

GEOCHEMICAL REPORT ON ERIE GROUP NO. 2
 CANZAC MINES OPTION ON ERIE CREEK
 7 MILES NORTHWEST OF SALMO, 49° 117° SE

NELSON MINING DIVISION 82F3
 BY J. W. MacLEOD, P. Eng.

ERIE GROUP NO. 2

	<u>Claim</u>	<u>Record or C.G. No.</u>	<u>Anniversary Date</u>
	Hattie 1 - 8 Inclusive	10260 to 10287	Aug. 4, 1968
	Hattie 25 - 40 Inclusive	10288 to 10303	Aug. 4, 1968
	DAL 1 - 3 Inclusive	-	July 1969
M.L. #126	Arnold	L 4079	Aug. 18, 1968
	Maud S.	L 3662	Aug. 18, 1968
	Ontario	L 3659	Aug. 18, 1968
	St. Louis	L 12176	Aug. 18, 1968
	Gordon	L 12175	Aug. 18, 1968
M.L. #129	Nelson	L 12177	Oct. 10, 1968
	Monte Carlo	L 1066	Oct. 10, 1968
	Goodenough	L 5466	Oct. 10, 1968
	Drum Lommon ✓	L 5481	Oct. 10, 1968
	Copper King ✓	L 5153	Oct. 10, 1968
	Dora ✓	L 5152	Oct. 10, 1968
	Homestake	L 3433	Oct. 10, 1968
M.L. #151	Eddie ✓	L 12186	June 19, 1968

1603

1603

GEOCHEMICAL REPORT

ON

ERIE GROUP NO. 2

CANZAC MINES OPTION

ON ERIE CREEK

7 MILES NORTHWEST OF SALMO

49° 117° S.E.

NELSON MINING DIVISION

BY

J. W. MacLEOD, P. Eng.

FOR

McINTYRE PORCUPINE MINES LTD.

REPORT COMPLETED-----JULY 26, 1968

FIELD WORK-----MAY 15 - JULY 15, 1968

TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
CONCLUSIONS	1
PROPERTY	2 - 4
LOCATION & ACCESS	4
HISTORY	5
GEOLOGY	5
MINERAL OCCURRENCES	6
SOILS	6
TOPOGRAPHY	7
GROUND CONTROL & SAMPLE PROCEDURE	7
SAMPLE RESULTS	7 - 8
COSTS APPLICABLE TO ASSESSMENT WORK	9
STATEMENT OF QUALIFICATIONS	10

APPENDIX I - GEOCHEMICAL ANALYTICAL METHODS

MAP NO. 1	- LOCATION	1" = 125 mi.
MAP NO. 2	- GENERAL GEOLOGY	1:50,000
MAP NO. 3	- PLAN OF GROUP	1" = 1,500'
MAP NO. 4	- SILT SAMPLE RESULTS	1" = 200'
MAP NO. 5	- SILT SAMPLE RESULTS	1" = 100'

INTRODUCTION:

An examination of the surface exposures in the vicinity of the Erie Group No. 2 indicated the possibility of a large tonnage low grade copper prospect which could be initially tested for by geochemical means. A program of soil sampling was carried out by McIntyre Porcupine Mines Ltd. and the following report on the work has been prepared to fulfill the requirements of the Mineral Act governing the acceptance of geochemical surveys for assessment work.

The following personnel were employed on the project:

J. W. MacLeod - B.Sc., Mining, U. of A., 1946
T. G. Mersereau - B.Sc., Geology, St. Francis Xavier, N.S., 1965
W. Day - 1st year U.B.C. Student
G. Kaiway - 2nd year U.B.C. Student
J. Godin - High School Student

CONCLUSIONS:

The geochemical survey established a well defined north-westerly trending zone anomalous in copper.

The anomalous conditions will have to be further investigated by trenching and drilling to establish their economic significance.

PROPERTY:

The Erie Group No. 2 consists of the following 40 claims which are a part of the 100 claims held by McIntyre under option from Canzac Mines Ltd.

	<u>Claim</u>	<u>Record or C.G. No.</u>	<u>Anniversary Date</u>
	Arnold	L 4079	Aug. 18, 1968
M.L. #126	Maud S.	L 3662	Aug. 18, 1968
Work \$704.00	Ontario	L 3659	Aug. 18, 1968
Rent 88.00	St. Louis	L 12176	Aug. 18, 1968
	Gordon	L 12175	Aug. 18, 1968
	Nelson	L 12177	Oct. 10, 1968
M.L. #129	Monte Carlo	L 1066	Oct. 10, 1968
Work \$852.00	Goodenough	L 5466	Oct. 10, 1968
Rent 106.00	Drum Lommon	L 5481	Oct. 10, 1968
	Copper King	L 5153	Oct. 10, 1968
	Dora	L 5152	Oct. 10, 1968
	Homestake	L 3433	Oct. 10, 1968
M. L. #151	Eddie	L 12186	June 19, 1968
Work \$128.00			
Rent 16.00			

PROPERTY: (continued)

<u>Claim</u>	<u>Record or C.G. No.</u>	<u>Anniversary Date</u>
Hattie No. 1	10280	Aug. 4, 1968
Hattie No. 2	10281	Aug. 4, 1968
Hattie No. 3	10282	Aug. 4, 1968
Hattie No. 4	10283	Aug. 4, 1968
Hattie No. 5	10284	Aug. 4, 1968
Hattie No. 6	10285	Aug. 4, 1968
Hattie No. 7	10286	Aug. 4, 1968
Hattie No. 8	10287	Aug. 4, 1968
Hattie No. 25	10288	Aug. 4, 1968
Hattie No. 26	10289	Aug. 4, 1968
Hattie No. 27	10290	Aug. 4, 1968
Hattie No. 28	10291	Aug. 4, 1968
Hattie No. 29	10292	Aug. 4, 1968
Hattie No. 30	10293	Aug. 4, 1968
Hattie No. 31	10294	Aug. 4, 1968
Hattie No. 32	10295	Aug. 4, 1968
Hattie No. 33 FR.	10296	Aug. 4, 1968
Hattie No. 34	10297	Aug. 4, 1968
Hattie No. 35	10298	Aug. 4, 1968
Hattie No. 36	10299	Aug. 4, 1968

PROPERTY: (continued)

<u>Claim</u>	<u>Record or C.G. No.</u>	<u>Anniversary Date</u>
Hattie No. 37	10300	Aug. 4, 1968
Hattie No. 38	10301	Aug. 4, 1968
Hattie No. 39	10302	Aug. 4, 1968
Hattie No. 40 FR.	10303	Aug. 4, 1968
Dal No. 1 FR.		July 1969
Dal No. 2		July 1969
Dal No. 3		July 1969

A plan of the group is shown on accompanying Map No. 2.

LOCATION & ACCESS:

The claims are located on either side of Erie Creek about 6 miles north of the community of Erie in the Nelson Mining Division. Erie is on Highway 3, three miles west of Salmo. By the National Topographic Series grid the location is 82 F 3 & 6.

Access by car is no problem over the public road, to the old Second Relief camp, which passes through the middle of the property.

The road west across Erie Creek and up Grassy Cr. is a private logging road and permission to use this is required from F. R. Rotter Lumber Co.

HISTORY:

Over 20 adits have been located to date on the ground and although mostly caved, some were several hundred feet in length judging by the dumps, but there is no record of this work in the Minister of Mines Reports. All of this work was carried out prior to 1925.

The reports for 1926, 27 and 28 note that Cominco diamond drilled in those years, no work has been done since then.

GEOLOGY:

The available geology is shown on the accompanying compilation on Map No. 3.

The group covers a formation of argillaceous rocks defined as the Sinemurian Beds of Lower Jurassic Age by Little on his G.S.C. Map 1090A. These rocks form an anticline with an axis roughly paralleling the the course of Erie Creek.

The argillaceous rocks are much intruded by porphyritic granite of the Nelson Batholith and irregular lamprophyre dikes.

MINERAL OCCURRENCES:

Copper mineralization is observed as chalcopyrite in fractures in the vicinity of most of the old workings. These workings are practically all caved and the exposed rock is covered by a gossan so that the trend or extent of the copper mineralization is not evident. Much of the gossan is due to disseminated pyrrhotite and there is no malachite or azurite in the area.

SOILS:

The soil cover where samples were collected ranges from 3 inches to probably 15 feet. No samples were taken in the narrow valley bottom where the coarse creek gravels may be of considerable depth.

A typical soil profile follows:

<u>Soil Horizon</u>	<u>Depth</u>	<u>Description</u>
A1.	0" - 4"	plant litter and partially decomposed litter.
Ah.	4" - 8"	blackish, organic rich mineral soil.
Ae.	intermittent	grey leached zone 1" - 2" thick.
Bf.	8" -	iron oxide rich, rust colored mineral soil, loses intensity of rust color with depth.

TOPOGRAPHY:

The sampled area covers the steep uniform slope into Erie Creek, between elevations 3000 and 4000 feet. The soils on this slope are well drained.

GROUND CONTROL & SAMPLE PROCEDURE:

A base line was laid out bearing N 12° W parallel to the strike of the sediments. This line was cut and chained at 100 foot intervals.

Chain and compass cross lines were run at 400 foot interval closing up to a 100 foot interval where detail was required.

Samples were collected immediately below the Ah - Bf soil zone interface. The samples were then prepared and analysed as described in Appendix I.

SAMPLE RESULTS:

A number of trial samples were run over known mineralization and analysed for copper, molybdenum and zinc. From these trial samples only the copper results showed any anomalous condition so only copper was run for the gridded area.

SAMPLE RESULTS: (continued)

The sampled area covered by this report is in an area of known mineralization and the expected soil highs were obtained. Sampling is being carried out over a much larger area and this work indicates a more normal background in the range of 20 - 40 p.p.m. copper for the region.

Contouring of the results as shown on Maps 4 and 5 define a mineralized trend bearing N 25° W across the strike of the sediments at N 12° W.

The 200 p.p.m. contour shows a notable downhill migration.

The 400 foot grid outlines a fairly uniform northwest trending anomaly while some indications of narrower east west zones are indicated by the detailed 100 foot grid.

Only further investigation in the form of rock trenching or drilling for sampling purposes can establish the economic significance of the anomalies.

COSTS APPLICABLE TO ASSESSMENT WORK:

T. G. Mersereau - supervision & sample collection	
May 28 - July 15 - 30 days @ \$35 = \$1,050	
G. Kaiway - lines and sample collection	
May 22 - July 15 - 44 days @ \$20 = \$ 880	
W. Day - lines and sample collection	
May 22 - July 12 - 28 days @ \$20 = \$ 560	
J. Godin - lines and sample collection	
June 21 - July 15 - 16 days @ \$20 = \$ 320	
J. W. MacLeod - supervision and report preparation	
May 22 - July 25 - 10 days @ \$50 = \$ 500	
N. Hriskow - colouring and typing - 3 days @ \$20 = \$ 60	
	<u>\$3,370</u>
Sample Analyses - Coranex Ltd. - 922 samples	<u>\$1,249</u>
Total Costs re assessment work	<u><u>\$4,619</u></u>
Cost per sample: 4,619/922	= \$5.20

Respectfully submitted,



J. W. MacLeod, P. Eng.

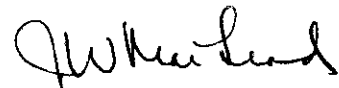
Vancouver, B.C.

July 25, 1968

STATEMENT OF QUALIFICATIONS:

I, J. W. MacLeod of the City of Vancouver, in the Province of British Columbia, do hereby certify as follows:

1. That I am a Mining Engineer.
2. That I am a graduate of the University of Alberta (B.Sc. 1946).
3. That I am a member of the Association of Professional Engineers of British Columbia.
4. That T. G. Mersereau, who was in charge of the soil sampling program, is a graduate of St. Francis Xavier University and has recently completed a thesis on geochemistry for a Masters degree at the University of New Brunswick.



J. W. MacLeod, P. Eng.

Vancouver, B.C.

July 25, 1968

CORANEX LIMITED

1521 PEMBERTON AVENUE,
NORTH VANCOUVER, B.C.
988-2171

July 22, 1968

TO: Mr. J. MacLeod,
McIntyre Porcupine Mines Ltd.,
1004-409 Granville St.,
Vancouver 2, B.C.

FROM: Mr. Conway H.W. Chun,
Coranex Exploration Ltd.,
1521 Pemberton Ave.,
North Vancouver, B.C.

SUBJECT: GEOCHEMICAL ANALYTICAL METHODS FOR MOLYBDENUM, COPPER, ZINC,
AND LEAD.

(1) SAMPLE PREPARATION:

- (a) Geochemical soil and silt samples were collected and stored in the wet-strength 3½" by 6½" Kraft paper bags.
- (b) The wet samples were dried in a ventilated infra-red heating lamp oven.
- (c) The dried samples were sifted by using an 80 mesh stainless steel sieve. The plus 80 mesh fractions are rejected, and the minus 80 mesh fractions are transferred into a new bag for analysis later.

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NORTH VANCOUVER, B.C.
988-2171

(2) GEOCHEMICAL ANALYSIS FOR ACID SOLUBLE MOLYBDENUM IN SOIL AND SILT SAMPLES.

DIGESTION

- (a) A torsion balance was used to weigh out 1.00 gram sample of the minus 80 mesh fraction.
- (b) Samples were heated in a sand bath for 3 hours with Nitric and Perchloric acid and later treated with 6 M. Hydrochloric acid.
- (c) The digested samples were diluted with 50 ml. demineralized water.

ANALYSIS

- (a) A 5.0 ml. aliquot was taken out for analysis.
- (b) 15% ammonium thiocyanate solution was added to complex the ions.
- (c) 15% stannous chloride solution was used as a reducing agent.
- (d) Iso-propyl ether was used to concentrate the colored extraction.
- (e) A Bausch & Lomb spectronic 20 colorimeter was used to read out molybdenum concentration.

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NORTH VANCOUVER, B.C.
988-2171

(3) GEOCHEMICAL ANALYSIS FOR ACID SOLUBLE COPPER IN SOIL AND SILT SAMPLES.

DIGESTION

- (a) A torsion balance was used to weigh out 1.00 gram sample of the minus 80 mesh fraction.
- (b) Samples were heated in a sand bath for 3 hours with Nitric and Perchloric acid and later treated with 6 M Hydrochloric acid.
- (c) The digested samples were diluted with 50 ml. demineralized water.

ANALYSIS

- (a) The digested solution was aspirated into an Atomic Absorption Spectrophotometer (Techtron AA4 model) with a copper hollow cathode lamp in operation.
- (b) The absorbance reading was recorded on each sample. The geochemical values in parts per million were calculated by comparing the absorbance of a set of copper standards to calibrate the atomic absorption unit.

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NORTH VANCOUVER, B.C.
988-2171

(4) GEOCHEMICAL ANALYSIS FOR ACID SOLUBLE ZINC IN SOIL AND SILT SAMPLES.

DIGESTION

- (a) A torsion balance was used to weigh out 1.00 gram sample of the minus 80 mesh fraction.
- (b) Samples were heated in a sand bath for 3 hours with Nitric and Perchloric acid and later treated with 6 M Hydrochloric acid.
- (c) The digested samples were diluted with 50 ml. demineralized water.

ANALYSIS

- (a) The digested solution was aspirated into an Atomic Absorption Spectrophotometer (Techtron AA4 model) with a zinc hollow cathode lamp in operation.
- (b) The absorbance reading was recorded on each sample. The geochemical values in parts per million were calculated by comparing the absorbance of a set of zinc standards to calibrate the atomic absorption unit.

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(5) GEOCHEMICAL ANALYSIS FOR ACID SOLUBLE LEAD IN SOIL AND SILT SAMPLES.

DIGESTION

- (a) A torsion balance was used to weigh out 1.00 gram sample of the minus 80 mesh fractions.
- (b) Samples were heated in a sand bath for 2 hours with 4 parts of Hydrochloric acid and 1 part of Nitric acid and later treated with 2 M Hydrochloric acid.
- (c) The digested samples were diluted with 50 ml. demineralized water.

ANALYSIS

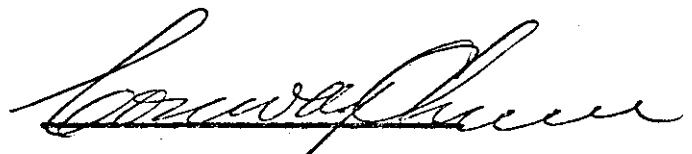
- (a) The digested solution was aspirated into an Atomic Absorption Spectrophotometer (Techtron AA4 model) with a lead hollow cathode lamp in operation.
- (b) The absorbance reading was recorded on each sample. The geochemical values in parts per million were calculated by comparing the absorbance of a set of lead standards to calibrate the atomic absorption unit.

CORANEX LIMITED

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NORTH VANCOUVER, B.C.
988-2171

REFERENCES:

- (a) J. W. Robinson: Atomic Absorption Spectroscopy
- (b) N. H. Furman: Standard Methods of Chemical Analysis. 6th Ed.
- (c) Sydney Abbey: Analysis of Rock and Minerals by Atomic
Absorption Spectroscopy. Geological Survey of Canada
Paper 67-37
- (d) The Manual of Analytical Methods for Atomic Absorption
Spectrophotometer. Perkin-Elmer Corp.
- (e) Atomic Absorption Newsletters. Perkin-Elmer Corp.
- (f) R. E. Stanton: Rapid Methods of Trace Analysis for
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- (g) Sandell: Colourimetric metal analysis. 3rd Ed.
- (h) Feigl: Spot Tests in Inorganic Analysis.
- (i) Ward et al: Analytical Methods used in Geochemical
Exploration by U. S. Geological Survey. Bulletin 1152.

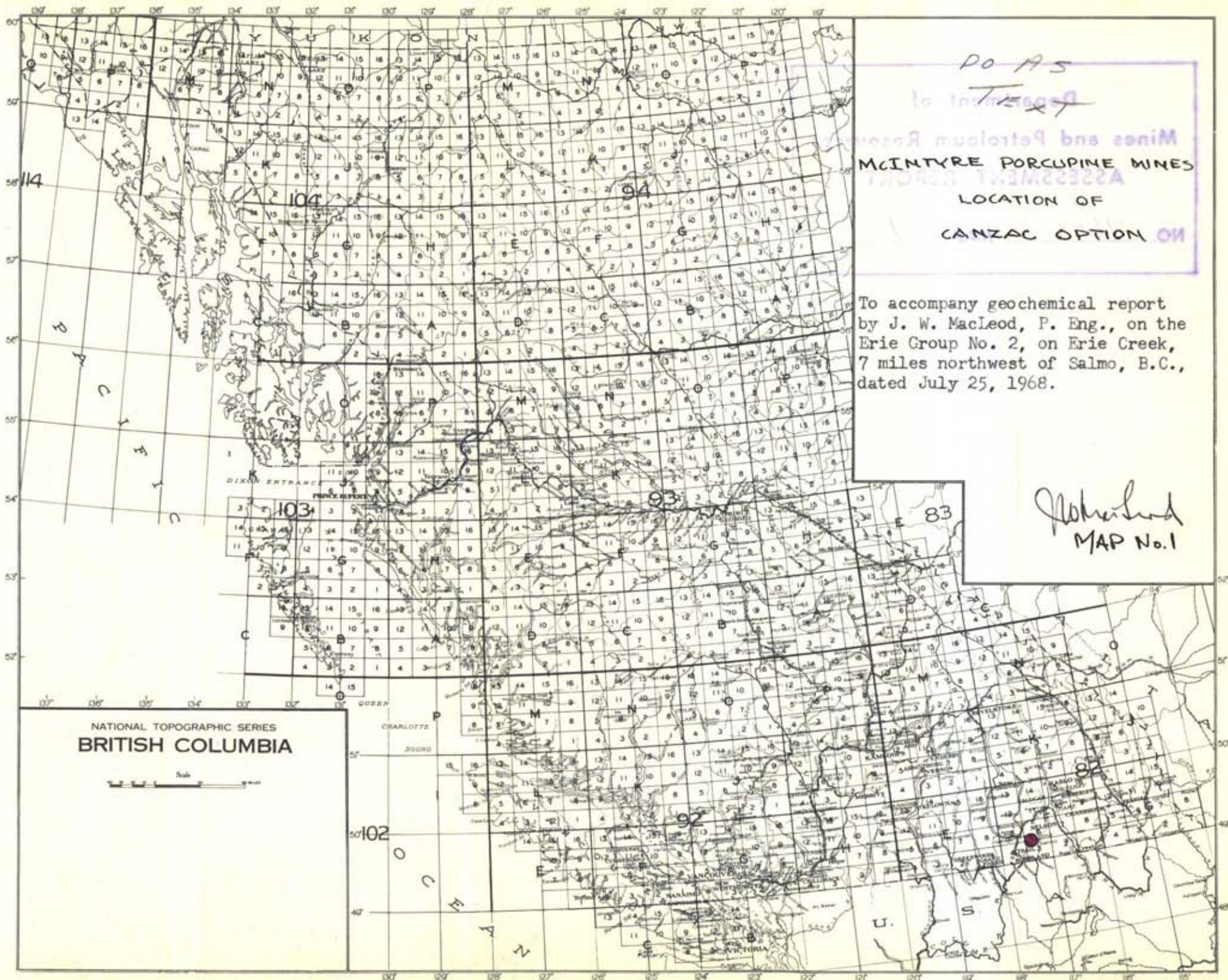


Conway Chun

North Vancouver, B. C.

APPENDIX I

GEOCHEMICAL ANALYTICAL METHODS



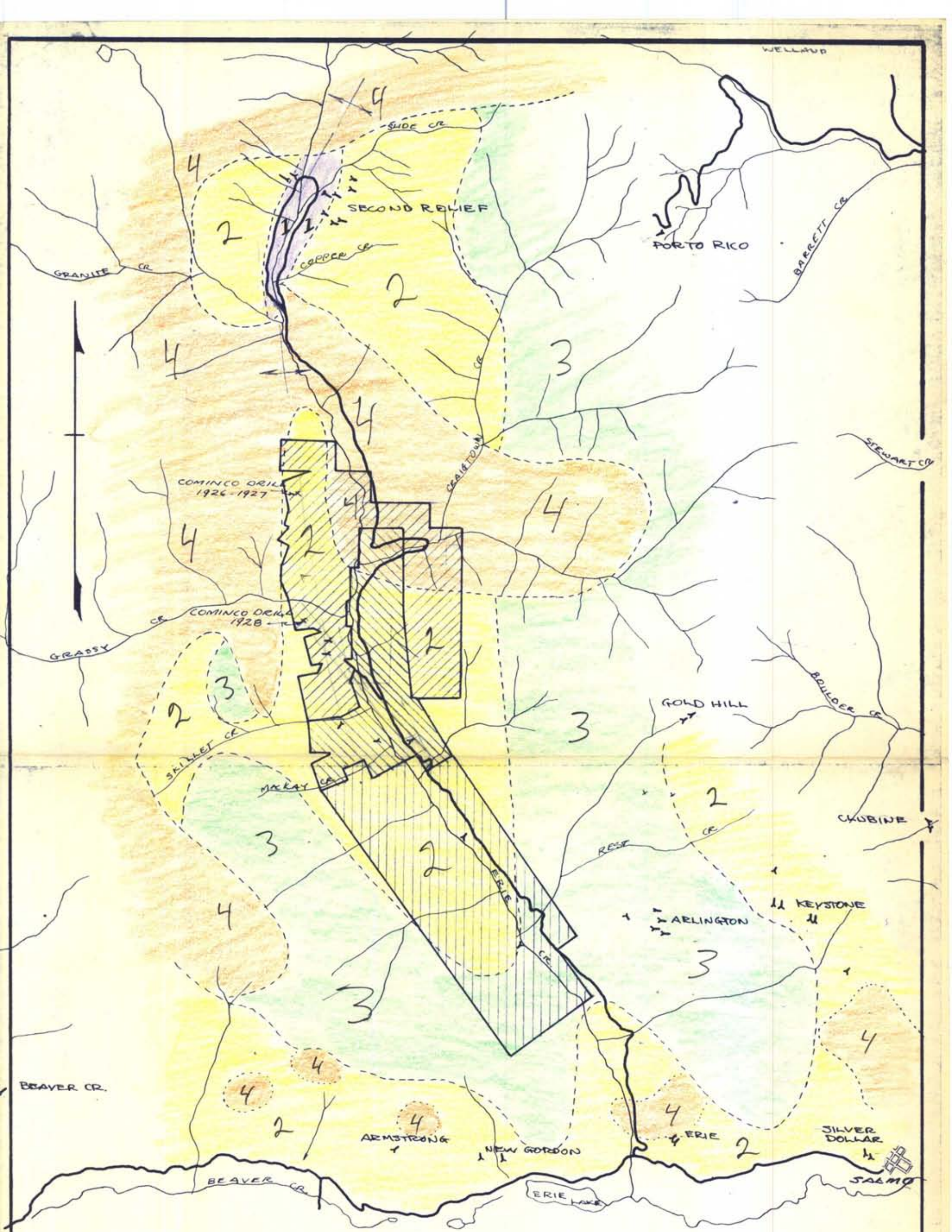
P.O. A.S.
 Department of
 Mines and Petroleum Resources
 MCINTYRE PORCUPINE MINES
 ASSESSMENT REPORT
 LOCATION OF
 CANZAC OPTION

To accompany geochemical report
 by J. W. MacLeod, P. Eng., on the
 Erie Group No. 2, on Erie Creek,
 7 miles northwest of Salmo, B.C.,
 dated July 25, 1968.

John MacLeod
 MAP No. 1

NATIONAL TOPOGRAPHIC SERIES
 BRITISH COLUMBIA





4	GRANITE	ERIE GROUP No.1
3	ANDESITE	" " No.2
2	ARGILLITE	" " No.3
1	AGGLOMERATE	
→	ADIT	

1603

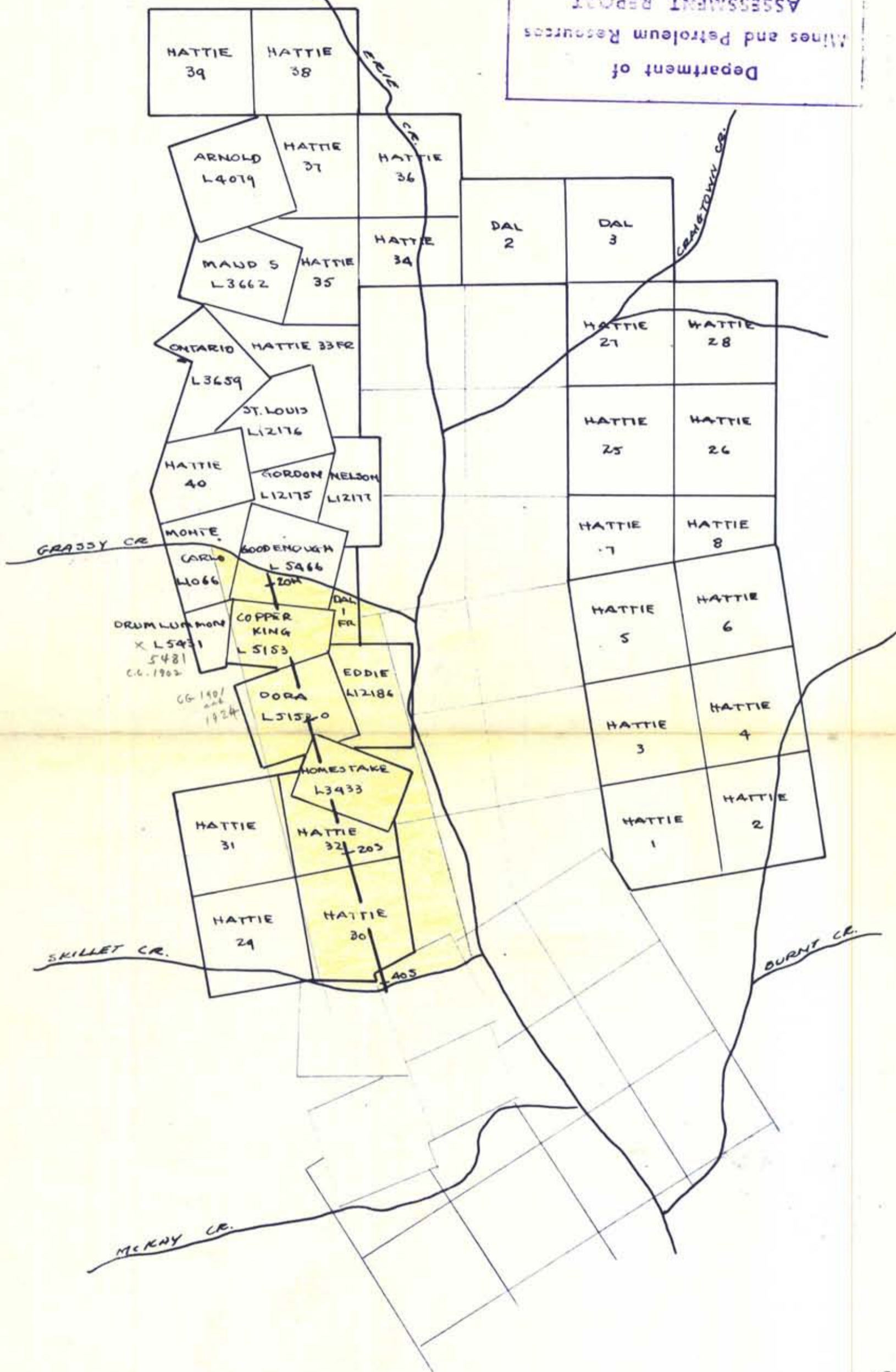
MAP. No. 2

McINTYRE PORCUPINE MINES LTD.	
CANZAC - ERIE CR. G.P.S.	
DRAWN: Feb 6, 68	SCALE: 1:50,000
BY: QMA	NTS: 82 F 3.6

To accompany geochemical report by J. W. MacLeod, P. Eng., on the Erie Group No. 2, on Erie Creek, 7 miles northwest of Salmo, B.C., dated July 25, 1968.

1603

MAP No. 3
 1603
 ASSESSMENT REPORT
 Mines and Petroleum Resources
 Department of



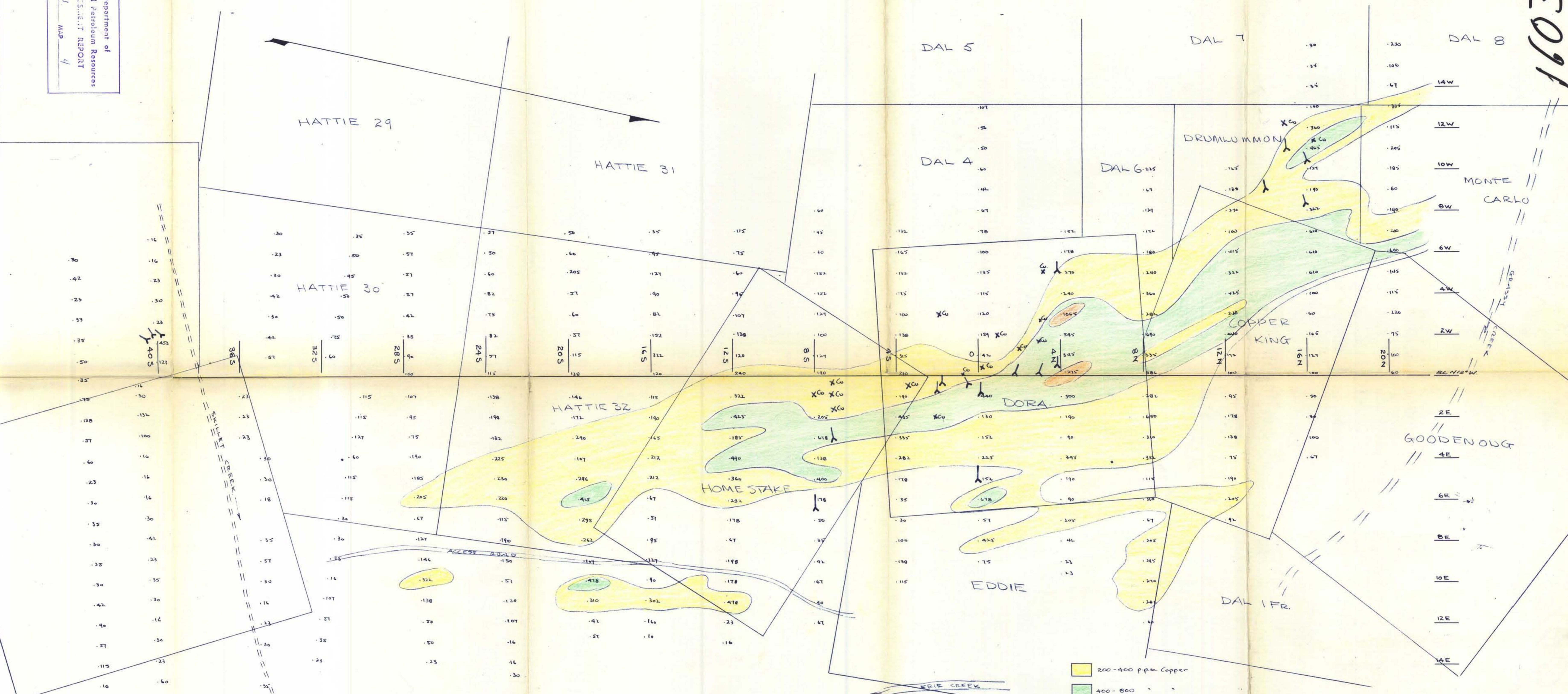
AREA COVERED BY GEOCHEM SURVEY

Whitford
 MAP. No. 3.

To accompany geochemical report by J. W. MacLeod, P. Eng., on the Erie Group No. 2, on Erie Creek, 7 miles northwest of Salmo, B.C., dated July 25, 1968.

MCINTYRE PORCUPINE MINES LIMITED	
CANZAC ERIE GROUP No. 2.	
DATE DRAWN: JULY 23, 1968	SCALE: 1" = 1500'
DRAWN BY: MACLEOD	N.T.S. 62 F 3, 6

1603

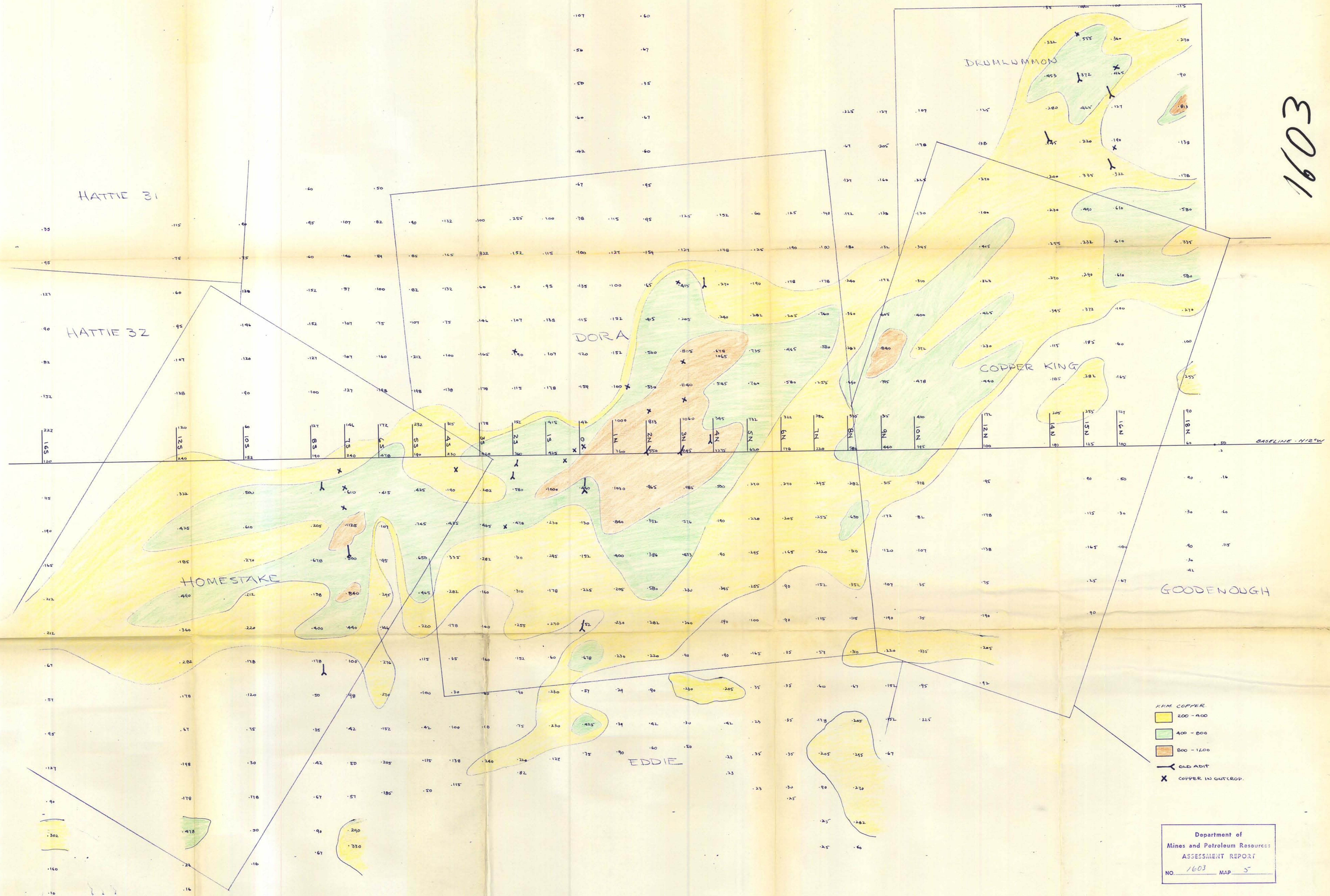


- 200-400 p.p.m. Copper
- 400-800 " "
- 800+ " "
- OLD ADIT
- Copper in outcrop

MAP No. 4
 TO ACCOMPANY GEOCHEMICAL REPORT BY J.W. MACLEOD, P. ENG.,
 ON THE ERIE GROUP No. 2 ON ERIE CREEK, 7 MILES
 NORTHWEST OF SALMO, B.C., DATED JULY 25, 1968.

<i>W. MacLeod</i>	
MCINTYRE PORCUPINE MINES LIMITED	
CANZAC OPTION	
COPPER IN SOILS	
DATE DRAWN: JULY 24, 1968	SCALE: 1" = 200'
DRAWN BY: MacLeod	NTS.

1603



- K.H.M. COPPER.
- 200 - 400
 - 400 - 800
 - 800 - 1200
 - OLD ADIT
 - COPPER IN OUTCROP

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1603 MAP 5

NOTE: DRAWN LOOKING UP STEEP LIGHTLY OVERBURDENED SLOPE, RIDES 300 FEET IN 1000

MAP No. 5
TO ACCOMPANY GEOCHEMICAL REPORT BY J. W. MACLEOD, P. ENG.,
ON THE ERIE GROUP NO. 2, ON ERIE CREEK, 7 MILES NORTHWEST
OF SALMO, B.C., DATED JULY 25, 1968.

McINTYRE PORCUPINE MINES LIMITED.
CANZAC OPTION
COPPER IN SOILS
DRAWN: JUNE 5, 1968 SCALE: 1" = 100'
DRAWN BY: Macleod N.T.S.