



GEOLOGICAL AND GEOCHEMICAL SURVEY REPORT

ON THE

ORE MINERAL CLAIMS

of

HIGHLAND MERCURY MINES LTD. (NPL).

SUMMIT LAKE, YUKON TERRITORY



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 \$13,228.00

D.B. Craig

Resident Geologist or
~~Resident Mining Engineer~~

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

November 8, 1973
Vancouver, B.C.

D.P. Taylor

Commissioner of Yukon Territory D.P. Taylor, M.Sc.,
D.I.C.

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MAPS

FREQUENCY DISTRIBUTION GRAPHS (Zinc)

PROPERTY LOCATION MAP

1" = 80 mi.,

4 mi., 4000 ft

GEOLOGY MAP

1" = 1000 feet

GEOCHEMICAL SURVEY MAP

1" = 1000 feet

Lead (ppm) values (1)

Zinc (ppm) values (1), Contours (1)

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INTRODUCTION

The ORE claim group was staked in February, 1973. The property was subsequently acquired by Highland Mercury Mines Ltd. (NPL). The claims are at Summit Lake, close to Howard Pass where Canex-Placer announced the discovery of a major lead-zinc deposit in late 1972.

During the summer of 1973 the western portion of the claim group had a soil sample survey conducted on it by personnel of Torwest Resources Ltd.; the eastern part of the group was sampled by personnel of Agilis Engineering Ltd. Geological mapping was performed by Dr. A.M. deQuadros, geologist, of Agilis Engineering Ltd. All work was done under the supervision of the writer.

LOCATION AND ACCESS

The ORE mineral claim group lies on the west side of Summit Lake, crosses the south side of the Lake, and extends onto the south eastern shore. Summit Lake is in the Yukon Territory 158 miles north of Watson Lake, Y.T.

The property is located:

62° 21' N; 129° 23' W

Access to the property is by fixed-wing float or ski-equipped aircraft to Summit Lake from Watson Lake or Ross River.

PHYSIOGRAPHY AND CLIMATE

Relief on the property is flat to moderate. Elevations a.s.l. vary from 3,890 feet at the lake to just over 5,000 feet. The area in the valley west of Summit Lake is swampy and generally unworkable.

West of the lake three northwesterly trending ridges are separated by generally moderately steep creek valleys. The claims east of the lake lie on a fairly steep mountainside.

Most of the claim area is covered by light timber and moderate to dense brush. Above tree line at 4800 feet caribou moss and low brush are found.

The climate in this area is very cold in winter and mild in the summer. The snow-free season generally lasts from mid-June to late September. Summit Lake is frozen generally from late October to mid-May.

PROPERTY

The ORE group was staked by A. Harman in February, 1973 and subsequently acquired by Highland Mercury Mines Ltd (NPL). The claims are located and recorded in the Watson Lake Mining District of the Yukon Territory. The property is comprised of:

Claims

ORE 1-66

Record Numbers

Y72534 - Y72597

The claim tags were affixed to the appropriate posts during late August, 1973.

REGIONAL GEOLOGY

The regional geological map for this area is the Geological Survey of Canada Map 8-1967, Nahanni, 1 inch to 4 mile sheet.

The basement in this area is of Cambrian and earlier vari-coloured slate and phyllite with minor siltstone and quartzite.

This is (?) unconformably overlain by Upper Cambrian and (?) Ordovician limestone, dolomitic siltstone and silty dolomite, with minor basal silty dolomite and quartzite. This in turn is unconformably overlain by Devonian and (?) Mississippian black shale and argillite, minor brown sandstone and siltstone; and banded chert and chert pebble conglomerate.

In some areas the unconformity at the base of the Devonian contains Upper Ordovician and Silurian black graptolitic shale and argillaceous limestone with minor black chert, cherty argillite, and dolomite.

It is in the vicinity of this last unit that the Canex-Placer lead-zinc deposit, 10 miles north-northwest of Summit Lake is located.

There is moderate to intense northwesterly striking folding, with associated strong cleavage, in the area.

PROPERTY GEOLOGY

The geology of the ORE group is relatively simple. The property lies on the northeasterly limb of a northwesterly trending anticline. The anticline is a fairly open structure, with the limbs dipping at about 45-50°.

Except for one small outcrop of calcareous shale on the southwest corner of Summit Lake, all outcrops on the property consist of Cambrian wavy banded limestone. The limestone is a dark grey, fine grained non-fossiliferous rock which in some local areas grades to sub-argillaceous. It is characterised by very irregular thin bedding parallel to cleavage strikes.

No outcrop was encountered on the east side of the lake but projected geology from the YUK mineral claimgroup indicates the area to be underlain by calcareous and siliceous shale.

The wavy banded limestone sequence, on a regional basis, is known to be below the economically favourable horizons in Howard Pass.

No sulphide mineralization was noted during field mapping except occasional very minor occurrences of widely disseminated pyrite.

GEOCHEMICAL SURVEY

A geochemical survey was conducted on the property on east-west lines 800 feet apart with sample stations every 200 feet along the lines.

The western claims were sampled and gridded by personnel of Torwest Resources and the eastern claims by personnel of Agilis

Engineering. All sampling was done using mattocks and samples were taken from 6-10" depth at each station wherever possible.

ANALYSIS

The western grid samples were shipped to the laboratory of Barringer Research in Whitehorse, Y.T. for ppm analysis of lead and zinc content. A minus 80 mesh fraction was taken from each sample and digested in hot HClO_4 . Quantitative analysis for ppm lead and zinc content was performed by atomic absorption methods. Lead results were corrected for calcium interference.

The eastern grid samples were shipped to Core Laboratories Ltd 325 Howe Street, Vancouver, B.C.

A minus 80 mesh fraction was taken from each sample and digested for 2½ hours in hot nitric acid. Quantitative analysis was performed by atomic absorption methods.

RESULTS

Two sets of results have been obtained from the two separate grids. The zinc results correlate reasonably well, but lead results correlate very poorly.

This is believed to be due to an analytical error on behalf of Barringer Research as, unless particular care is taken, lead will precipitate in HClO_4 and the solutions taken for atomic absorption will be lead poor.

The sets of results were separately statistically analysed by plotting cumulative percent frequency on arithmetic probability paper. No curve breaks could be found on the western grid

lead results, and only a background definition could be found on the eastern grid results.

The result statistics are:

WESTERN GRID

	<u>Range ppm</u>	<u>Background ppm</u>	<u>Anomalous ppm</u>
Pb	1 - 18	-	-
Zn	3 - 315	92	170

EASTERN GRID

Pb	1 - 106	-	-
Zn	1 - 350	122	190

Results were received for 145 samples on the western grid and 386 samples on the eastern grid.

INTERPRETATION

None of the sample data analysed to date indicates anything of interest in terms of the regional geochemical setting. Although statistically anomalous zones have been defined, they are not considered to be of economic interest in view of the regional background in the Summit Lake-Howard Pass Area.

The property is underlain by a massive series of Upper Cambrian and (?) Ordovician wavy banded limestone with minor exposures of overlying calc shale. This sequence is believed to be too stratigraphically low to be favourable for lead zinc mineralization such as is found in Howard Pass.

CONCLUSIONS

The ORE group is located in a favourable area in the Summit Lake-Howard Pass area. The property is underlain by what are considered to be strata too low in the stratigraphic sequence to be of immediate economic interest.

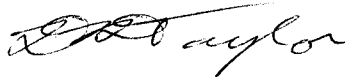
The reconnaissance survey has indicated no areas of encouragement, on a regional scale for prospects of finding significant lead or zinc deposits on the ORE group.

RECOMMENDATIONS


In view of the negative results obtained in both geological and geochemical surveys conducted to date, no further expenditure of resources on the ORE group is recommended at this time.

Should the Summit Lake area develop into a major mining camp, the ORE mineral claim area may possibly have some strategic value, this is an unlikely consideration due to the possibility of a road being built into the area.

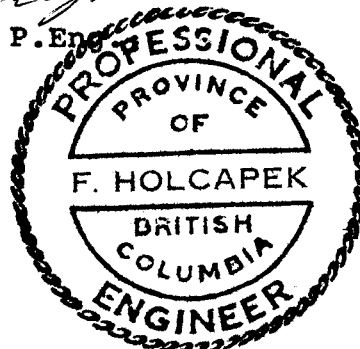
Respectfully submitted,



D. P. Taylor, M.Sc., D.I.C.

Endorsed by:  F. Holcapek, P.Eng.

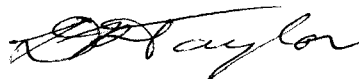
November 8, 1973



CERTIFICATION

I, David Pelham Taylor, of Vancouver, British Columbia, do hereby certify that:

1. I am an exploration geologist, residing at 2097 West 6th Avenue, Vancouver, British Columbia.
2. I am a graduate of the Royal School of Mines, London University (M.Sc., D.I.C. 1971).
3. I have practised as an exploration geologist in British Columbia for five years.
4. I am registered as an Engineer-in-Training with The Association of Professional Engineers of the Province of British Columbia.
5. The work subject of this report was conducted by myself and a crew under my supervision.



D. P. Taylor, M.Sc., D.I.C.

November 9, 1973
Vancouver, B.C.

STATEMENT OF EXPLORATION EXPENDITURES
ON THE ORE 1-36 AND 39-66
MINERAL CLAIMS OF HIGHLAND MERCURY MINES LIMITED
SITUATED IN THE SUMMIT LAKE AREA, YUKON TERRITORY

Consultants fees	\$ 2,286.00
Field supervision	3,654.00
Ground Transportation	1,042.00
Mapping and Prospecting	923.00
Geological Survey	1,589.00
Geochemical Survey	804.00
Sampling and Assays	882.00
Camp and Supplies	222.00
Air Transportation	1,420.00
Administration	<u>406.00</u>
TOTAL	\$13,228.00

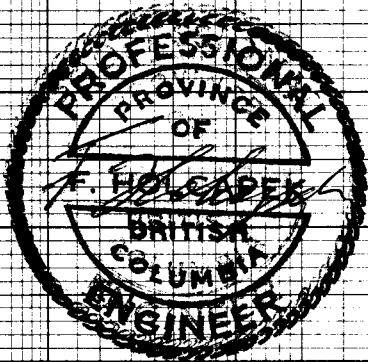
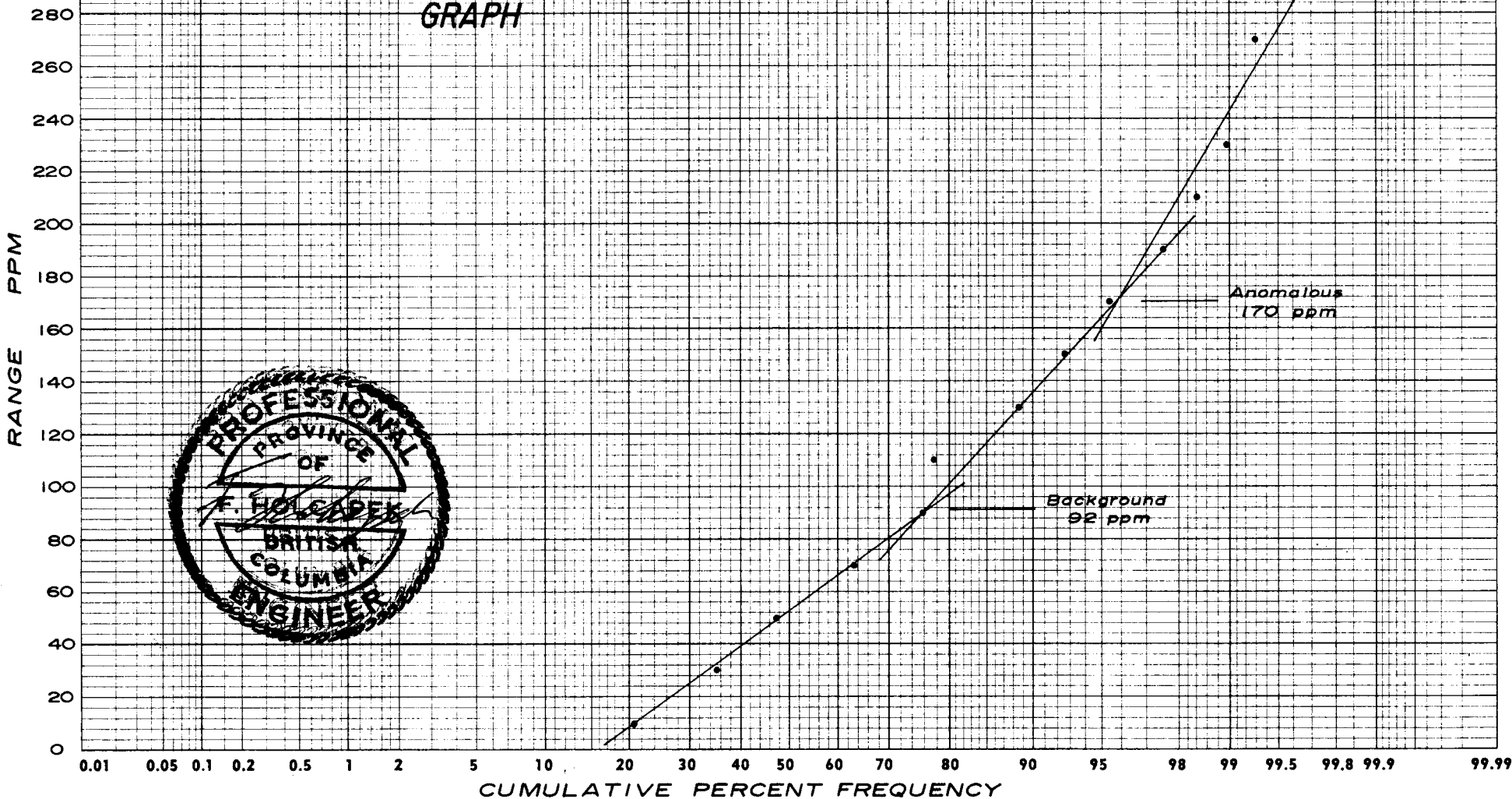
Names and Addresses of persons employed in performing this work.

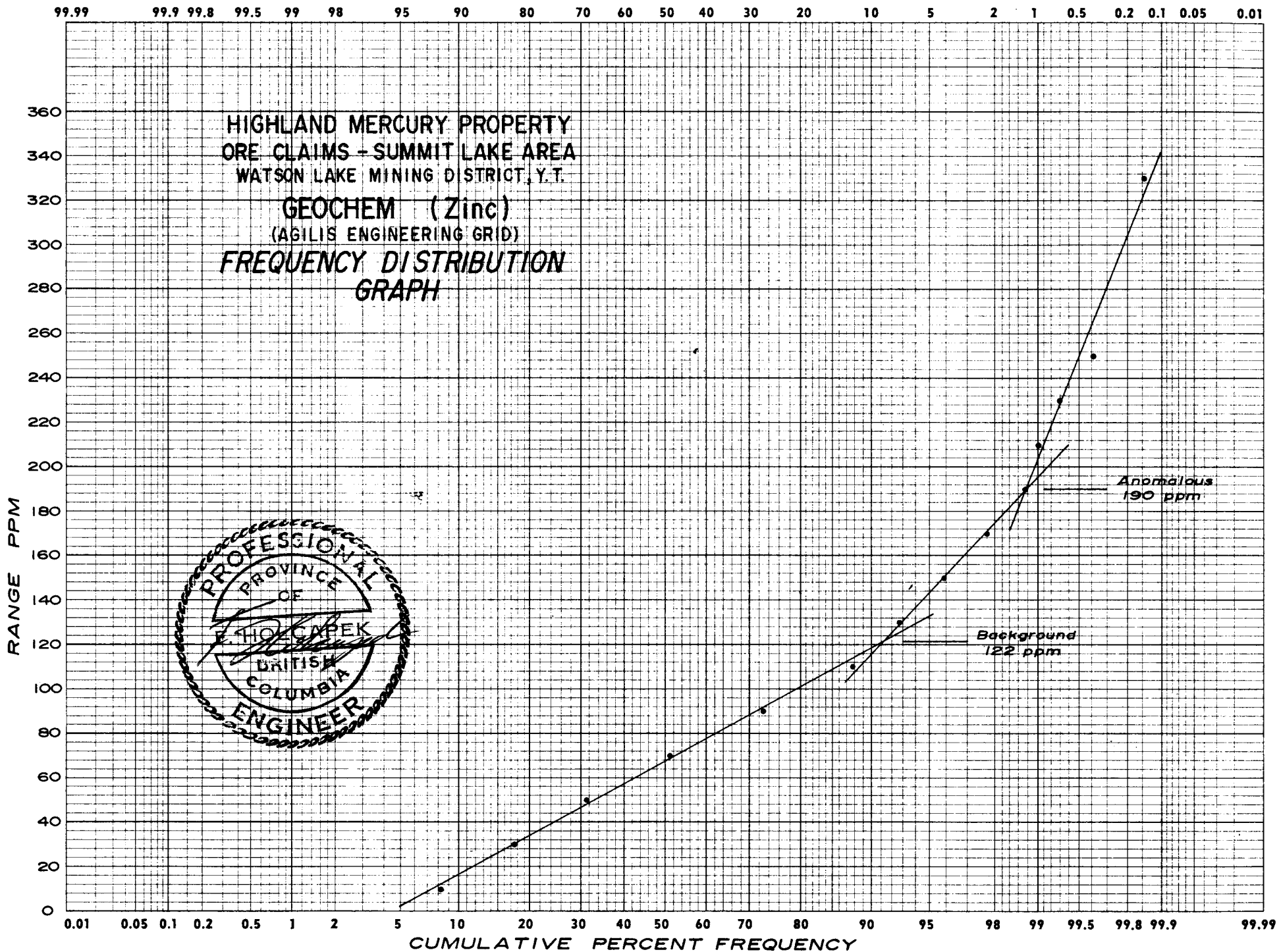
H.H. Waller -	Richmond, B.C.
W.F. Petrie -	Merritt, B.C.
H. Hatchard -	Merritt, B.C.
R. Grabowski -	Merritt, B.C.
K. Folstrom -	Vancouver, B.C.
F. Holcapek -	Vancouver, B.C.
D. Taylor -	Vancouver, B.C.
B. Talbot -	Vancouver, B.C.
M. de Quadros -	Vancouver, B.C.
B. Muirhead -	Vancouver, B.C.
R. Hillard -	Vancouver, B.C.
J. LaPonce -	Vancouver, B.C.
W. Carlick -	Vancouver, B.C.

William F. Petrie

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

HIGHLAND MERCURY PROPERTY
 ORE CLAIMS - SUMMIT LAKE AREA
 WATSON LAKE MINING DISTRICT, Y.T.
 GEOCHEM (Zinc)
 (TORWEST RESOURCES GRID)
 FREQUENCY DISTRIBUTION
 GRAPH

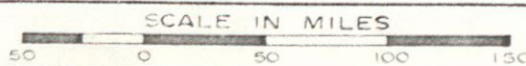




YUKON TERRITORY

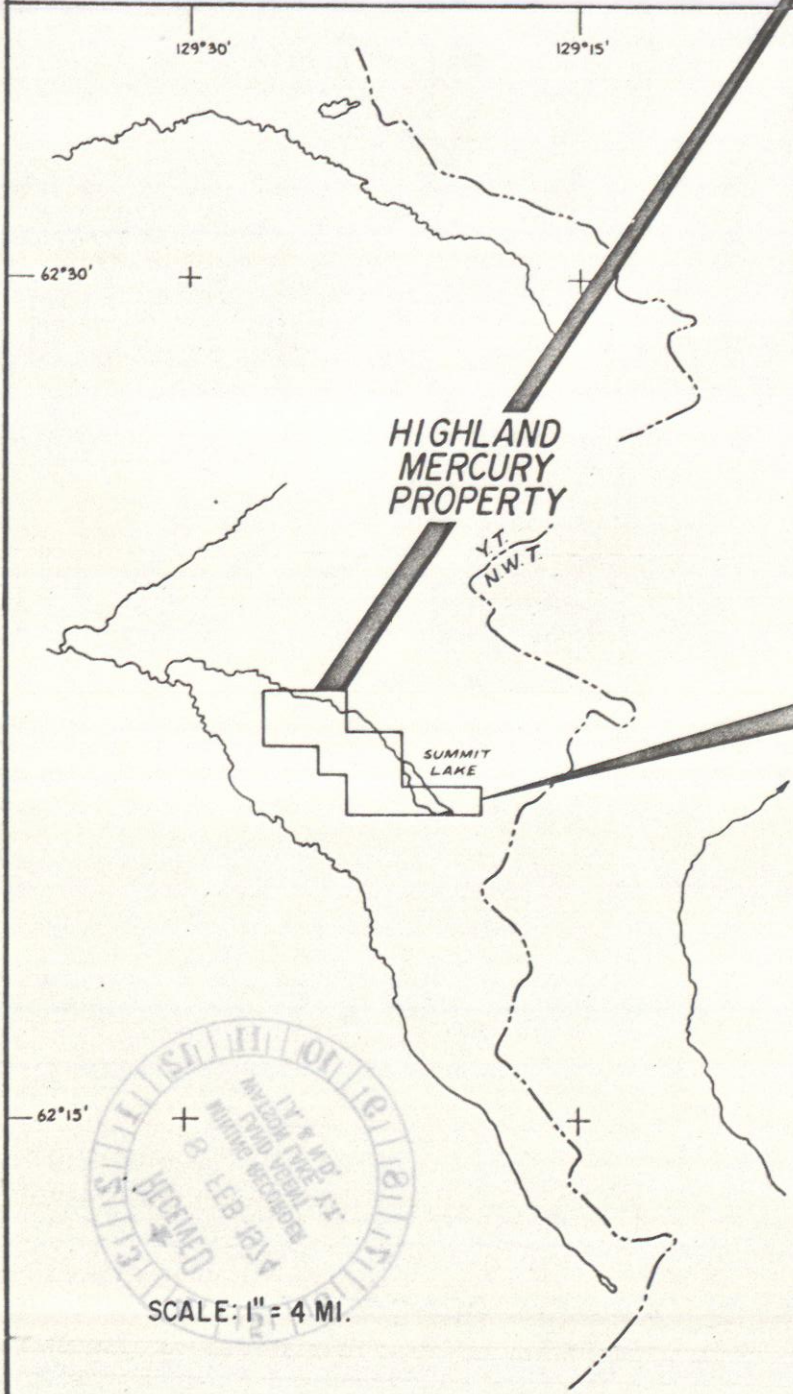
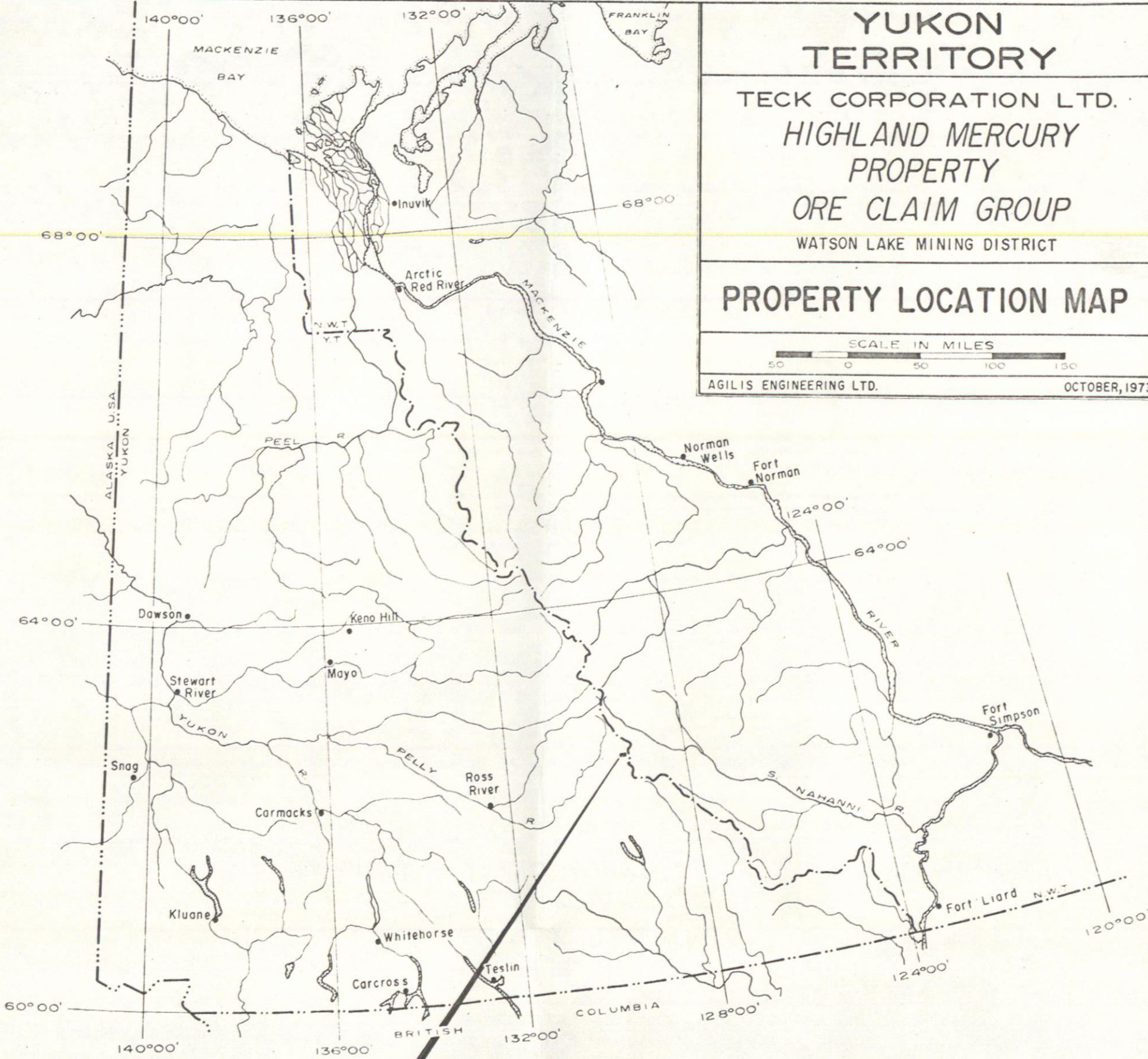
TECK CORPORATION LTD.
 HIGHLAND MERCURY
 PROPERTY
 ORE CLAIM GROUP
 WATSON LAKE MINING DISTRICT

PROPERTY LOCATION MAP



AGILIS ENGINEERING LTD.

OCTOBER, 1973



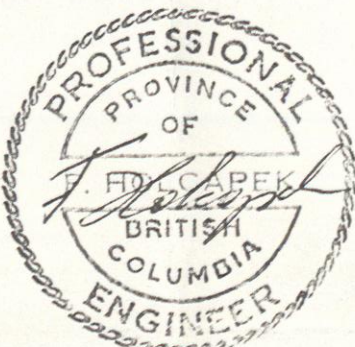
HIGHLAND
 MERCURY
 PROPERTY

Y.T.
 N.W.T.

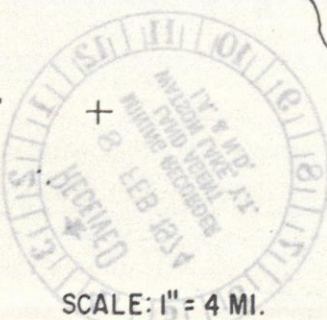
SUMMIT
 LAKE

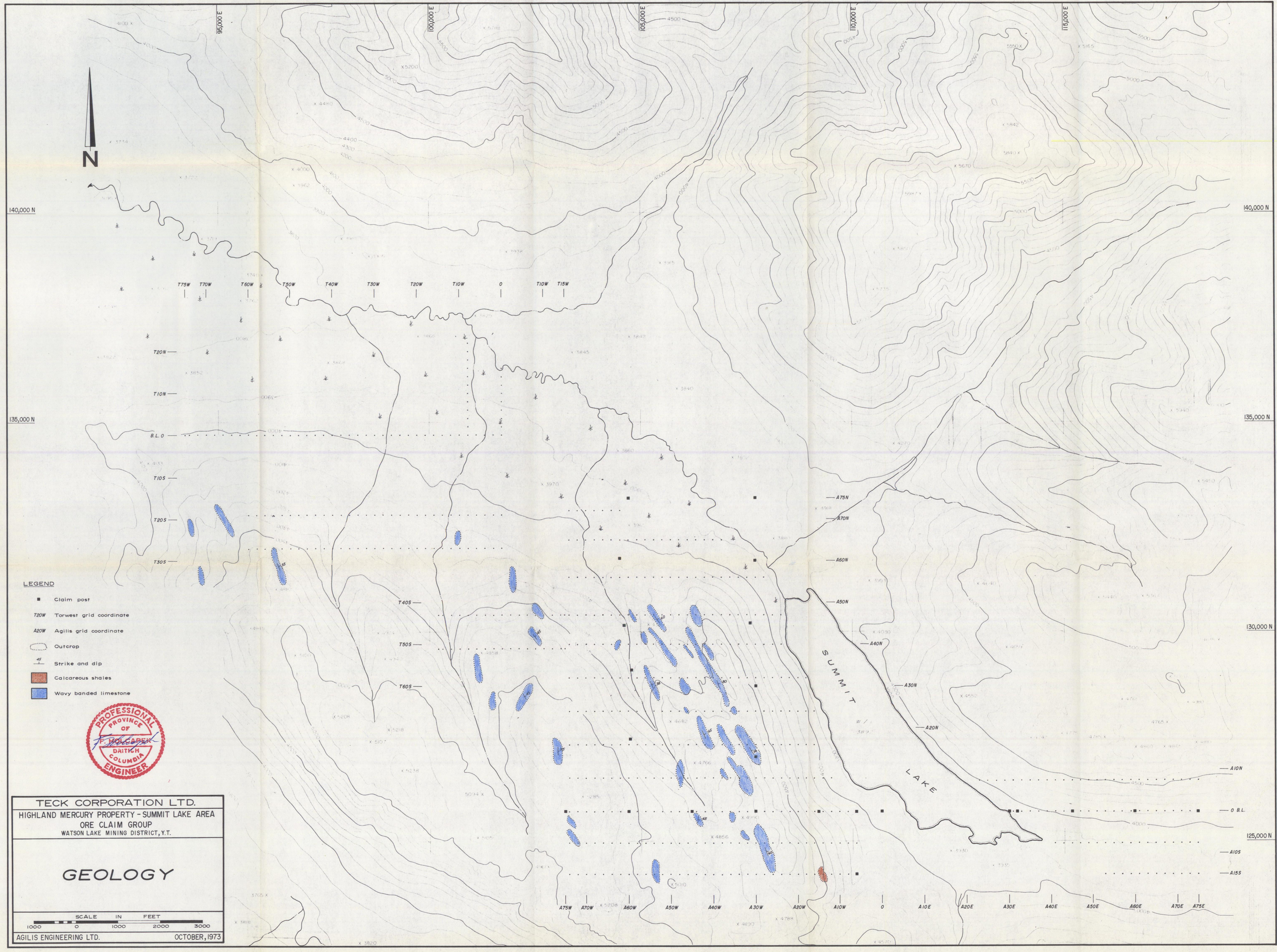
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ORE 63	ORE 64	ORE 55	ORE 56	ORE 47	ORE 48				
ORE 61	ORE 62	ORE 53	ORE 54	ORE 45	ORE 46				
ORE 59	ORE 60	ORE 51	ORE 52	ORE 43	ORE 44	ORE 35	ORE 36	ORE 23	ORE 24
				ORE 41	ORE 42	ORE 33	ORE 34	ORE 21	ORE 22
				ORE 39	ORE 40	ORE 31	ORE 32	ORE 19	ORE 20
				ORE 29	ORE 30	ORE 17	ORE 18		
				ORE 27	ORE 28	ORE 15	ORE 16	ORE 12	ORE 10
				ORE 25	ORE 26	ORE 13	ORE 14	ORE 11	ORE 9
						ORE 8	ORE 6	ORE 4	ORE 2
						ORE 7	ORE 5	ORE 3	ORE 1

Summit
 Lake



SCALE: 1" = 4000 FT.





- LEGEND**
- Claim post
 - T20W Torwest grid coordinate
 - A20W Agilis grid coordinate
 - Outcrop
 - Strike and dip
 - Calcareous shales
 - Wavy banded limestone



TECK CORPORATION LTD.
 HIGHLAND MERCURY PROPERTY - SUMMIT LAKE AREA
 ORE CLAIM GROUP
 WATSON LAKE MINING DISTRICT, Y.T.

GEOLOGY

SCALE IN FEET
 1000 0 1000 2000 3000

AGILIS ENGINEERING LTD. OCTOBER, 1973

140,000 N

135,000 N

140,000 N

135,000 N

130,000 N

125,000 N

T75W T70W T60W T50W T40W T30W T20W T10W 0 T10W T15W

T20N

T10N

T10S

T20S

T30S

T40S

T50S

T60S

A75N

A70N

A60N

A50N

A40N

A30N

A20N

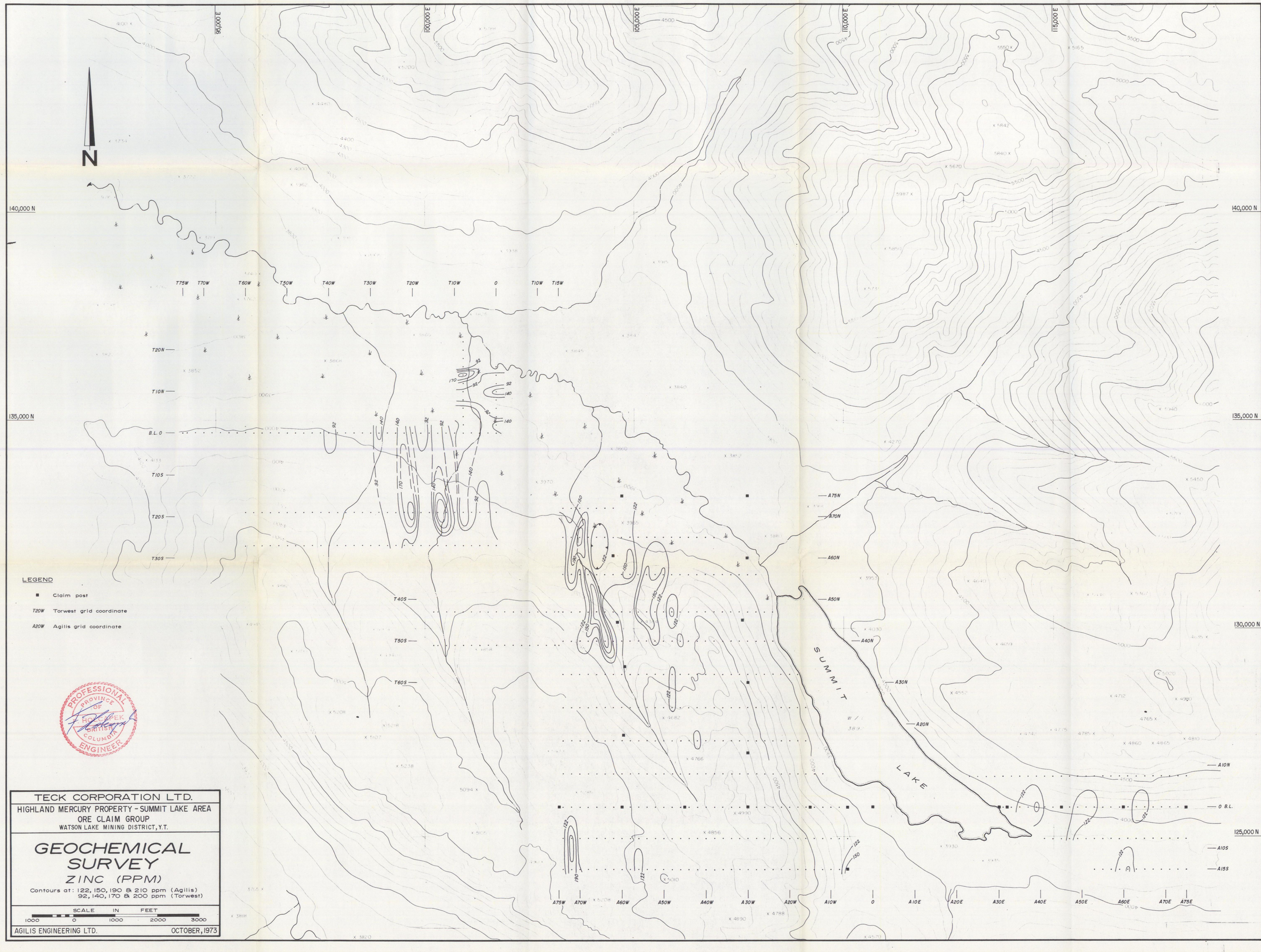
A10N

0 B.L.

A10S

A15S

A75W A70W A60W A50W A40W A30W A20W A10W 0 A10E A20E A30E A40E A50E A60E A70E A75E



- LEGEND**
- Claim post
 - T20W Torwest grid coordinate
 - A20W Agilis grid coordinate



TECK CORPORATION LTD.
 HIGHLAND MERCURY PROPERTY - SUMMIT LAKE AREA
 ORE CLAIM GROUP
 WATSON LAKE MINING DISTRICT, Y.T.

GEOCHEMICAL SURVEY
 ZINC (PPM)

Contours at: 122, 150, 190 & 210 ppm (Agilis)
 92, 140, 170 & 200 ppm (Torwest)

SCALE IN FEET
 1000 0 1000 2000 3000

AGILIS ENGINEERING LTD. OCTOBER, 1973

