

GEOCHEMICAL - GEOLOGICAL REPORT
ON THE B NOS. 1-20 MINERAL CLAIMS,
SITUATED $2\frac{1}{2}$ MILES EAST OF SOUTH END
INDATA LAKE - OMINECA M.D.
55° 20' N, 125° 11' W

WORK DONE BY COMINCO LTD. DURING
THE PERIOD JULY 22 TO AUGUST 6, 1967
REPORT BY
D.D. MacGREGOR, UNDER THE SUPER-
VISION OF J. RICHARDSON, P. ENG.

93N / ~~5E~~ 6E

1064

COMINCO LTD.

GEOCHEMICAL AND GEOLOGICAL REPORT
ON THE B NOS. 1-20 MINERAL CLAIMS, SITUATED
2½ MILES EAST OF SOUTH END INDATA LAKE - OMINECA M.D.
55° 20' N, 125° 11' W

<u>Group</u>	<u>Number of Claims</u>	<u>Credit Requested</u>
B #1 Group	20	2 years each

Located claims on which assessment work credit is requested are as follows:-

<u>Claim</u>	<u>Record No.</u>	<u>Credit Requested</u>	<u>Total</u>
B Nos. 1-4 inclusive	42756-42759 inclusive	2 years each	8 years
B Nos. 5-20 inclusive	45216-45231 inclusive	2 years each	32 years
		Total	40 years

Work was done on these claims in the period July 22 to August 6, 1967.

REPORT BY

D.D. MACGREGOR, UNDER THE SUPERVISION

OF J. RICHARDSON, P. ENG.

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(1) Statement of Expenditures.	
(2) Statutory Declaration of Expenditures.	
# 1 (3) Plate IL 67-1, Indata Lake Location Map 1" = 4 miles.	
# 2 (4) Plate IL 67-2, Indata Lake Geological Map 1" = 20'.	
# 3 (5) Plate IL 67-3, Indata Lake Geological Map 1" = 400'.	
# 4 (6) Plate IL 67-4, Indata Lake Geochemical Map 1" = 400'.	

COMINCO LTD.

EXPLORATION

WESTERN DISTRICT

GEOCHEMICAL AND GEOLOGICAL REPORT
ON THE B NOS. 1-20 MINERAL CLAIMS, SITUATED
2½ MILES EAST OF SOUTH END INDATA LAKE - OMINECA M.D.
55° 20' N, 125° 11' W

INTRODUCTION

This survey consists of concurrent geochemical soil sampling and geological mapping, which was done to determine the extent and continuity of copper mineralization.

The survey was conducted by D. D. MacGregor, assisted by R. J. Nowak under the supervision of D. L. Cooke, Ph.D, and J. Richardson, P. Eng.

The B claims are located in the Omineca Mining Division (NTS 93 N/6 E½), at latitude N 55° 20', longitude W 125° 11', elevation 3500'.

Access to the south end of Indata Lake is either by float plane or helicopter from Fort St. James (75 miles) or by road to the east end of Chuchi Lake (60 miles) and then by water up Chuchi and Tchentlo Lakes (45 miles). Bulldozers have been in as far as the north end of Indata Lake having come from Fort St. James via Manson Creek, Bralorne Takla Mercury Mine and Kwanika Creek.

The prospect is located on Rottacker Creek, approximately 2½ miles east of the south end of Indata Lake. (Plate IL67-1).

HISTORY

The copper showing on Rottacker Creek was first shown to W. Rigler by an Indian who held a trap line on Rottacker Creek. It has been staked and held intermittently by W. Rigler or R. Jackson since the early 1960's.

DEVELOPMENT

One large trench 30' X 50' and one small hand trench have been cut across the showing.

Methods used in:

Geochemical Survey:

Soils and stream sediments were collected and analyzed for copper and lead, using the Unicam SP 90 Atomic Absorption Spectrophotometer.

Survey control was provided by chain and compass for surveyed claim lines and base lines, and pace and compass for sample lines. Sample spacing is 200' along traverse lines 400' apart.

Sample Preparation:

The respective dried soil horizon samples (i.e. A₀, A₁, B) or stream sediment samples are first subjected to sieving with a minus 80 mesh nylon screen. A half-gram plastic scoop is used to "weigh" out the samples to be digested. The majority of the samples "weighed" in this manner, are checked out with a weighing balance, and found to be within ± 10% of the accurately measured weights. The half-gram samples were placed in 16 X 150 mm. pyrex test tubes and after addition of 10% Hcl (Vol/Vol.), heated at 95° - 100° c for one hour in an oven. The samples are allowed to cool and then bulked to 15 mls. with 10% Hcl, mixed well, and allowed to settle and equilibrate for two to four hours.

Atomic Absorption Analysis:

The SP. 90 Unicam A. A. Spectrophotometer accepts a small portion of the extract which is aspirated into an Oxygen-Acetylene flame. The flame temperature is sufficient to dissociate most of the sample into the atomic state. The amount of sample absorption of the line spectrum of the particular element being analyzed for is compared to the amounts obtained by previously carefully prepared standards. The values of the standards are plotted on log-log paper with percent absorption against concentration in $\mu\text{gm/ml}$. The amounts of copper and zinc are read from the graph in $\mu\text{gm/ml}$ and these values are multiplied by a dilution factor of 30 (0.5 gm/15 ml.) thus giving readings in p.p.m.

GEOLOGY

The property is located on the western margin of the Hogen batholith which is in contact with sedimentary and volcanic rocks of the Takla Group, and with the Pinchi Fault. In the vicinity of Indata Lake, the G.S.C. has mapped a sequence of Upper Triassic and Jurassic conglomerates, tuffs and limestones, and Permian Cache Creek formations.

Scattered outcrops of tuff and conglomerate are found along Rottacker Creek and its tributaries. Northerly trending faults can be seen in some of the outcrops. Further east, along a small creek, quartz monzonite outcrops. A small mineralized outcrop, about 30' X 50', occurs in silicified and sheared quartz monzonite, with chalcopyrite and pyrite found along fractures and more regular joints. (Plate IL67-3) Three faults noted in order of importance are N 24°W/63°NE, N60E/73°SE and 090/50°N. The mineralization lies dominantly parallel to the N 24 W fault. Two prominent sets of fractures bear N 52° W/87° W and N 85° E/60° N. A small trench along strike of the N 24° W fault across the creek showed only weak malachite staining. (Plate IL67-2) The quartz monzonite adjacent to the faults show potassic alteration. Fresh quartz monzonite is found 200 feet on either side of the showings.

Geological mapping of the claim group did not reveal other areas of mineralization. This is in part due to the widespread cover of glacial drift. The results of geochemical soil sampling are hardly more encouraging. (Plate IL67-4) Highest values in copper occur on and around the mineralized outcrop. The geochemical results confirm the geological interpretation that mineralization is controlled by shears within the quartz monzonite intrusion.

CONCLUSIONS

About 5% of the claim group shows outcropping. Ninety percent of rock exposure is tuff and conglomerate which shows no mineralization. Quartz monzonite outcrops are seen only on the eastern part of the claim group and except for one mineralized area, the outcrops are barren. The intersection of two major faults creating a shear zone 10' wide is apparently the only reason the rock is mineralized.

REFERENCES:

- (1) Indata Lake Property Reports - S. J. P.
- (2) Fort St. James Map-Area, Cassiar and Coast Districts by J. E. Armstrong, Geological Survey of Canada.
- (3) Indata Lake Property - Field notes and maps, D. D. M.

ATTACHMENTS:

- (1) Statement of Expenditures.
- (2) Statutory Declaration of Expenditures.
- (3) Indata Lake Location Map 1" = 4 miles, approx., Plate IL 67-1
- (4) Indata Lake Geological Map 1" = 20' , Plate IL 67-2
- (5) Indata Lake Geological Map 1" = 400', Plate IL 67-3
- (6) Indata Lake Geochemical Map 1" = 400', Plate IL 67-4

REPORT BY:

D. D. MacGregor

D. D. MacGregor
Exploration Assistant

ENDORSED BY:

J. Richardson

J. Richardson
Professional Engineer

DDM:mk
Vancouver Office
August 6, 1967

Distribution: Mining Recorder, (Smithers) (2) ✓
Vancouver Exploration (1)

C O M I N C O L T D.

STATEMENT OF EXPENDITURES 1967
B #1 GROUP - OMINECA M. D.
INDATA LAKE

GEOLOGICAL AND GEOCHEMICAL SURVEY

During the period July 22 to August 6, 1967.

D. D. MacGregor, Exploration Assistant, 15 days @ \$25/day	\$ 375
R. L. Nowak, Student Assistant, 15 days @ \$20/day	\$ 300

TRANSPORTATION

Helicopter Charter	- 13.5 hrs. @ \$135/hr.	\$ 1,820
Fixed Wing Aircraft Charter	- 1.4 hrs. @ \$ 72/hr.	\$ 135

SUPERVISION

During the period July 22 to August 6, 1967.

S. J. Pedley, Sr. Exploration Geologist - 2 days @ \$50/day	\$ 100
D. L. Cooke, Exploration Geologist - 7 days @ \$50/day	\$ 350
J. Richardson, P. Eng. 4 days @ \$75/day	\$ 300

ROOM AND BOARD

Camp Supplies and Food	\$ 300
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ASSAYS

326 samples @ \$1.50/sample	\$ 490
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<u>DRAUGHTING AND PREPARATION OF REPORT</u>	\$ 250
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Sub Totals:

Geological Survey	- \$1,960
Geochemical Survey	- 2,460
	<u>\$4,420</u>

TOTAL	<u>\$ 4,420</u>
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Endorsed By:

E.H. Caldwell
E.H. Caldwell, Assistant Manager, Exploration

This is Exhibit "A" to the Statutory Declaration of E. H. Caldwell, declared before me the 7th day of September, A.D. 1967.

Linda Baumeister
A Commissioner for taking Affidavits
for the Province of British Columbia
SUB - MINING RECORDER

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
To Wit:

In the Matter of

STATUTORY DECLARATION RELATING TO
EXPENDITURES ON A GEOLOGICAL AND
GEOCHEMICAL SURVEY OF CERTAIN
MINERAL CLAIMS (B #1-20, Record
Nos. 42756-42759, 45216-45231)
LOCATED IN THE OMINECA MINING
DIVISION

I, E. H. CALDWELL, Mining Engineer

of Vancouver

in the Province of British Columbia, do solemnly declare that

1. I am acquainted with D. D. MacGregor who prepared a geological and geochemical report as a result of surveys carried out on certain mineral claims by Cominco Ltd., as agents for the owners of the said claims.
2. Copies of the said report are being filed with the Mining Recorder at Smithers.
3. Attached hereto and marked with a letter "A" upon which I have signed my name at the time of declaring hereof, is a statement of expenditures incurred in connection with the geological and geochemical survey of the said claims.

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the CITY
of VANCOUVER, in the
Province of British Columbia, this 7th
day of September 1967, A.D.

EMB Caldwell

Linda Baumeister

*A Commissioner for taking Affidavits for British Columbia or
A Notary Public in and for the Province of British Columbia.*

SUB - MINING RECORDER

COMINCO LTD.

STATEMENT OF QUALIFICATIONS

D. D. MacGregor was responsible for conducting the geological and geochemical surveys described herein. MacGregor is a Geological Assistant and has been employed in geological field work since 1963. During this time he has worked on various field projects as a Geological Assistant. I consider him a competent and experienced Geological Assistant.


J. Richardson
Professional Engineer

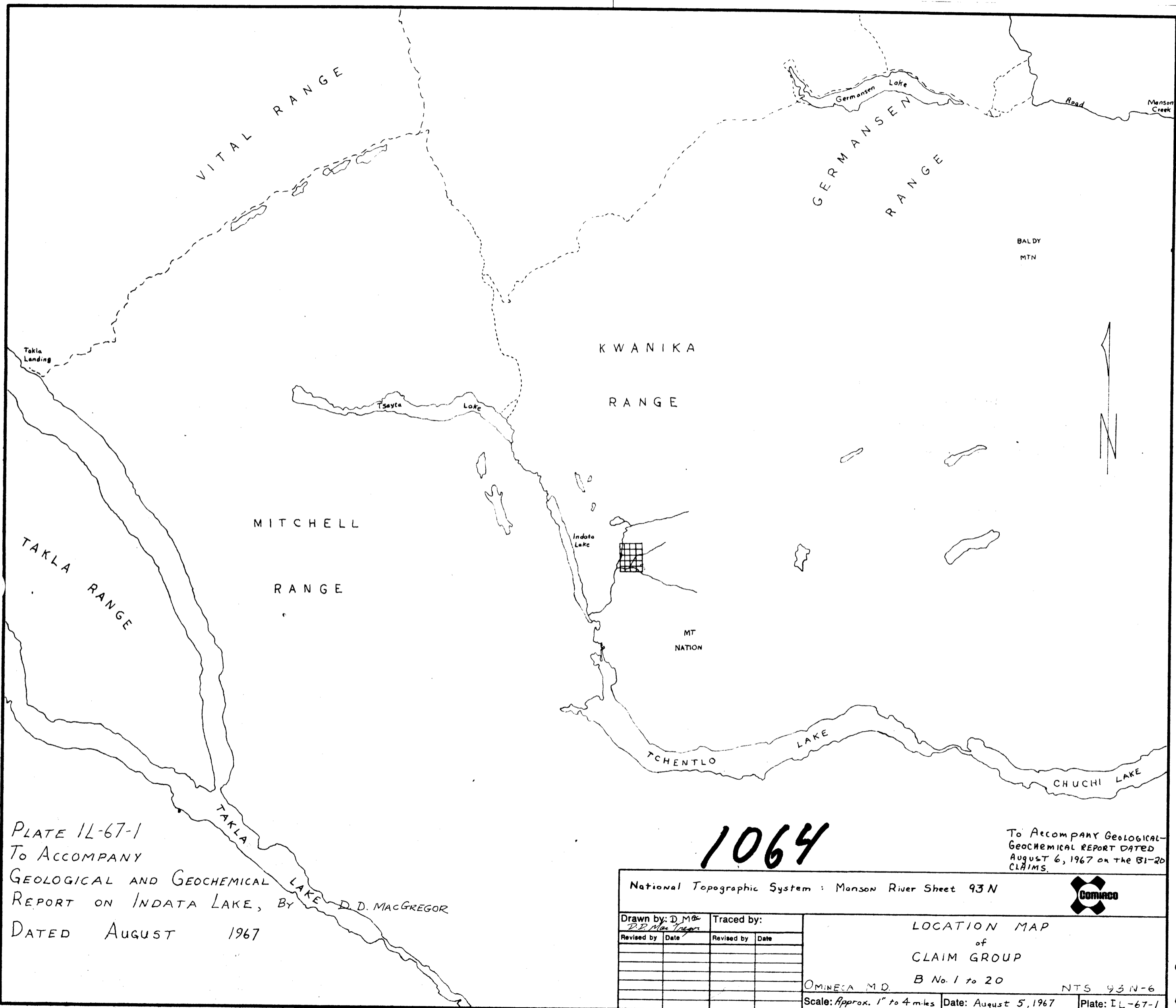



PLATE IL-67-1
 TO ACCOMPANY
 GEOLOGICAL AND GEOCHEMICAL
 REPORT ON INDATA LAKE, BY D. D. MACGREGOR
 DATED AUGUST 1967

1064

To Accompany Geological-
 Geochemical Report Dated
 August 6, 1967 on the B1-20
 CLAIMS.

National Topographic System : Manson River Sheet 93N

OMINECA M.D. 

Drawn by: D.M. & P.D. MacGregor
 Revised by: _____ Date: _____

Traced by: _____
 Revised by: _____ Date: _____

LOCATION MAP
 of
 CLAIM GROUP
 B No. 1 to 20

Scale: Approx. 1" to 4 miles
 Date: August 5, 1967
 Plate: IL-67-1







NTS 93N-6

63°
1161° Quartz Monzonite Outcrop
300' north

Qtz. Monzonite

30° Declination East

LEGEND

-  Claim Post
-  FAULT
-  FRACTURE
-  Outcrop BOUNDARY
-  Pit BOUNDARY
-  Chalcopyrite Mineralization

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 MAP 1064
 NO

Overburden

Qtz. Monzonite
Minor Malachite Staining

Mineralization occurs bordering fault zone as thin stringers and further out as disseminations. Pyrite and chalcopyrite with minor hematite are the main minerals. Mineralization occurs in a heavily altered quartz monzonite.

Major Fault Zone (Younger 1' gauge)

Minor Fault (16' gauge) youngest

Major Fault (Stickensided - gauge 4')

Quartz vein (2" - Pyrite on margins)

B No. 3

B No. 4

Outcrop Boundary

Pit Boundary

Creek

Hand Trench
Broken Tuff & Qtz. Monzonite
Minor Malachite staining

PLATE 1L-67-2 TO ACCOMPANY
 GEOLOGICAL AND GEOCHEMICAL
 REPORT ON INDATA LAKE, BY D.D. MAC GREGOR
 DATED AUGUST 1967

B No. 1

B No. 2

1064

To Accompany Geological-
 Geochemical Report DATED
 August 6, 1967 on the B1-20
 CLAIMS



Drawn by: D. Mac D.D. MacGregor		Traced by:	
Revised by	Date	Revised by	Date

INDATA LAKE
 GEOLOGY MAP OF WORKINGS

OMINECA M.D. NTS 93N-6

Scale: 1" = 20' Date: August 4, 1967 Plate: 1L-67-2

LEGEND

- Quartz Monzonite
- Conglomerate
- Tuff
- STRIKE
- FRACTURE
- FAULT or Shear Zone
- FAULT (G.S.C.)
- CLIFF
- Swamp
- Inferred Geological Contact.

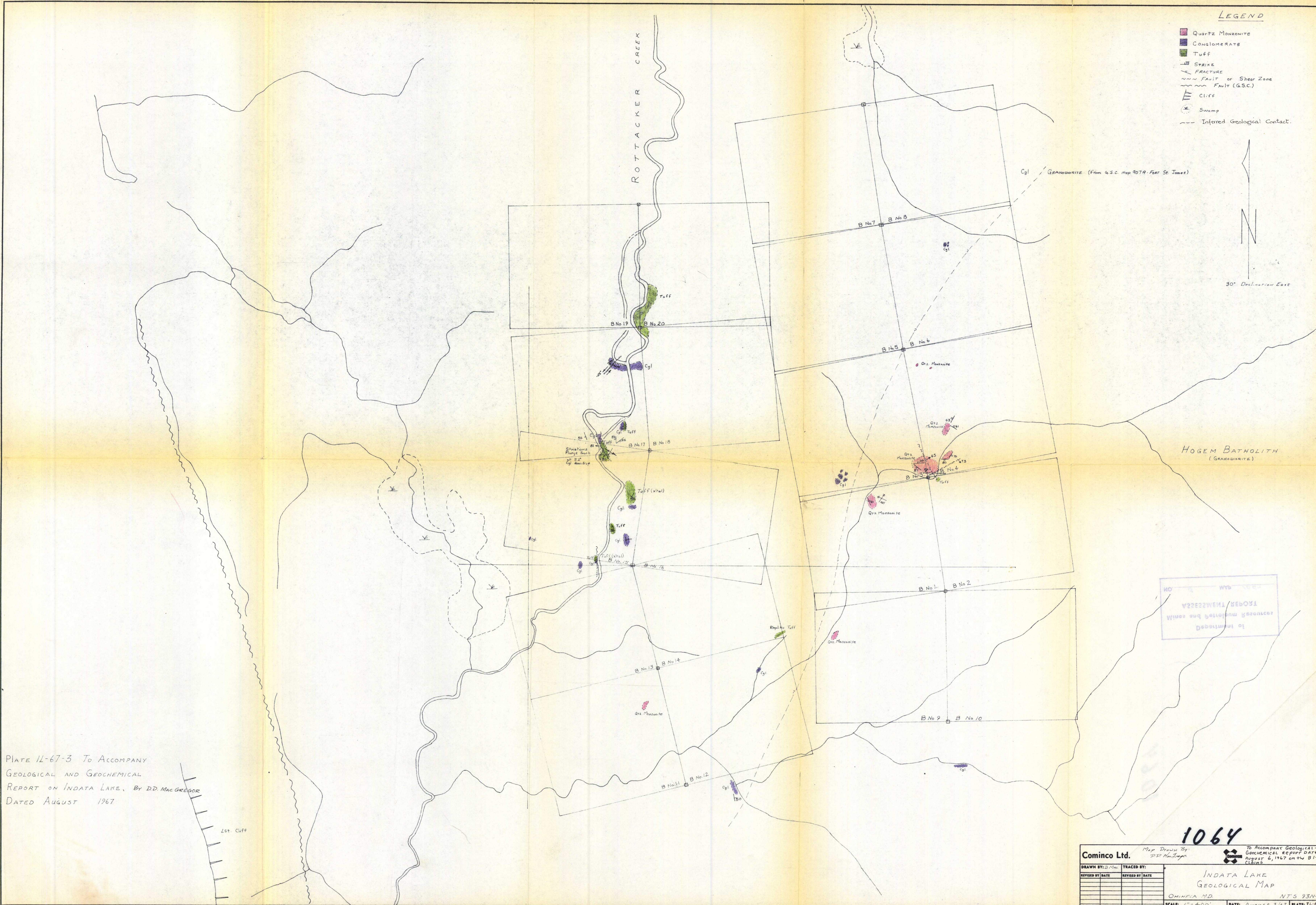
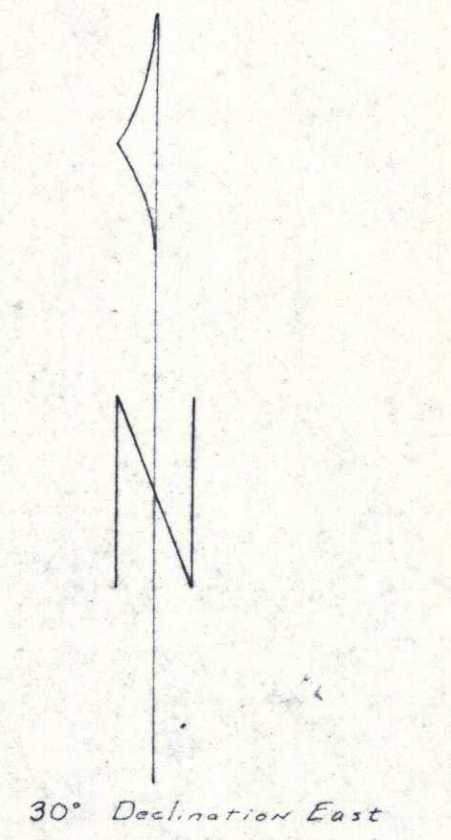
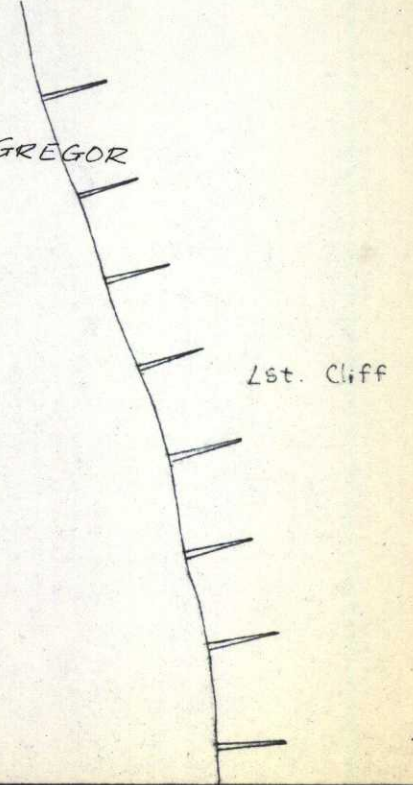


PLATE IL-67-3 To Accompany
 GEOLOGICAL AND GEOCHEMICAL
 REPORT ON INDATA LAKE, By DD Mac GREGOR
 DATED August 1967



To be inserted
 in the report
 numbered 1064

1064

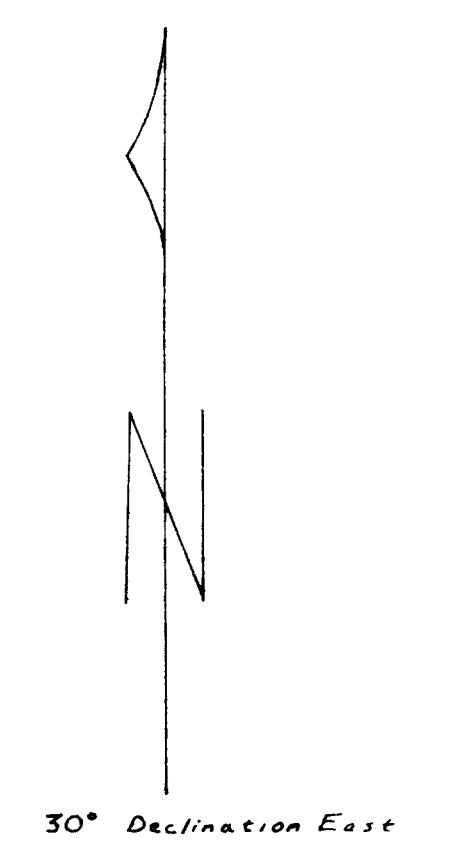
Cominco Ltd. To Accompany Geological-
GEOCHEMICAL REPORT DATED
August 6, 1967 on the B-1-20
CLAIMS

DRAWN BY: D. Mac Gregor	TRACED BY:
REVISED BY: DATE	REVISED BY: DATE

INDATA LAKE
 GEOLOGICAL MAP

OMINCO LTD. NTS 93N-6

SCALE: 1" = 400' DATE: August 3/67 PLATE: IL-67-3

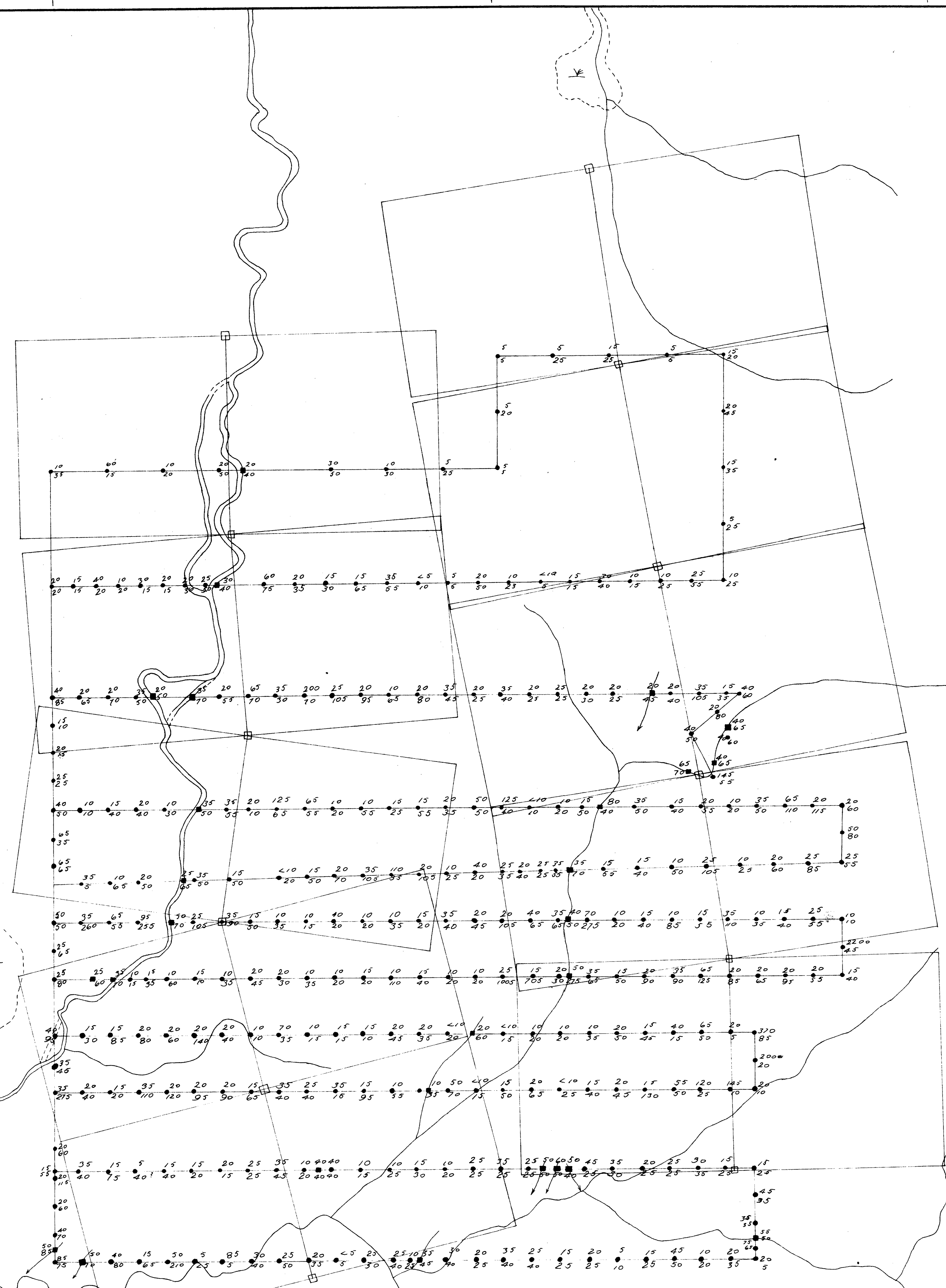


Indata Lake

LEGEND

- COPPER
- COPPER
- CLAIM POST
- CREEK
- ⊗ SWAMP

PLATE: IL 67-4 To Accompany
GEOLOGICAL AND GEOCHEMICAL
REPORT ON INDATA LAKE, BY D.D. MACGREGOR.
DATED AUGUST 1967.



1064

Cominco Ltd. *Map Drawn By D. D. MacGregor*

TO ACCOMPANY GEOLOGICAL-GEOCHEMICAL REPORT DATED August 6, 1967 ON THE B1-20 CLAIMS

INDATA LAKE

GEOCHEMICAL SURVEY

OMINECA M.D. NTS 93 N-6

SCALE: 1"=400' DATE: August 4/67 PLATE: IL-67-4

DRAWN BY: D.M.M.	TRACED BY: R.R.W.
REVISED BY: DATE	REVISED BY: DATE