



MINTO MINING LTD.
REPORT ON A
GEOCHEMICAL SURVEY ON THE WET CLAIMS
CARMACKS, YUKON TERRITORY



by

F.J.L. Guardia, P. Eng

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of \$ 5119.65

D.B. Craig

Resident Geologist or
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act.

[Signature]

Commissioner of Yukon Territory

Date of Fieldwork : June 7 - July 4, 1972

Date of Report : December 1, 1972

ALRAE ENGINEERING LTD.

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**GEOCHEMICAL SURVEY ON THE WET CLAIMS,
CARMACKS, Y.T.**

INTRODUCTION

Minto Mining Ltd. are the beneficial owners of the Wet 1 - 33, 35 - 48 mineral claims, located some 18 miles northwest of Carmacks, Yukon Territory. The claims were located between June and September of 1971.

In the period June 7 - July 4, 1972, Alrae Engineering Ltd. of Vancouver, acting on the instructions of Minto Mining Ltd. conducted a program of line cutting and geochemical soil sampling on the property.

This report is intended to detail and evaluate the results of the geochemical survey and to make recommendations on further exploration of the property.

LOCATION, ACCESS AND TOPOGRAPHY

The Wet claims are located at Merrice Lake, latitude $62^{\circ} 17'$ and longitude $136^{\circ} 37'$, some eighteen miles northwest of Carmacks and a distance of 140 road miles from Whitehorse. The Whitehorse-Dawson City road, which here runs close to the Yukon River, lies approximately ten miles east of the property. The claims may be reached by approximately 21 miles on the gravel Crossing Creek Road and a further two miles on the bulldozed road to the Williams Creek property of the Dawson Range Joint Venture. The latter property, on which encouraging copper values have been found, lies three miles northwest of the Wet Claims.

The claims occupy part of the valley of Merrice Creek, which flows easterly across much of the property to a point north of Merrice Lake where it turns northerly to the Yukon River. The eastern edge of the claim group is at Merrice Lake. Elevations range from approximately 2400 ft. A.S.L. at Merrice Lake to 2800 ft. on the northern edge of the claims. Relief is moderate with the steepest slopes occupying the northern and southern claims. Much of the drainage occupies broad swampy

flats, but Merrice Creek becomes deeply incised in the eastern half of the claim group. Away from the swampy creek bottoms grass and scrub give way to spruce, poplar, jackpine and balsam.

CLAIMS

The Wet Claims are currently registered in the name of Anglo Western Minerals Ltd. Minto Mining Ltd. are the beneficial owners of the claims. 47 Wet claims are recorded in the Whitehorse Mining Division as follows:

<u>Claim Name</u>	<u>Record No.</u>	<u>Expiry Date</u>
Wet 1 - 15	Y 60843 - Y 60857	Dec. 15, 1972
Wet 16	Y 60907	"
Wet 17 - 21	Y 60858 - Y 60862	"
Wet 22 - 29	Y 60865 - Y 60872	"
Wet 30	Y 62168	"
Wet 31	Y 60863	"
Wet 32	Y 62169	"
Wet 33	Y 60864	"
Wet 35	Y 62170	"
Wet 36 - 43	Y 60873 - Y 60880	"
Wet 44 - 48	Y 62171 - Y 62175	"

GENERAL GEOLOGY

The general area around Williams Creek - Merrice Lake was geologically mapped in 1932 - 34 by H.S. Bostock on the Carmacks Sheet (G.S.C. Memoir 189). The area became the focus of staking and exploration attention in 1970 - 71 following the discovery of copper mineralization at Williams Creek by the Dawson Range Joint Venture.

The Williams Creek property is underlain by predominantly granodioritic rocks of the Carmacks Batholith. The granodiorites have variable amounts of biotite and hornblende. Colour in the rock varies from light grey to pink due to variations in the overall ratios between the mafic minerals and what appears to be introduced orthoclase and quartz. Although the overall composition in the area is that of granodiorite, hornblende diorite is prominent in the vicinity of the main mineralized zones. The mineralization occurs in steep dipping, northerly to northwesterly trending

zones of well foliated hornblende-biotite gneiss that bears close resemblance to the rocks of the contact zone between the batholith and the intruded andesitic rocks of the Mount Nansen Volcanics. The zones are probably roof pendants of the volcanics.

Mineralization at Williams Creek is confined to the narrow zones of hornblende biotite gneiss. Chalcopyrite, bornite, minor chalcocite and molybdenite are the chief minerals of value in the sulphide zone white hematite or magnetite with minor pyrite and pyrrhotite are usually present. Oxidation may extend to 800 ft. below surface resulting in malachite, azurite and limonite.

Only minor rock alteration is associated with the zones of mineralization. This is a very weak propylitic alteration resulting in minor alteration of hornblende to chlorite and plagioclase to sericite.

Similar intrusive rocks underlie the Wet Claims three miles southeast of Williams Creek. To date geological reconnaissance of available outcrop has not revealed gneissic zones but closer inspection of the geology is required.

GEOCHEMISTRY

A total of 1084 soil samples were collected from a grid of lines aligned east-west. Line spacing was 400 ft. with a centrally disposed baseline. Sample interval west of the baseline was 100 ft. and east of the baseline 200 ft. A zone some 1000 ft. wide on either side of the easterly flowing Merrice Creek was not sampled due to swampy ground.

The close spacing of samples on the lines was designed to detect narrow zones of mineralization such as those on the Williams Creek property.

Samples were taken wherever possible from below the fossil humus layer that occurs beneath 2 - 3 inches of greyish-white volcanic ash present below the recent surface humus layer. All samples were analyzed for copper by Fraser Laboratories Ltd. of North Vancouver. The -80 mesh fraction of the samples was digested in hot perch-

loric-nitric acid and the solution analyzed by atomic absorption using the Techtron AA5 unit. The results of the analyses may be summarized thus:

Total number of samples	1084
Mean background value	20 ppm
Threshold value	65 ppm
Peak values (14 samples)	100 - 325 ppm

A histogram showing distribution of copper in soils is presented overleaf and a map plotting location and value of each sample accompanies this report.

The survey succeeded in defining a number of small but often distinct anomalies scattered about the property. The strongest and better defined of these are located on the western fringe and the southwest corner of the claims. Despite their very limited extent these anomalous areas compare favourably with anomalies found adjacent to known mineralization on the Williams Creek ground, where 50 ppm copper is considered to be anomalous.

CONCLUSIONS AND RECOMMENDATIONS

The Wet Claims are located three miles southeast of the Williams Creek copper property. They are largely underlain by similar granodioritic rocks of the Car-macks Batholith but exposures are not plentiful.

The geochemical survey has indicated a number of small but distinct anomalies that are generally comparable with the geochemical expression of the Williams Creek deposits. They require further investigation.

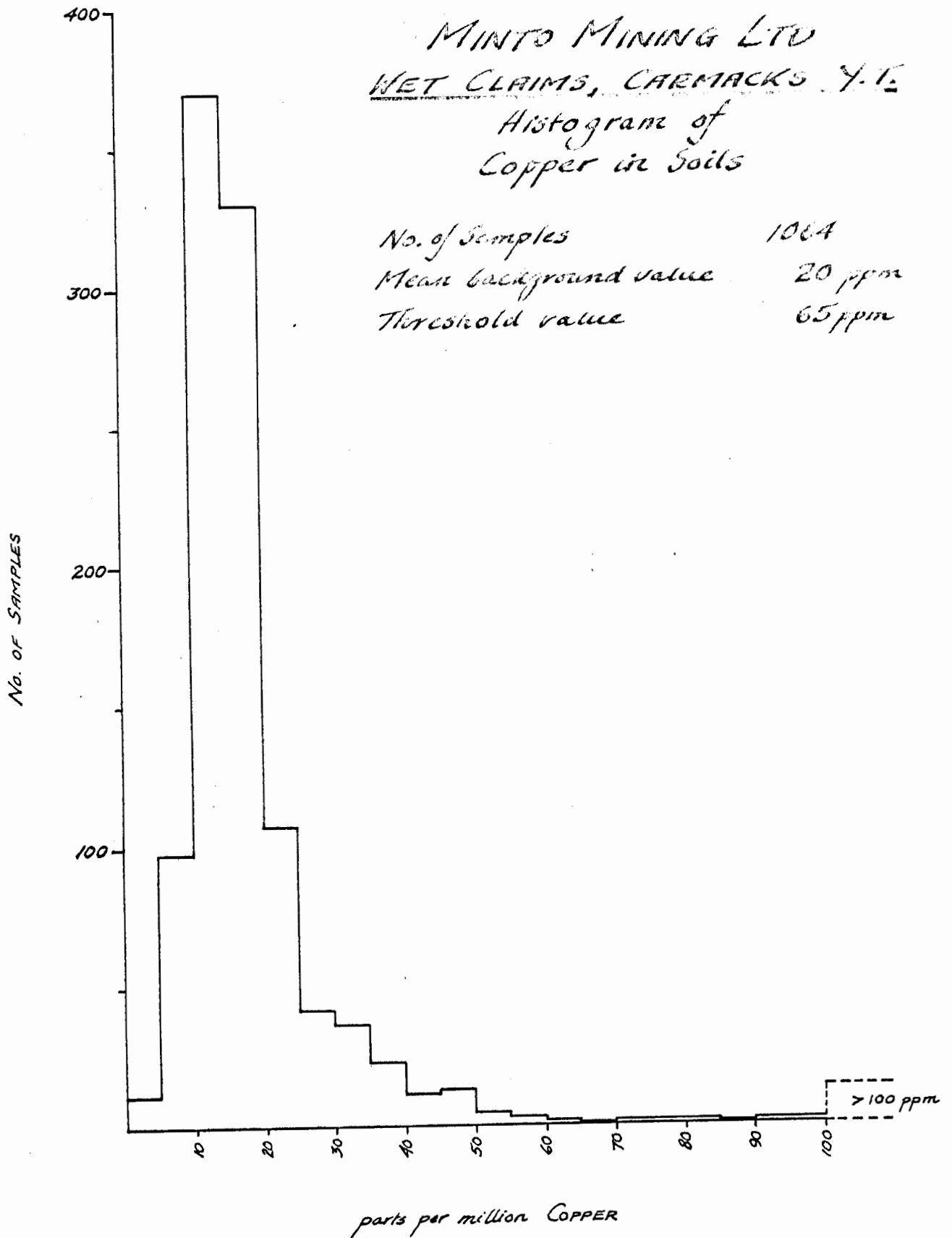
The only satisfactory geophysical mode of exploration used at Williams Creek was the electromagnetic survey using the Ronka EM-16 unit. The method was successful in detecting the linear zones of gneissic rocks in which mineralization is located. Neither the IP or magnetic methods were successful in defining mineralized zones.

It is recommended that EM-16 be applied to those areas having geochemical

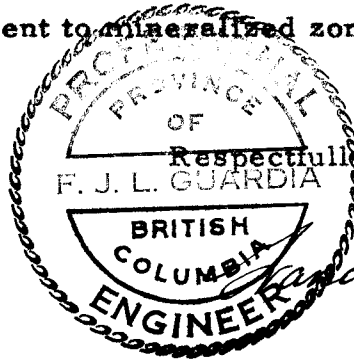
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WET CLAIMS, CARMACKS Y.T.
Histogram of
Copper in Soils

No. of Samples 1064
Mean background value 20 ppm
Threshold value 65 ppm



anomalies and that outcrops should be examined in detail for the lithological and alteration features seen adjacent to mineralized zones at Williams Creek.

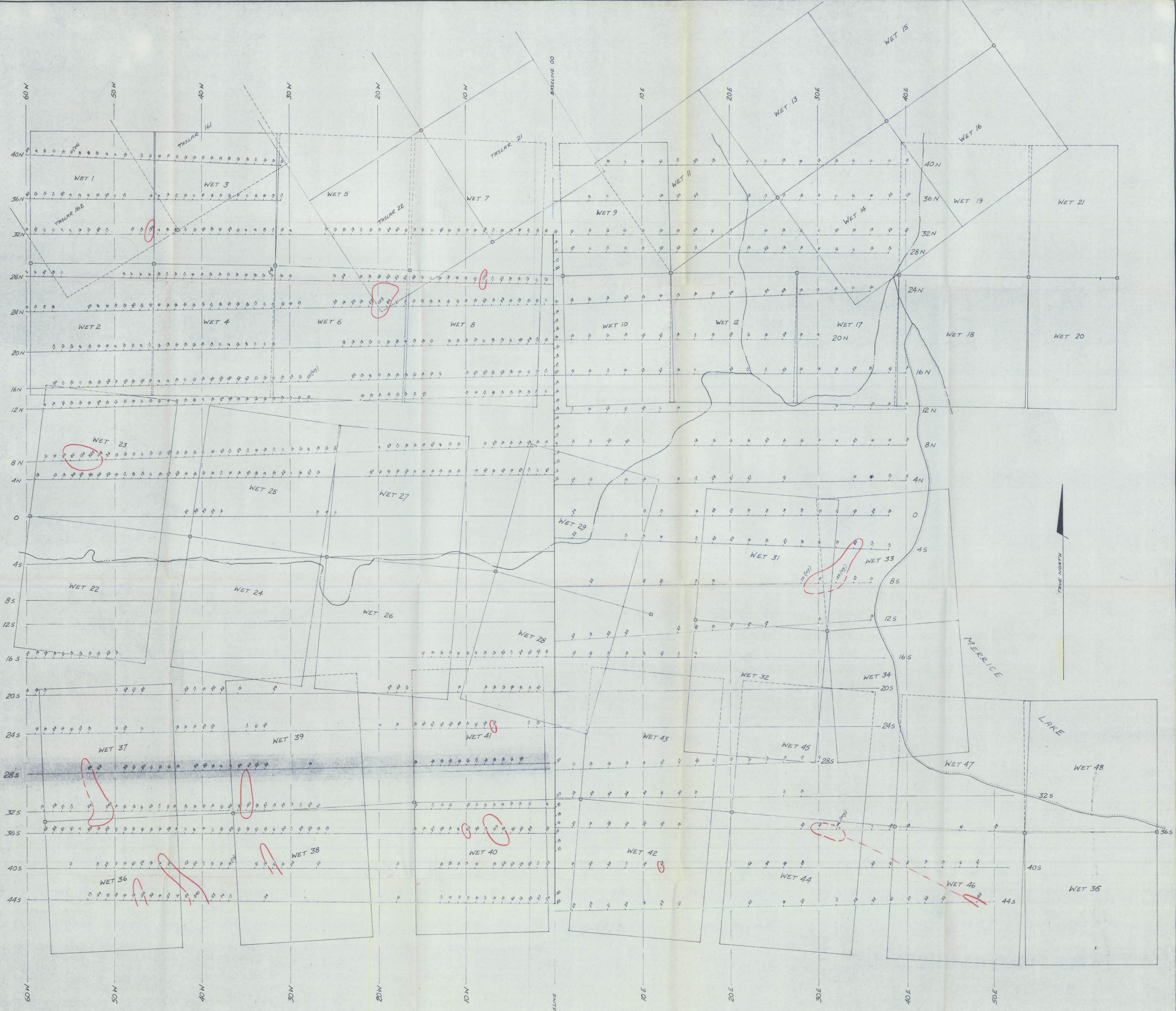


Respectfully submitted,
F. J. L. GUARDIA

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LEGEND

- 25 — copper value in ppm
- (100) — organic sample
- (10) — two samples submitted for same location



ALRAE ENGINEERING LTD. CONSULTING ENGINEERS & GEOLOGISTS - VANCOUVER, CANADA	
MINTO MINING LTD.	
WET CLAIMS COPPER IN SOILS	
SCALE: 1" = 400'	DESIGNED: A.G.
DATE: JULY, 1972	CHECKED: A.G.
REVISED:	MAP NO: