4059

GEOCHEMICAL REPORT

on a

SOIL SAMPLING SURVEY

WT CLAIM GROUP

WALLOPER LAKE AREA, KAMLOOPS M.D., B.C.

September, 1972

92I/7E, 10E

WT Claim Group: 16 miles S40W of Kamloops, B.C.

: 50^{o} 120^{o} SW

: NTS - 92 I/7E

Written for: Texal Development Ltd (NPL)
5th Floor, 134 Abbott Street
Vancouver 4, B.C.

by: Howard A. Larson
Geophysicist
Geotronics Surveys Ltd
514-602 W Hastings Street,
Vancouver 2, B.C.

October 4, 1972

TABLE OF CONTENTS

SUMMARY

A soil sampling geochemistry survey, in which the samples were tested for copper, was carried out over most of the WT claim group during September, 1972 by the writer. The purpose of the sampling was to delineate any possible zones of copper sulphides.

The property is located to the northwest of Walloper Lake 16 miles S40W of Kamloops. Access is by the Kamloops-Logan Lake road. Elevation is about 4700 feet and terrain is fairly gentle. Sufficient water should be available for drilling purposes.

The property is totally underlain by the Nicola Group of rocks, according to Cockfield, which are largely volcanics. About 3 to 4 miles east of the property, the Nicola rocks are intruded by a granitic batholith of the Coast Intrusions. Also to the southeast between the Nicola rocks and Coast Intrusives is a band of Palaeozoic rocks. Very little sulphides have so far been found on the property.

A cumulative frequency graph was drawn of all the soil sample copper data and 48 ppm was found to be a sub-anomalous threshold value and 68 ppm, an anomalous threshold value. Based on these two values, several anomalous zones have been contoured on sheet 1. Many of the higher values of these zones are found in low areas such as swamps and near streams and therefore are felt to be caused by copper ion enrichment. However, two zones, labelled A and B, are felt to hold a good possibility of being caused by copper mineralization over a sufficiently wide enough area for economic interest.

CONCLUSIONS AND RECOMMENDATIONS

It is felt that results do warrant further work but in doing so the following conclusions should be kept in mind.

1. The property is underlain by Nicola volcanics which in several places host sizable copper sulphide mineralized bodies. However, the Afton copper mineralized body is found within an intrusive close to Nicola rocks.

2. The soil sampling geochemistry survey for copper has revealed several anomalous zones that are largely found within topographically low areas. This indicates copper ion enrichment from topographically higher areas.

3. If there is copper ion enrichment of low areas, there usually is a copper mineralized source nearby to cause the enrichment.

4. Much of the copper mineralization throughout the area is found within topographic lows.

5. Most of the anomalous zones are found on the northern half of the survey area, including the two most promising zones, A and B.

Taking the above points into consideration it is felt additional work should be carried out and that it be concentrated on the northern half of the property, as follows:

1. Detailed soil sampling should be carried out and continued onto the unsampled WT 51-53 claims. A recommended spacing is 200-foot separate lines and 100-foot separated stations.

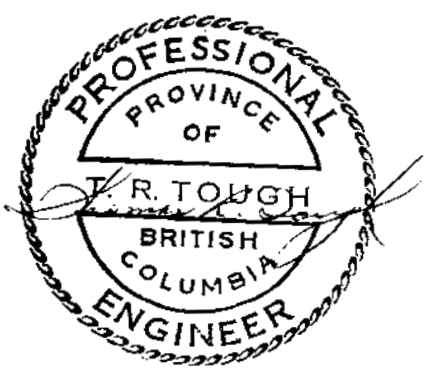
2. The property and area around it should be thoroughly geologically mapped with special attention being paid to the anomalous zones.

3. Additional work such as an induced polarization survey, trenching, and drilling will depend largely from the results of the above two recommendations.

Respectfully submitted,
GEOTRONICS SURVEYS LTD.,

Howard A. Larson
Geophysicist

October 4, 1972



GEOCHEMICAL REPORT

on a

SOIL SAMPLING SURVEY

WT CLAIM GROUP

WALLOPER LAKE AREA, KAMLOOPS M.D., B.C.

INTRODUCTION AND GENERAL REMARKS

This report discusses the procedure of a reconnaissance soil sampling survey and the compilation and interpretation of the resulting data. The survey was completed over the WT Claim Group during September, 1972. The field work was carried out by the writer and one assistant. A total of approximately 20 line miles of grid was sampled at 400 foot intervals giving a total of 249 soil samples. 12 rock outcrops were also sampled at various grid locations.

The object of the survey was to outline possible areas of copper sulphide mineralization.

Property and Ownership

The property is owned by Texal Developments Ltd. It is comprised of 20 contiguous mineral claims held by location. They are as follows:

Claim Name	Tag Number	Expiry Date
WT #35-44 incl.	308535M-44M incl.	March 6, 1973
WT #51-60 incl.	308551M-60M incl.	March 6, 1973

Location and Access (50° 120° SW)

The property is located approximately 16 miles S40W of Kamloops to the north west of Walloper Lake.

The southern portion of claims WT 43 + 44 is accessible by the road from Kamloops to Logan Lake. This road was being paved past the claim group while the writer was on the property. The paving should now be completed.

Access to claims WT 41 + 42 could be obtained on the old gravel and dirt roads shown on Sheet 1. A limited amount of clearing of dead falls would have to be carried out to make these roads passable.

Physiography

The property is found on the west flank of the Nicola Plateau which forms part of the belt of the Interior Plateau System. The elevation of the property is

approximately 4700 feet. The relief is negligible except in areas where creeks have cut steep sided valleys.

There is sufficient water available from the intermittant streams, swamps and lakes shown on Sheet 1 for all phases of exploration. Pine, fir, and poplar timber occurs on the property and varies in density from open forest in the higher flat areas to very dense second growth in the lower swampy area. There is an abundance of dead falls over most of the survey area.

Evidence observed in road cuts and stream channels suggest that parts of the survey area could be covered by fairly deep overburden, which is probably glacial till resulting from Pleistocene ice.

History of Previous Work

The property was examined by T.R. Tough, P. Eng., in April, 1972. At this time he recommended that geological, geochemical, and geophysical surveys be carried out.

To the best of the writer's knowledge, no other work has been carried out over the property.

Geology

The geological description of the property is largely taken from T.R. Tough, the geological report on the general area by W.E. Cockfield, and identifications of rock samples taken by the writer made by L. Sookochoff, P. Eng.

The geology of the area is as shown on Sheet 3 which was sketched from the G.S.C. Geology map 886A Nicola (East Half). The survey area is shown to be underlain by the Nicola group. To the east of the property these rocks have been intruded by the Coast intrusions. The Nicola rocks of Upper Triassic age are mainly a grey-green to bright green, fine-grained, nearly aphanitic to coarsely porphyritic lava with lesser amounts of other coloured flows. Associated with the lavas are tuffs, breccias, and agglomerates of various colours and appearance. Alteration of the rocks is to chlorite, calcite, albite and epidote. Feldspars show advanced alteration and there is secondary calcite and deuteric quartz. Hornblende phenocrysts, probably being derived from the uralization of augite, have been partially chloritized.

To the south and east of the property, a granitic batholith of the Coast Intrusions which are of Jurassic and later age have intruded the Nicola rocks. Between the Nicola rocks and the intrusive to the southeast

are chlorite and quartz-mica schists of Palaeozoic age.

The locations of the outcrops sampled by the writer are shown on Sheet 1. These samples were subsequently identified by L. Sookochoff, geologist, of T.R. Tough and Associates, as follows:

Sample location	Description
L 8 N 10 + 50 W	Dacite
L 32 N 12 + 00 W	Andesite - Sericite, chlorite and hematite alteration
L 36 N 8 + 70 W	Andesite - light chlorite alteration (saussuritization)
BL 37 + 47 N	Andesite (Porphyritic)
L 40 N 11 + 25 W	Andesite, epidote
L 40 N 16 + 00 W	Dacite Porphyry - euhedral hornblende phenocrysts, epidote alteration
L 40 N 23 + 00 W	Dacite Porphyry - euhedral hornblende phenocrysts, saussuritized matrix
L 44 N 10 + 50 W	Dacite porphyry
L 44 N 14 + 50 W	Dacite porphyry - euhedral hornblende phenocrysts, rare pyrite and calcopyrite, patchy epidote alteration
L 44 N 34 + 50 W	Andesite - saussuritization
L 48 N 10 + 20 E	Possible Diorite, Mafics (hornblende being converted to biotite)
L 48 N 12 + 30 W	Dacite Porphyry - euhedral hornblende phenocrysts, epidote alteration

Survey grid

The location line for claims WT 35-44 was used as a base line for lines 0 N to 88 N. The final post of WT 43 and WT 44 was taken to be 0 + 00 N and the line was flagged with red flagging tape at 100 foot intervals. Lines 92 N and 96 N were chained and compassed in relative to the point where line 88 N crosses the location line for claims WT 54 to 61.

The cross lines were compassed in normal to the base line at 400 foot intervals from 0 + 00 N. These lines were marked at 200 foot intervals with red flagging tape. Sample sites were marked with their grid location. The grid lines are shown on Sheet 1.

Survey Procedure

The samples were picked up on 400 foot centers on the 400 foot separated survey lines. Samples were taken with a soil auger at depths of approximately 4 to 12 inch depths and placed in wet-strength paper bags with grid co-ordinates marked thereon. The soil horizon tested was largely B with some A. A note was made of any extraordinary soil conditions that may give rise to misleading assay results.

Testing Procedure

All samples were tested by General Testing Laboratories 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 249 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.

The graph shows the mean background value to be about 34 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 48 ppm. The anomalous threshold value is two standard deviations away at the 2 1/2% level and is on this property 68 ppm.

The graph shows a break at the 24% 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 mineralization occurs.

The soil sample values in copper were placed on Sheet 1. The 50 ppm contour was dashed in, being close to the sub-anomalous value. The anomalous contours were drawn in as a solid line and are 70, 100, 150, 200, 300, and 400 ppm respectively which has an interval close to being logarithmic. After all contours were drawn in it appeared that the 40 ppm contours joined together several anomalies and therefore it was dashed in.

Discussion of Results

As can be seen on Sheet 1 the major anomalous zones occur in low swampy areas and along the creeks. It is felt that this anomalous pattern would follow the creeks even more closely had the sampling interval been such that a sample had been taken at every point where a line crossed a creek. This probably reflects in part a migration of the copper ions to these low areas from the surrounding ground. However, it should also be

noted that there is a correlation in the general area between topographic depressions and copper mineralization.

Possibly of greater significance than the extreme high are the larger anomalous zones, A and B, outlined by the 40 ppm contour. These zones do not appear to be totally controlled by topography and thus it is very possible that they outline areas of copper mineralization. The extreme highs in these areas would still appear to reflect downslope enrichment.

Anomalies C, D, E, F and G are mainly restricted to the immediate areas of the creeks and probably reflect downslope and downstream enrichment, the source of this enrichment being reflected by the larger anomalous zones. Exceptions to the above statement occur within anomalies C and H at station (76N, 12W) and (60N,32W) respectively. Both of these samples appeared to be standard samples and were taken in areas which would not appear to be subject to enrichment. Thus, they probably reflect isolated areas of copper mineralization.

The 2 anomalous values of anomaly K are found within a swampy area and therefore also appear to reflect copper enrichment. The source of the copper is probably the west side as the north, east, and south sides have low values.

In general the maximum values of samples taken near the streams is lower in the southern portion of the survey area. This would also tend to suggest that the most probable location of any mineralization would be within the northern portion of the survey area. Samples taken within anomalies H and I were light brown and did not appear to be taken within areas subject to enrichment. Thus they probably reflect isolated areas of copper mineralization.

October 4, 1972

Respectfully submitted,

Geotronic Surveys Ltd.,

Howard A. Larson

Howard A. Larson
Geophysicist

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
T. R. TOUGH

SELECTED BIBLIOGRAPHY

Cockfield, W.E. - Geology and Mineral Deposits of Nicola Map Area, British Columbia, Geol. Surv. of Can., Mem. 249, 1961.

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

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

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

Tough, T.R. Geological Report on the W. T. Group of Claims, Kamloops Mining Division, for Texal Development Ltd. (NPL), T.R. Tough & Associates Ltd. April, 1972.

GEOPHYSICIST'S CERTIFICATE

I, Howard A. Larson, 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 West Hastings Street, Vancouver 2, B.C.

I further certify that:

1. I am a graduate of the University of British Columbia (1971) and hold a B.Sc. degree in Geophysics.

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

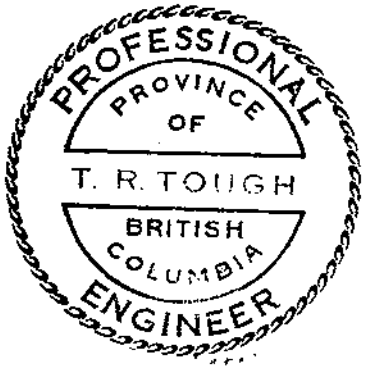
3. This report is compiled from data obtained from a soil sampling geochemistry survey during September 1972 on the WT Claim Group and from pertinent data from published maps and reports as listed under Selected Bibliography.

4. I have no direct or indirect interest in the properties or securities of Texal Development Ltd. (NPL), nor do I expect to receive any interest therein.

Howard A Larson

Howard A. Larson
Geophysicist

October 4, 1972
Vancouver, B.C.



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:

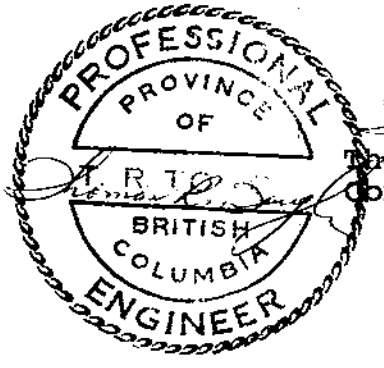
1. That I am a graduate of the University of British Columbia (1965) and hold a B.Sc. degree in Geology.

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.

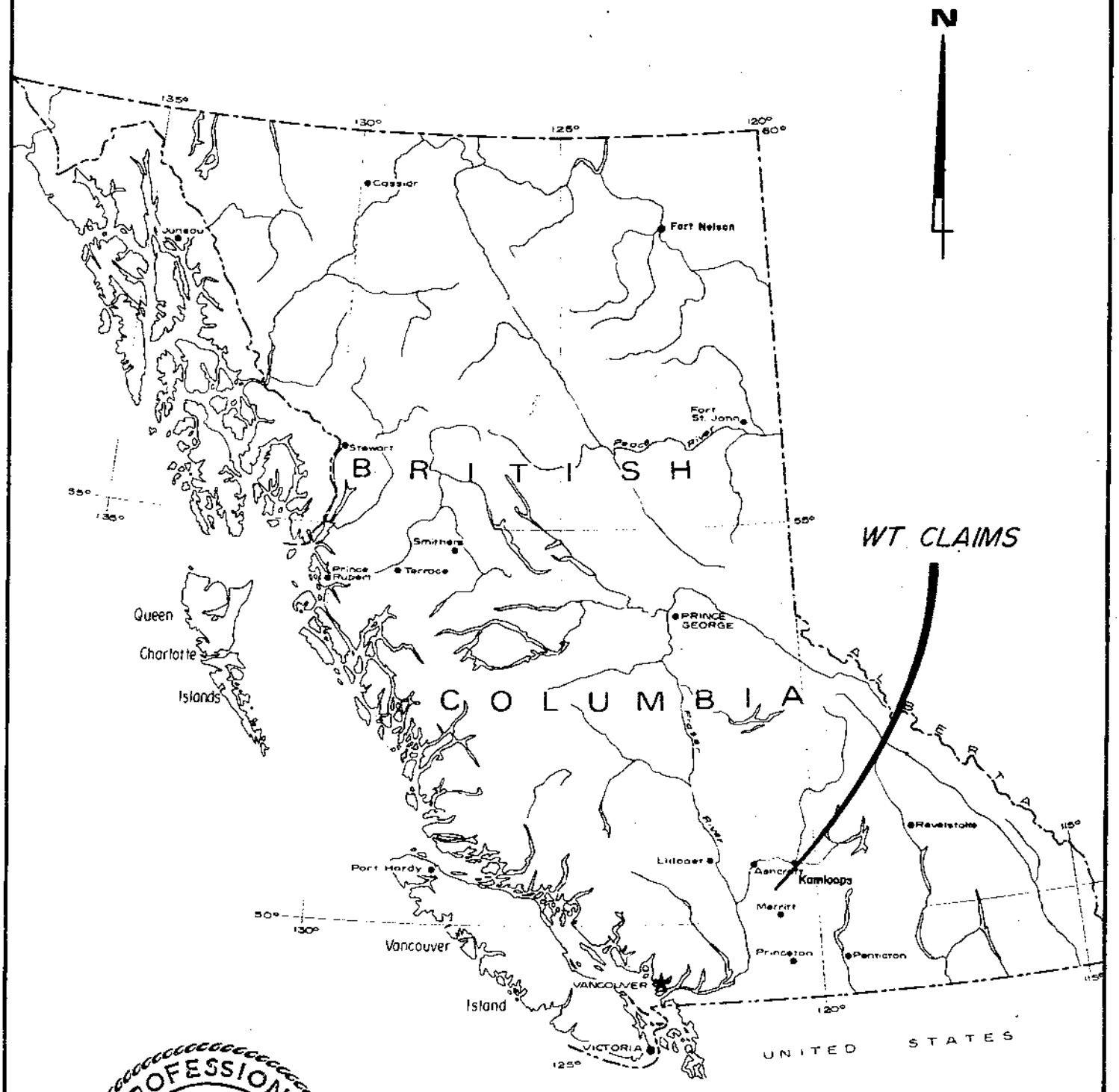
4. I have studied the accompanying report dated October 4, 1972 on a soil sampling survey over the WT Claim Group claims submitted by Geotronics Surveys Ltd., written by Howard A. Larson, B.Sc., Geophysicist, and concur with the findings therein.

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



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

October 4, 1972.



PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
T. R. TOUGH

FIG. 1

GEOTRONICS SURVEYS LTD.

TEXAL DEVELOPMENTS LTD.

WT CLAIMS

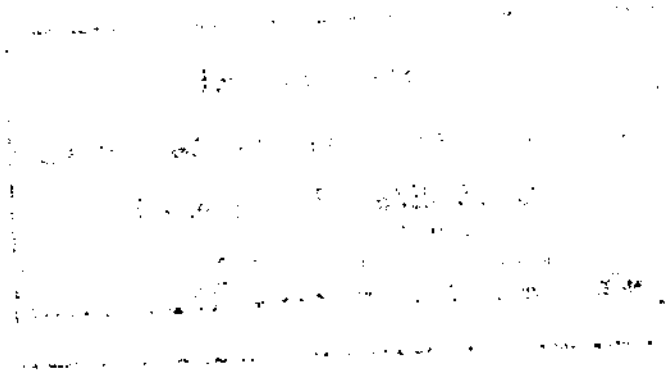
KAMLOOPS M.D., B.C.

LOCATION MAP

SCALE 1" = 134 mi

DRAWN. PDT	CHECKED.	DATE Sept. 1972

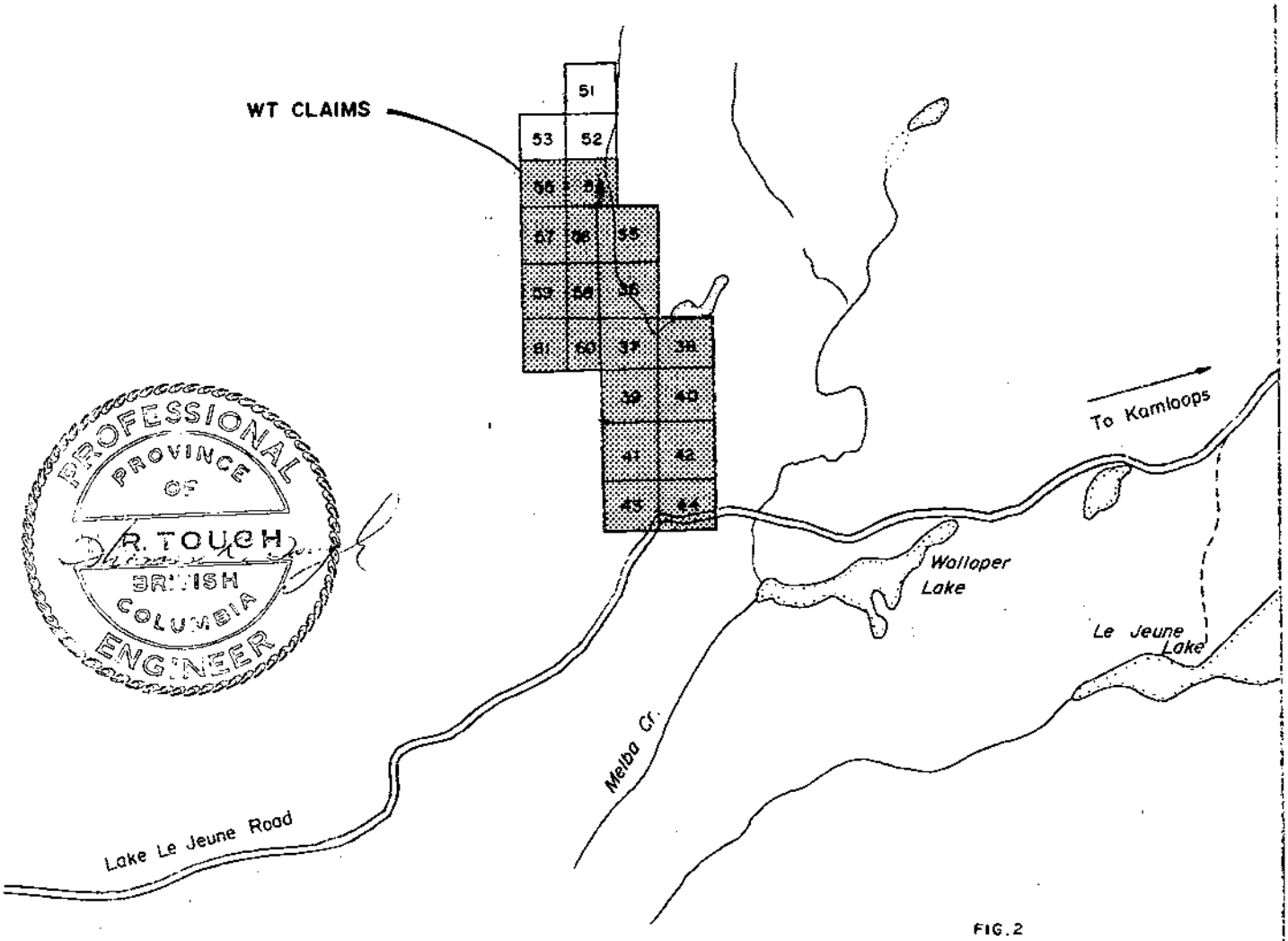
PDT



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4059 MAP #2

Chuwhels Mountain

N



PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
R. TOUCH

FIG. 2

SURVEY AREA

GEOTRONICS SURVEYS LTD.

TEXAL DEVELOPMENT LTD.

WT CLAIMS

CLAIM MAP

KAMLOOPS M.D., B.C.

SCALE 1" = 5000'

PDT	APRIL 1972

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4059 MAP #3

N

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J.R. TOUGH

FIG. 3

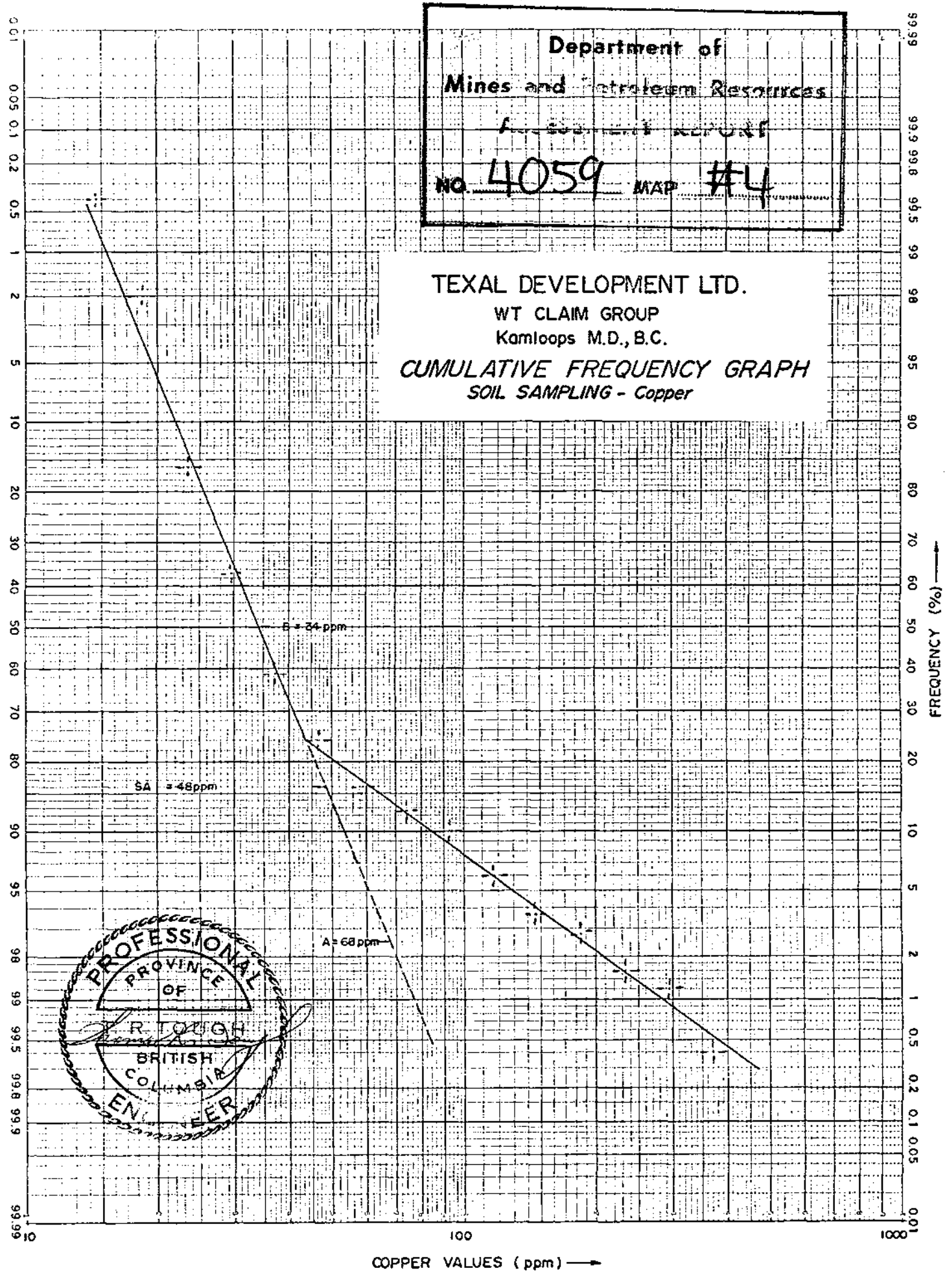
4 COAST INTRUSIONS Granite, granodiorite, gabbro

3 NICOLA GROUP
Greenstone, andesite, basalt, agglomerate, breccia

A Chlorite schist, amphibolite, gneissic intrusions

GEOLOGY

POT


Department of
Mines and Petroleum Resources
for Assessment Report
NO. 4059 MAP #4
TEXAL DEVELOPMENT LTD.
WT CLAIM GROUP
Kamloops M.D., B.C.
CUMULATIVE FREQUENCY GRAPH
SOIL SAMPLING - Copper
B = 24 ppm
SA = 48 ppm
A = 68 ppm
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
R. TOUGH
0.01 0.05 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
FREQUENCY (%)
10
100
1000
COPPER VALUES (ppm)

COST BREAKDOWN
CONTRACT NO. 72-105
SOIL SAMPLING SURVEY
WT CLAIM GROUP
WALLOPER LAKE AREA, KAMLOOPS M.D., B.C.

Wages

Geophysicist, H. Larson 6 days @ 125.00	750.00
Assistant - 6 days @ 60.00	360.00
Vehicle rental - 6 days @ 25.00	150.00
Survey supplies	75.00
Mapping	175.00
Geochemical interpretation & report	300.00
Engineering fees	200.00
Soil sample preparation and analysis - 249 samples @ 1.50	373.50
TOTAL	2,383.50

Declared before me at the City of Vancouver, in the Province of British Columbia, this 6th day of February 1973.

R. G. Wilson

G. Phillips

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.

4059 M-5

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J.R. TOUGH

TEXAL DEVELOPMENT LTD				
'WT' CLAIM GROUP KAMLOOPS M.D., British Columbia GEOCHEMICAL SURVEY – (DATA & CONTOURS) SOIL SAMPLING – COPPER				
GEOTRONICS SURVEYS LTD PDT DRAFTING SERVICES	SCALE 1" = 400'	DATE September / 72	JOB No. 72-101	SHEET No. 1