

# 3751

HART RIVER MINES LTD. (N.P.L.)

Report on a GEOCHEMICAL SURVEY  
on the  
LUCKY STRIKE, SAM, MP, RR AND S CLAIMS  
WALHACHIN, KAMLOOPS M.D., B.C.  
50°120° NW and 50°121° NE

ALRAE ENGINEERING LTD.  
F.J.L. GUARDIA, P. ENG.

Date of Fieldwork: April 26 - June 16, 1972

Date of report: July 14, 1972

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT

NO. **3751** MAP

TO PROTECT OUR CLIENTS, THE PUBLIC AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS AND AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS AND EXTRACTS FROM OUR REPORTS MUST RECEIVE OUR WRITTEN APPROVAL.

ALRAE ENGINEERING LTD.  
VANCOUVER, B.C.  
ENGINEERS & GEOLOGISTS

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION .....	1
LOCATION, ACCESS & TOPOGRAPHY .....	1
PREVIOUS WORK .....	2
CLAIMS .....	4
GEOLOGY .....	3
GEOCHEMICAL SURVEY .....	4
COSTS .....	5
CONCLUSIONS .....	0

- #1 Walthachin Property - Copper in soils
- #2 Walthachin Property - Zinc in soils
- #3 Walthachin Property - Preliminary Geochemical Map

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## INTRODUCTION

The Lucky Strike, Sam, MP, RR and S Claims lie surrounding the settlement of Wainachin, which is situated on the south bank of the Thompson River, some 13 air miles east of Ashcroft.

In 1970 disseminated copper mineralization was found in Nicola Group volcanics and sediments exposed in a ballast quarry operated by the Canadian Pacific Railway. The mineralization consists principally of isolated blebs of chalcopyrite and bornite with magnetite in silicified and skarny alteration zones. Locally minor stringers and blebs of sphalerite mineralization have been found.

In the period April 26th to June 16th, 1972, Alrae Engineering Ltd., acting on behalf of Hart River Mines Ltd. (H.R.M.), conducted a program of soil sampling on that part of the claims that is directly underlain by Nicola Group rocks. A total of 239 samples, representing 9 miles of line were collected and analysed for copper and zinc.

This report is intended to summarize the results of the geochemical survey and to support a claim for assessment work filed on a number of the claims.

## LOCATION, ACCESS AND TOPOGRAPHY

The copper-zinc showings are located in and around a ballast quarry cut into the hillside immediately south of the CPR tracks at Wainachin, a village located on the south bank of the Thompson River some 13 air miles east of Ashcroft and 4.5 miles west of the western extremity of Kamloops Lake. Wainachin is reached by a four-mile gravel road that leaves the Trans-Canada Highway 16 miles east of Cache Creek Junction. In dry weather much of the claim group is accessible by car or jeep.

Elevations on the property range from 1100 ft. at the Thompson River to over 3,000 ft. in the southwestern corner of the claims. The greater part of the claim group is covered by semi-arid grassland with isolated pine and low scrub in the creek gullies, but increasingly heavy pine, spruce and fir cover is encountered at higher elevations in the southern portions of the property.

The area covered by the geochemical survey is devoid of trees and consists of a generally thin soil cover supporting sagebrush, grasses and cacti between scattered rock outcrops.

#### PREVIOUS WORK

It is believed the showings were first discovered in 1970 and that no exploration was done on the claims area prior to 1971, when the central group of claims was partially explored under an option held by Fort Vermilion Resources Ltd. This work consisted of geological mapping on a scale of 1" = 500', a magnetometer survey and geochemical soil sampling on a 500' x 200' grid. The work was conducted by Mr. Ken Spraggs of Fawley Geological Engineering Ltd.

#### CLAIMS

There are 152 located claims on the property of Hart River Mines Ltd. at Walhachin. The claims are recorded in the Kamloops M.D. as follows: -

<u>Claim Name</u>	<u>Record No.</u>	<u>Anniversary Date</u>	<u>Owner</u>
Lucky Strike 1 - 4	89864 - 89867	June 30	Paul Andreeff
Sam 5 - 12	89868 - 89875	June 30	"
Sam 15 - 21	89878 - 89884	June 30	"
Sam 23 - 24	89886 - 89887	June 30	"
Sam 25 - 26	90301 - 90302	July 23	"
Sam 29 - 30	90305 - 90306	July 23	"
Sam 31 - 32	90559 - 90560	August 6	Murray Swetz

<u>Claim Name</u>	<u>Record No.</u>	<u>Anniversary Date</u>	<u>Owner</u>
Sam 33 - 34	90643 - 90644	August 12	Murray Swetz
Sam 41 - 42	90651 - 90652	August 12	"
MP 1	90561	August 7	"
RR 2 - 20	103658 - 103676	January 31	Hart River Mines
RR 21 - 42	104836 - 104857	February 14	"
RR 43 - 81	111640 - 111678	April 21	"
S 1 - 40	104858 - 104897	February 14	"

Costs of the current geochemical survey are being applied as assessment work on the Lucky Strike 1 - 4, Sam 5 - 12, 15 - 21 and Sam 23 claims.

#### GEOLOGY

The showings in the ballast quarry consist of fine disseminations, blebs and fracture coatings of chalcopyrite and bornite, with minor sphalerite locally, generally associated with magnetite and hematite. Mineralization is associated with marked alteration zones in volcanics, related pyroclastics, and sediments of the Nicola Group. Alteration is marked by an introduction of epidote, garnet, magnetite, hematite and calcite with some degree of silicification.

Traces of malachite stain have been found up to 1600 ft. east of the quarry and 4000 ft. west of the quarry., To the west of the quarry is found a large zone of skarn alteration in a predominantly sedimentary sequence within the Nicola. This zone is marked by several anomalously high zinc samples taken in the current survey.

The regional geology of the area is shown on maps accompanying G.S.C. Memoirs 262 (Ashcroft) and 249 (Nicola). These maps indicated that the Nicola rocks are exposed over the central and northern claims of the group with the exception of a band covered by alluvial deposits on either side of the Thompson River. Some 1200 ft. south of the

quarry and overlying the Nicola Group is a series of conglomerates interbedded with sandstone and shale that is believed to be Mesozoic or Tertiary in age. Overlying these sediments in the most southerly part of the claim group are flat-lying andesite and basalt flows of the Tertiary Kamloops Group.

A small outcrop of medium-grained, fresh diorite is found on Line O x 27 W on the geochemical grid. The intrusive invades the Nicola Group but is overlain by the conglomerate series. The G.S.C. publications suggest this diorite to be continuous with the Guichon Batholith and representing one of its northerly extensions under a cover of Mesozoic and Tertiary rocks.

#### GEOCHEMICAL SURVEY

A total of 239 soil samples, collected from immediately below the thin organic surface soils, were taken from localities noted on the grid on the accompanying map. All samples were analysed for copper and zinc by Fraser Laboratories Ltd. of North Vancouver using the Techtron atomic absorption spectrophotometer. 39 samples were further analysed for silver content.

The small number of samples and irregularities in line spacing and distribution make statistical treatment of results inappropriate. However, histograms to show frequency distribution of copper and zinc values are presented overleaf. By inspection values in excess of 200 ppm zinc and 120 ppm copper are considered to be anomalous. Only two samples showed anomalous values for copper in the soils, but 20 samples showed anomalous zinc content.

The anomalous zinc values are located in three district zones lying between 400 ft. and 3000 ft. west of the quarry (see map). Two of the zones are more or less coincident with zones of intense silicification and skarn alteration in rocks that appear to have been largely sedimentary in origin, while the third which lies furthest from the quarry and in proximity to the contact zone of the diorite,

is underlain by hard, flinty siliceous rocks that may be original cherty sediments or may represent the product of silicification and hornfelsing of the contact zone. Detailed mapping in the entire zinc zone is required.

One sample taken at Line 6N + 24W returned a value in excess of 4000 ppm. It lies adjacent to an outcrop in which banding imparted by variable degrees of alteration and mineralization lies parallel to what is apparently northerly striking and near vertical bedding. A sample subsequently taken from the outcrop, which showed abundant hematite but no discernable zinc minerals returned an assay of 1.01% zinc and 0.98 oz/ton silver.

Samples from lines 2N, 6N were checked for silver content and indicated a generally close relationship between zinc and silver.

#### COSTS

Costs of the geochemical survey are as follows: -

#### WAGES . . .

Abe Wall - lines and sampling April 30th to May 4th, May 25th	\$ 404.08	
James Randa - lines and sampling April 30th to May 4th	398.54	
R.G. Jury - crew organization, map preparation	250.00	
F. Guardia - report and maps, anomaly examination	850.00	
		<hr/>
		\$1,902.62

#### ASSAYS . . .

TOTAL . . .

468.33  
\$2,370.67

CONCLUSIONS

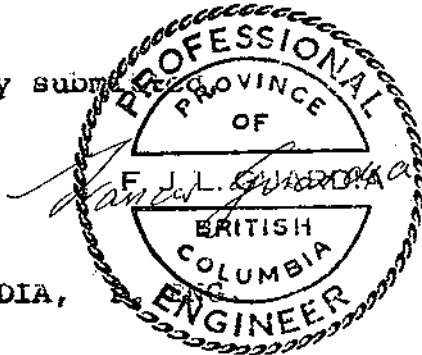
239 soil samples were collected over 9 miles of line in the vicinity of the Wainachin ballast quarry. The quarry has exposed copper and zinc mineralization in altered volcanic and sedimentary rocks of the Nicola Group. Whereas topography precluded sampling in the immediate area of the quarry it is apparent that the scattered visible mineralization has no marked response in the soils analysed from that area. However, three well defined zones west of the quarry have given a strong response in zinc values in the soils. Subsequent examination of these zones has shown marked skarn alteration in a predominantly sedimentary sequence within the Nicola Group. One surface sample taken from a rock outcrop has yielded an assay of over 1% zinc.

It is concluded that the strength of the geochemical response and the size of the skarn zones to which they are closely related call for further investigation.

Trenching with a bulldozer would rapidly enable thorough examination and sampling of the zones but is not recommended at this stage on open ranchland.

The close association of magnetite with the mineralization in the quarry suggests that detailed magnetometry in the area of the skarn is the next step to be taken, together with detailed geological mapping.

Respectfully submitted,



F.J.L. GUARDIA,

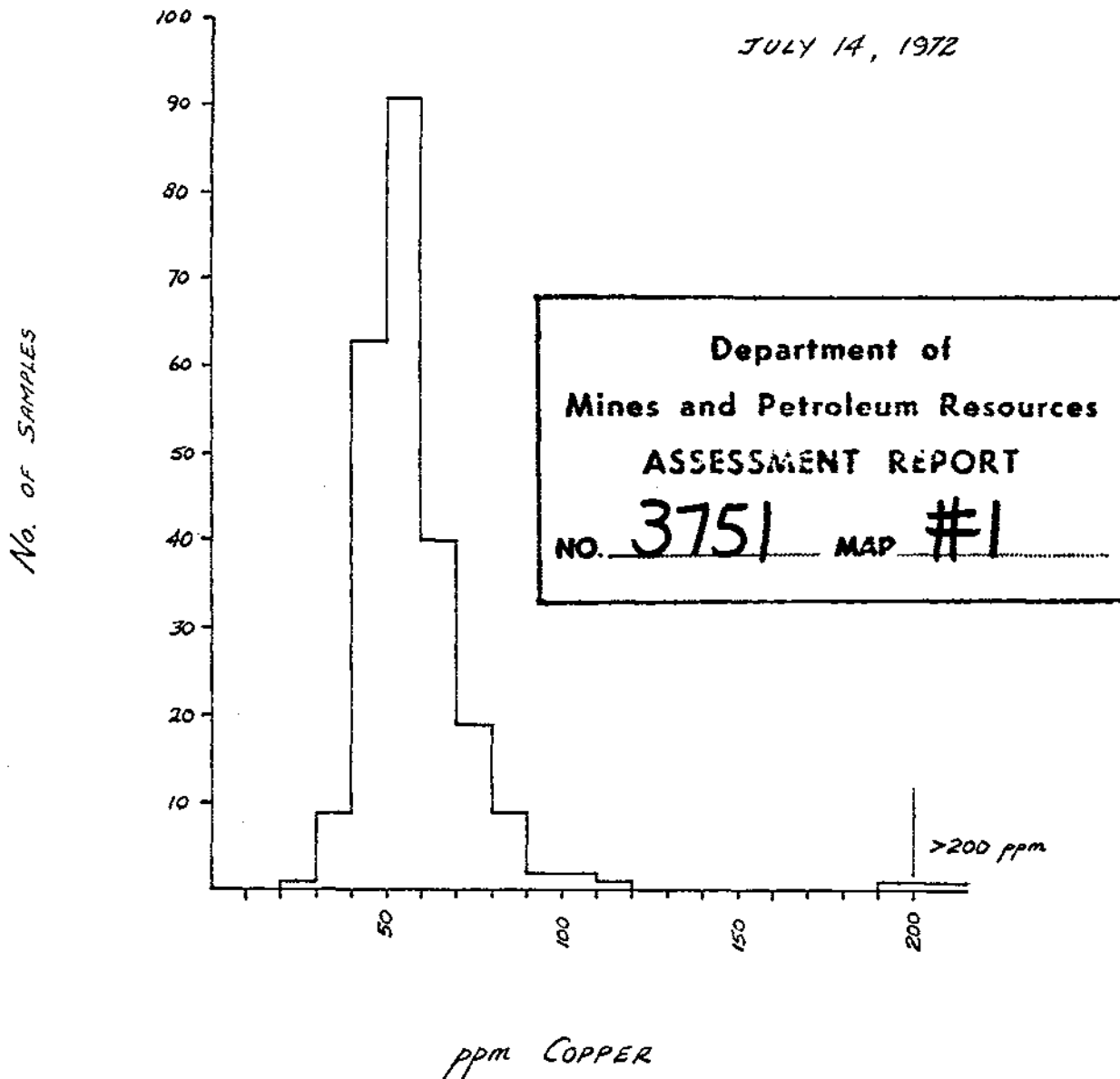


HART RIVER MINES LTD (N.P.L)

WALHACHIN PROPERTY

COPPER IN SOILS

JULY 14, 1972



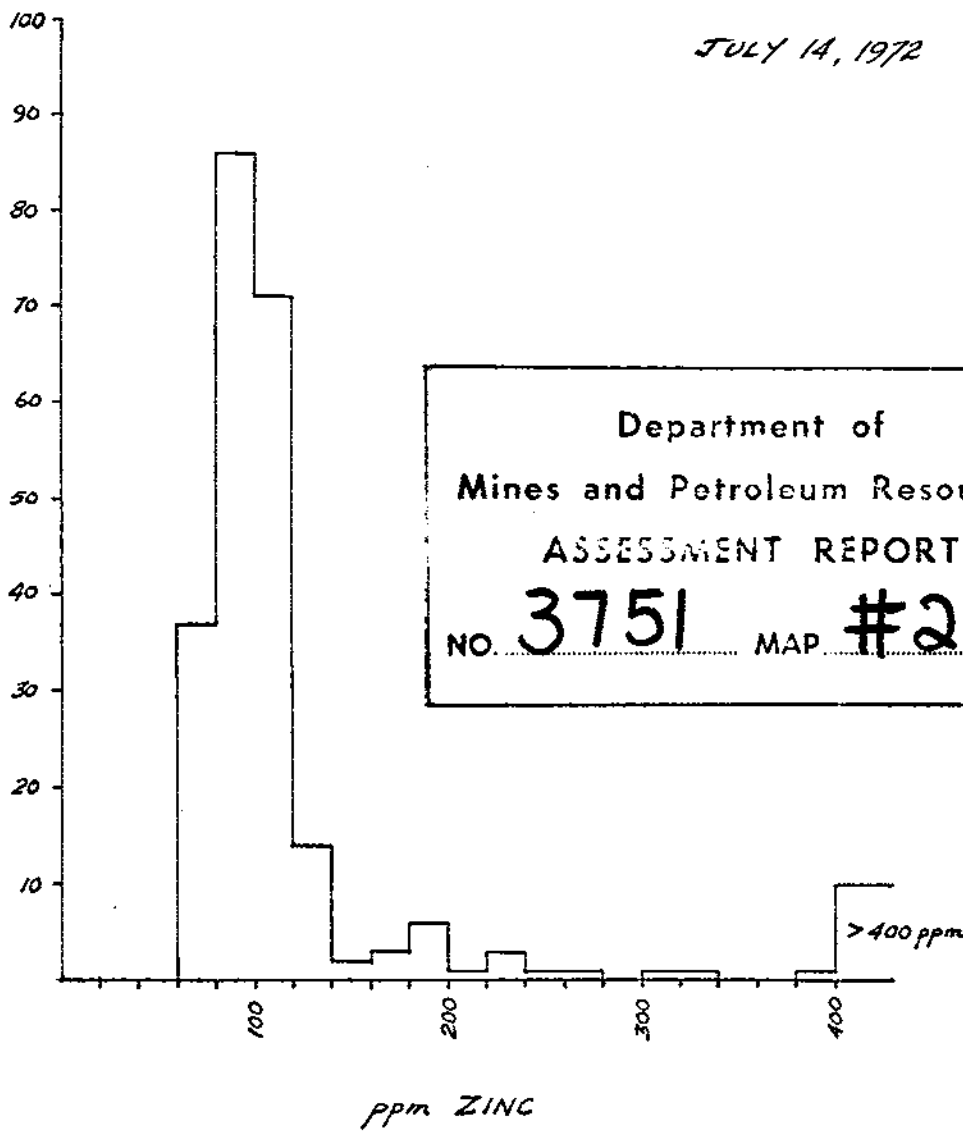
HART RIVER MINES LTD (N.P.L.)

WALHACHIN PROPERTY

ZINC IN SOILS

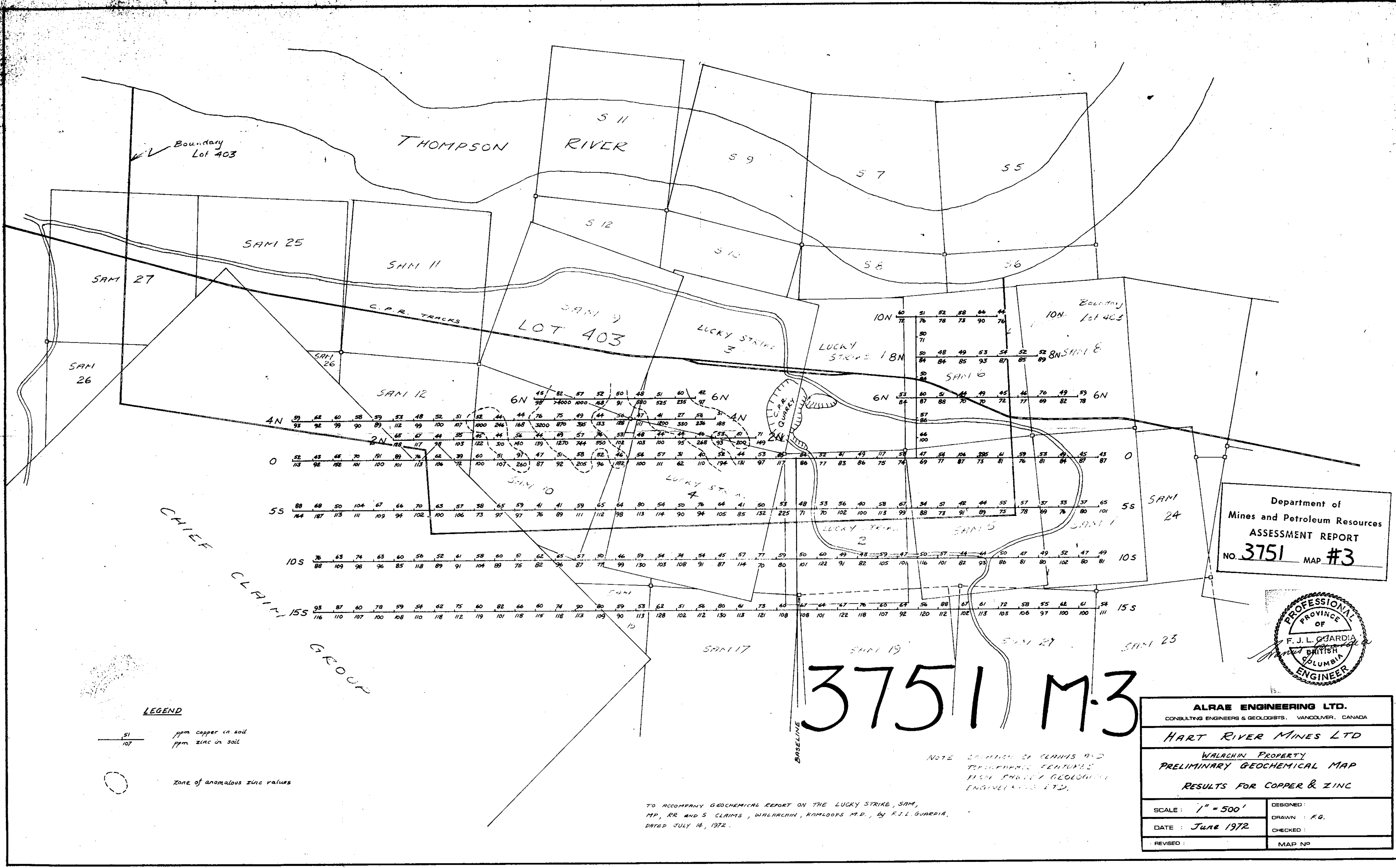
JULY 14, 1972

N<sub>O.</sub> OF SAMPLES

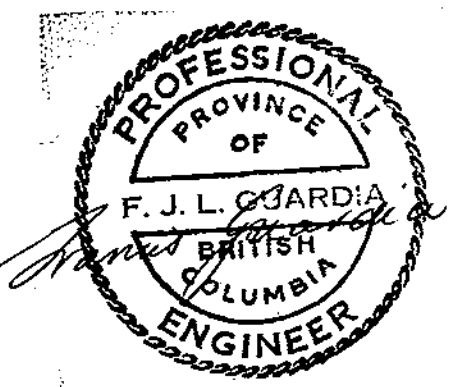


Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 3751 MAP #2





Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
No. 3751 MAP #3



# 3751 M-3

**LEGEND**

51 ppm copper in soil  
107 ppm zinc in soil

○ Zone of anomalous zinc values

NOTE LOCATION OF CLAIMS AND  
TERRITORIAL FEATURES  
FROM FEDERAL GEOLOGICAL  
ENGINEERING LTD.

TO ACCOMPANY GEOCHEMICAL REPORT ON THE LUCKY STRIKE, SAM,  
MP, RR AND S CLAIMS, WALACHIN, KAMLOOPS B.C., BY F. J. L. GUARDIA,  
DATED JULY 14, 1972.

ALRAE ENGINEERING LTD. CONSULTING ENGINEERS & GEOLOGISTS, VANCOUVER, CANADA	
HART RIVER MINES LTD	
WALACHIN PROPERTY PRELIMINARY GEOCHEMICAL MAP RESULTS FOR COPPER & ZINC	
SCALE: 1" = 500'	DESIGNED:
DATE: June 1972	DRAWN: F.G.
REVISED:	CHECKED:
	MAP NO: