 26 miles north from Lower Nicola along Guichon Creek. From this point a two-wheel drive gravel road travels 21 miles southeasterly along Meadow Creek to Sussex and Surrey Lakes.

PHYSIOGRAPHY

The property falls within the physiographic division known as the Nicola Plateau which is part of the Interior Plateau System. The plateau is flat and gently rolling country having large areas of undissected upland lying between 4,000 and 5,000 feet. This area has been covered by Pleistocene ice that has subsequently left glacial drift over most of the area with little bedrock exposed.

The property itself is found on the north eastern slope of Mt. Guichon and lies between elevations 4,500 and 5,500 feet giving a moderate relief of 1,000 feet.

Sussex and Surrey Lakes constitute the main occurrence of water on the property. In addition, several small creeks on the property establish a local drainage pattern that trends from northwest to southeast.

The claims area is largely covered by pine trees that have a thickness up to 6 or 8 inches. Some areas have moderately thick underbrush but most of the area under the pine trees is grassy.

The temperatures in the area vary from an extreme low of about -40°F in winter to an extreme high of about 95°F in summer though the usual winter temperature range will be -10° to 40°F and the summer range 60° to 80°F. The rainfall is light to moderate and snowfall is usually about three feet.

HISTORY OF PREVIOUS WORK

To the knowledge of the writer there has been no work done on the property previous to the soil sampling survey completed in September, 1971.

GEOLOGY

The geological description is taken from W.E. Cockfield and is also shown on Figure 3 which was sketched from his map.

Most of the property is underlain by the Nicola Group which is of Upper Triassic age. It is composed of greenstone, basalt, agglomerate, breccia tuff, minor argillite, limestone and conglomerate.

On its eastern contact and underlying all of or part of Fargo 4-10 mineral claims, is a group of rocks largely

of Palaeozoic age. It consists of chlorite schist, quartz-mica schist, amphibolite, and granitic intrusions.

A granitic batholith of the Coast Intrusions which is of Jurassic and (?) later age occurs on the eastern contact of the Palaeozoic rocks and underlies the eastern part of Fargo 9 and 10 claims. It consists of granodiorite, quartz diorite, and local zones of more acidic or more basic types. The Guichon Creek Batholith, also of the Coast Intrusions, occurs about nine miles west of Surrey Lake. The Coast Intrusions locally intrude the above two rock groups.

In the area of the property, the rock group contacts strike in a north-south direction. Immediately east of Surrey Lake is a fault-contact that strikes from N70E to east and separates the Nicola Group to the north from the Palaeozoic rocks and Coast Intrusions to the south.

No mineralization has so far been found on the property to the writer's knowledge. However, much copper mineralization is found in the general area.

Swakum Mountain, which is seven miles southerly of Surrey Lake, contains several sulphide deposits within greenstones and limestones of the Nicola Group. They consist of veins, disseminations, and replacements carrying lead, zinc, copper and tungsten minerals with gold and silver values.

Disseminated copper minerals within a porphyry are found nine miles northwest on Meadow Creek. Six miles northwest to the west of Homfray Lake is copper mineralization in the form of cuprite within a zone of fracturing. The old Aberdeen Mine occurs 12 miles southwesterly within the Guichon Creek batholith near its contact with the Nicola rocks. Several thousand tons of ore were shipped between the turn of the century and 1928. It consists of chalcocite and native copper within a fracture zone of greenstone which occurs between two fracture planes of granitic rock.

Several major copper deposits occur within a radius of 20 miles of Surrey Lake and include Craigmont to the southwest, the Afton deposit to the north, and the Guichon Creek batholith deposits of Bethlehem, Lornex, Valley Copper, Highmont, South Seas, and Alwin to the west.

SURVEY PROCEDURE

The base line runs in a north-south direction and follows the eastern boundary of El Rio 1 and 2, Vega 1 and 2, and Eagle 1 and 2 mineral claims. The survey lines were compassed in at right angles to the base line and thus run in an east-west direction. They largely run at an interval of 500 feet except on the Eagle claims and Fargo claims where they are 1,000 feet apart. The soil samples were picked up at 100-foot intervals along the survey lines, the location of which is marked by flagging tape.

The samples were picked up by shovel and placed in brown wet-strength paper bags upon which was marked the grid coordinates. The soil horizon sampled was in most cases B. In some places B horizon was not available and thus the A horizon was sampled.

TESTING PROCEDURE

All samples were tested by Crest Laboratories (B.C.) Ltd of Vancouver, British Columbia. The sample is first thoroughly dried and then sifted through an -80 mesh screen. A measured amount of the sifted material is then put into a test tube with subsequent measured additions of a solution of perchloric and nitric acid. This mixture is next heated for a certain length of time. The parts

per million (ppm) copper is then measured by atomic absorption.

TREATMENT OF DATA

The values in ppm copper of all 1,466 samples were first grouped into a logarithmic interval of 0.10. The cumulative frequency for each interval was then calculated and then plotted against the correlating interval to obtain the logarithmic cumulative frequency graph as shown in Figure 4.

The coefficient of deviation, indicative of the range or spread of values was calculated to be 0.15, a rather low figure. This indicates that the background values have a narrow range relative to most surveys which could be a result of a low mobility of copper ions within the soil in this region. This seems to be supported by by the fact that the anomalous zones on Sheet 1 are composed of groups of isolated highs rather than larger anomalies.

The graph shows the mean background value to be about 25 ppm taken at the 50% level. The sub-anomalous threshold value (a term used by the writer to denote the minimum value that is not considered anomalous but still important as an indicator of mineralization) is taken at one standard

deviation from the mean background value which is at the 16% level and is in this case 35 ppm. The anomalous threshold value is two standard deviations away at the 2 1/2% level and is on this property 47 ppm.

The graph shows a break at the 16% level which therefore indicates that there is an excess of high copper values on this property in the sub-anomalous and anomalous range. This is usually the case where copper sulphide mineralization occurs. The break at the 0.15% level is not considered important since this is caused by only two samples and that at the 97% level, since this represents low values which are not important in mineral exploration.

The soil sample values in copper were placed on Sheet 1 and contoured at a 50 ppm contour interval by heavy, solid contours. The sub-anomalous 35 ppm contour was dashed in.

DISCUSSION OF RESULTS

At first glance of Sheet 1, the anomalies, which are isolated in appearance, seem to be striking in a north-south direction. However, this is largely caused by the sampling interval which is 100 feet in an east-west direction and 500 feet in a north-south direction. Therefore, the contours are biassed in a north-south direction.

The writer feels that the isolated-type anomalies can be placed in up to four zones that strike in a north-westerly-southeasterly direction. They are labbeled A to D. All four are open on the northwestern end and A, B and D are open on the southeastern end. All zones are underlain by the Nicola group of rocks.

The mode of the anomalous zones which is that of a group of isolated highs, may indicate that the causitive sources are vein and/or shear zone type mineralization striking in a northwest direction. Otherwise, if the causitive source is disseminated copper mineralization, the isolated highs are likely the result of a low mobility of copper ions within the soil (as pointed out above) or, perhaps, poor soil samples.

Zone A is off the northeastern edge of the property and strikes across the northeastern arm of Surrey Lake. Its width is about 500 feet on the northwest end but may expand up to 2000 feet on the southeast end, if this end is a continuation of the northwest end. The southeast end is poorly sampled and contains a large unsampled area within its centre. It is close to the contact between the Nicola rocks and the older Palaeozoic rocks as well as the younger Coast Intrusions. It contains the second highest value within the survey area which is 370 ppm.

Zone B is felt to be the most consistent and the most promising. Its dimensions are at least 6,000 feet by up to 1,500 feet. The values are consistently higher towards the northwest end where the highest value of 820 ppm is found.

Zone C is up to 1,000 feet wide and at least 3,000 feet long. Its highest value is only 124 ppm.

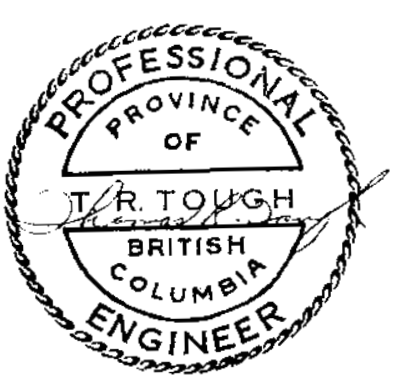
Zone D strikes more westerly than the other three in a direction of N55W. Its dimensions are up to 600 feet wide by at least 3000 feet long and reaches an intensity of 130 ppm. Both this zone and Zone C do not hold as high a probability for an indication of sulphides as Zones A and B.

The anomaly marked E is an isolated 1-value high of over 200 ppm and could indicate sulphides either at that location or further upstream.

Respectfully submitted
GEOTRONICS SURVEYS LTD.,

David G. Mark
Geophysicist

September 29, 1972



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Preto, V.A.S. - Geology of the Eastern Part of the Iron Mask Batholith, Report of the Minister of Mines and Petroleum Resources, 1967.

Lepeltier, Claude. - A Simplified Statistical Treatment of Geochemical Data by Graphical Representation, Economic Geology, Vol. 34, pp. 538-550, 1969.

Rice, H.M.A. Geology and Mineral Deposits of the Princeton Map-Area, Geol. Surv. of Can. Mem. 243, 1960.

Northcote, K.E. Geology and Geochronology of the Guichon Creek Batholith, BCDM Bull. 56, 1969.

Carr, J.M. Geology of the Bethlehem and Craigmont Deposits in "Tectonic History and Mineral Deposits of the Western Cordillera", pp. 321-328, CIMM Spec. Vol. No. 8, 1966.

GEOPHYSICIST'S CERTIFICATE

I, DAVID G. MARK of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geophysicist of GEOTRONICS SURVEYS LTD., with offices at 514-602 W Hastings Street, Vancouver 2, B.C.

I further certify that:

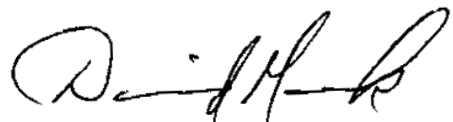
1. I am a graduate of the University of British Columbia (1968) and hold a B.Sc., degree in Geophysics.

2. I have been practising in my profession for the past four years and have been active in the mining industry for the past seven years.

3. I am an associate member of the Society of Exploration Geophysicists and a member of the European Association of Exploration Geophysicists.

4. This report is compiled from data obtained from a soil sampling survey carried out by George Novak during the end of September, 1971 on the Eagle, Fargo, El Rio, Vega and Vera claims and from pertinent data published maps and reports as listed under Selected Bibliography.

5. I have no direct or indirect interest in the properties or securities of Largo Mines Ltd (NPL) or Arlington Silver Mines Ltd (NPL), Vancouver, B.C. nor do I expect to receive any interest therein.



David G. Mark
Geophysicist

September 29, 1972

ENGINEER'S CERTIFICATE

I, THOMAS R. TOUGH, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geologist and an associate of T. R. Tough & Associates Ltd., with offices at 519-602 West Hastings Street, Vancouver 2, B.C.

I further certify:

1. That I am a graduate of the University of British Columbia (1965) and hold a B.Sc. degree in Geology.

2. I have been practising in my profession for the past seven years and have been active in the mining industry for the past fourteen years.

3. I am registered with the Association of Professional Engineers of British Columbia.

4. I have studied the accompanying report dated September 29, 1972 on a soil sampling survey over the Eagle, El Rio, Vega, Fargo, and Vera claims submitted by Geotronics Surveys Ltd., written by David G. Mark, B.Sc., Geophysicist, and concur with the findings therein.

5. I have no direct or indirect interest whatsoever in the property described herein, nor the securities of Largo Mines Ltd (NPL) and Arlington Silver Mines Ltd (NPL) and do not expect to receive any interest therein.

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
THOMAS R. TOUGH

Thomas R. Tough, P.Eng.,
Consulting Geologist

September 29, 1972

3894 M-1

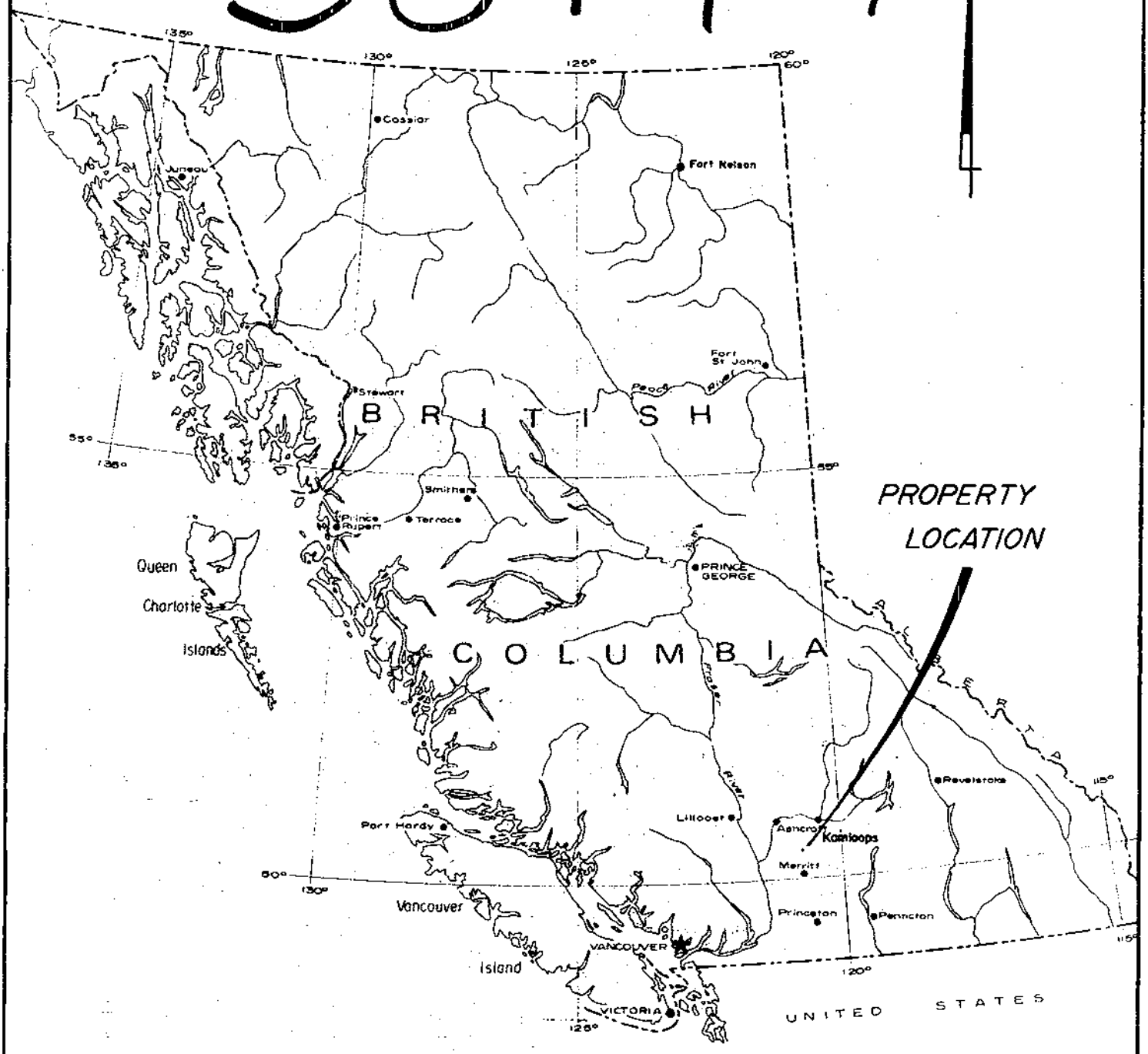


FIG. 1

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
T.R. TOUGH

GEOTRONICS SURVEYS LTD.

LARGO MINES LTD.
ARLINGTON SILVER MINES LTD.
EL RIO, VEGA, EAGLE, FARGO, VERA CLAIMS
NICOLA M.D., B.C.

LOCATION MAP

SCALE 1" = 134 mi

DRAWN. PDT	CHECKED:	DATE SEPT. 1972

PDT

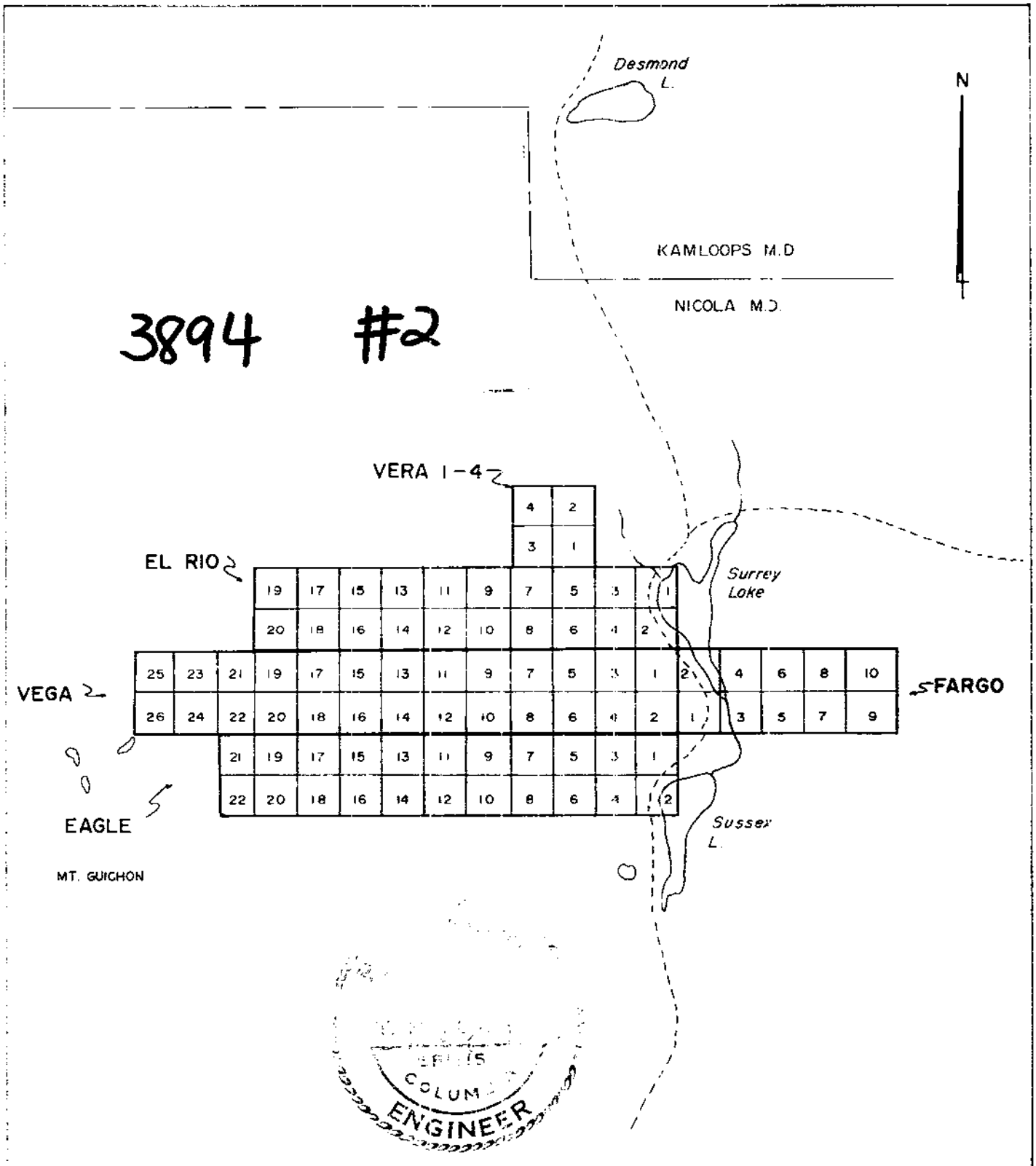
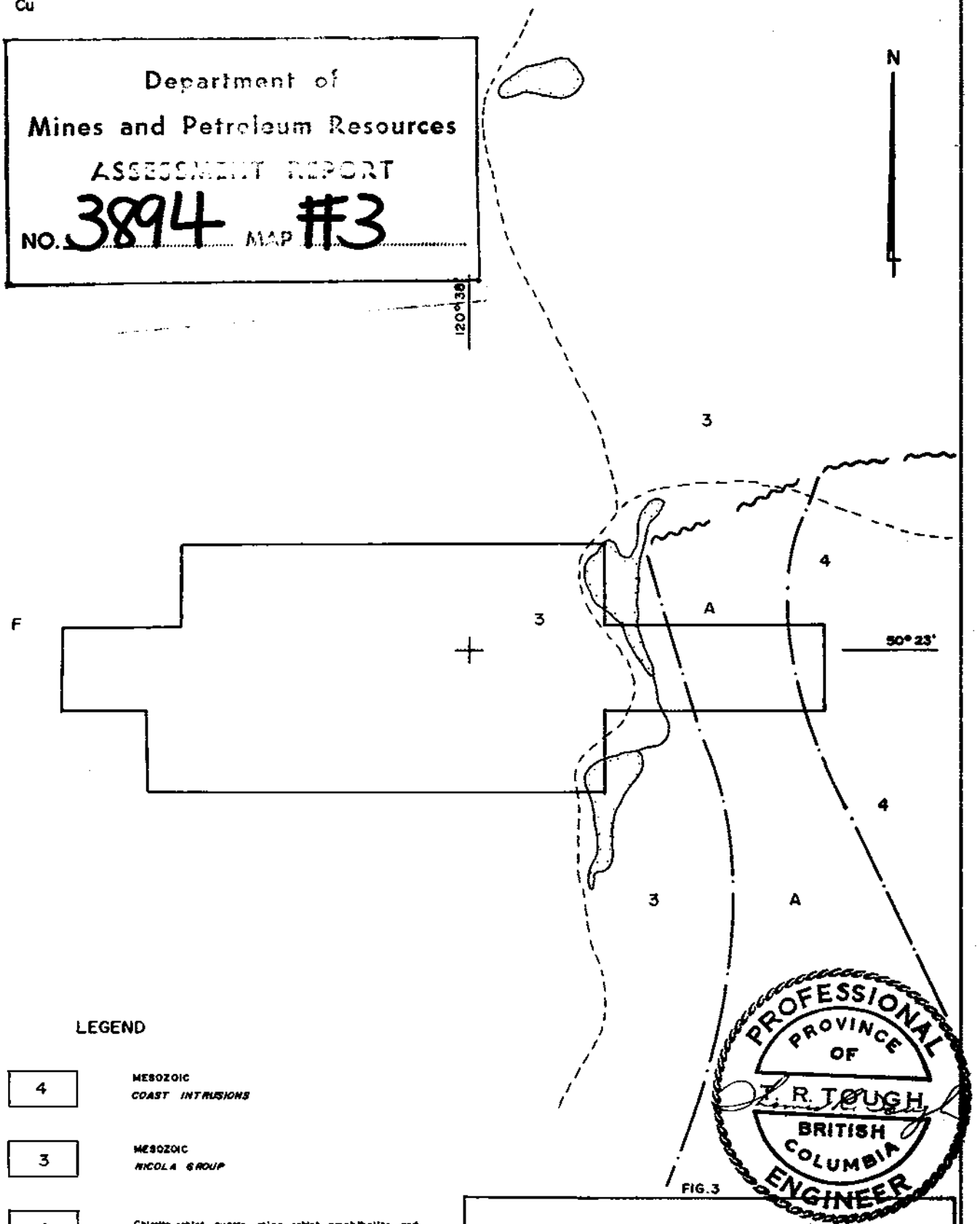


FIG. 2

LARGO MINES LTD. & ARLINGTON SILVER MINES LTD.		
EL RIO, VEGA, EAGLE, FARGO, VERA CLAIMS NICOLA M.D., B.C.		
CLAIM MAP		
GEOTRONICS SURVEYS LTD. PDT DRAFTING SERVICES	SCALE 1" = 4400'	DATE Sept. 1972

Cu

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3894 MAP #3



LEGEND

4	MESOZOIC *COAST INTRUSIONS*
3	MESOZOIC *NICOLA GROUP*
A	Chlorite schist, quartz - mica schist, amphibolite, and granitic intrusions
F	Fossil locality
Cu	Copper

Taken from W.E. Cockfield

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. R. TOUGH

FIG. 3

GEOLOGY

GEOTRONICS SURVEYS LTD. PDT DRAFTING SERVICES	SCALE	DATE

COST BREAKDOWN
CONTRACT NO. 72-26
SOIL SAMPLE SURVEY
EL RIO, VEGA, FARGO, EAGLE AND VERA CLAIM GROUPS
SURREY LAKE, NICOLA M.D., B.C.

Wages

4-man crew - 30 line mile survey grid, 6 days @ 60/day/man	$	1,440.00
Soil sample survey - 12 days @ 60/day/man		2,880.00
Survey supplies		120.00
4-wheel drive		450.00
Analysis - 1466 soil samples @ 1.50/sample		2,199.00
Mapping		225.00
Geochemical report		600.00
Engineering fees		300.00
TOTAL	$	8,214.00

Declared before me at the City
of Vancouver, in the
Province of British Columbia, this 5
day of October 1972, A.D.

C. Carlson

A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.

Sub - mining Recorder

Geotronics Surveys Ltd.

LARGO MINES LTD & ARLINGTON SILVER MINES LTD.

EL RIO, VEGA, EAGLE, FARGO, VERA CLAIMS

Nicola M.D., B.C.

CUMULATIVE FREQUENCY GRAPH

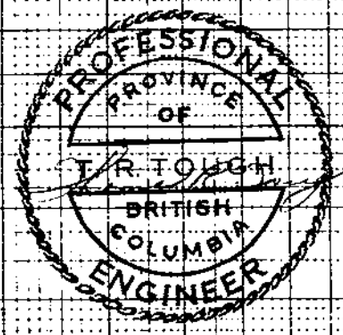
SOIL SAMPLING—COPPER

Submitted at
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 3894 MAP #4

B = 25ppm

SA = 35ppm

A = 47ppm



3894 M-44

FREQUENCY (%)

0.01 0 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.5 99.8 99.9 99.99

99.99 99.9 99.8 99.5 99 98 95 90 80 70 60 50 40 30 20 10 5 2 1 0.5 0.2 0.1 0.05 0.01

10 100 1000

COPPER VALUES (ppm)

N

45 W — 30 W — 15 W — BL. LINE — 15 E — 30 E — 45 E

L-40N
L-35N
L-30N
L-25N
L-20N
L-15N
L-10N
L-5N
L-00
L-5S
L-10S
L-15S
L-20S
L-25S
L-30S
L-35S
L-40S
L-45S
L-60S
L-65S
L-70S
L-75S

VERA 4 | VERA 2 | VERA 3 | VERA 1

EL RIO 9 | EL RIO 7 | EL RIO 5 | EL RIO 3 | EL RIO 1
EL RIO 10 | EL RIO 8 | EL RIO 6 | EL RIO 4 | EL RIO 2
VEGA 9 | VEGA 7 | VEGA 5 | VEGA 3 | VEGA 1
VEGA 10 | VEGA 8 | VEGA 6 | VEGA 4 | VEGA 2
EAGLE 9 | EAGLE 7 | EAGLE 5 | EAGLE 3 | EAGLE 1
EAGLE 10 | EAGLE 8 | EAGLE 6 | EAGLE 4 | EAGLE 2

FARGO 2 | FARGO 4 | FARGO 6 | FARGO 8
FARGO | FARGO | FARGO 5 | FARGO 7

Fishing Lodge

Surrey Lake

Sussex Lake

Creek

A B C D E

LEGEND

- CLAIM LINE
- EAGLE 21 — CLAIM No.
- SURVEY LINE
- CONTOUR LINE 35 ppm (SUB-ANOMALOUS)
- 150 — CONTOUR LINE per 50 ppm (ANOMALOUS)
- CREEK
- SWAMP OR MEADOW

3894 M-5

TO ACCOMPANY GEOCHEMICAL REPORT BY D.G. MARK, GEOPHYSICIST

GEOTRONICS SURVEYS LTD.

LARGO MINES LTD. & ARLINGTON SILVER MINES LTD.

EL RIO, VEGA, EAGLE, FARGO & VERA CLAIMS
NICOLA M.D., B.C.

GEOCHEMICAL SOIL - SAMPLING - Copper

DATA & CONTOURS

SCALE	DATE	JOB No.	SHEET No.	DRAWN BY
1" = 500	SEPT. 1972	72 — 26	1	P.P. PDT DRAFTING SERVICES