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BIRALGER RESOURCES LTD.

Box 1376, 126 Willow Road  
Atikokan, Ontario POT 1C0

Telephone  
(807) 597-4526

OFFERING MEMORANDUM

No Securities Commission or similar authority in Canada has in any way passed upon the merits of the securities offered hereunder and any representation to the contrary is an offence. This memorandum constitutes an offering of the securities only in those jurisdictions where they may be lawfully offered for sale. The offering is exempt from prospectus requirements under the securities act (Ontario).

DATE: December 3, 1991

**2.15059**

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MINING LANDS BRANCH

BIRALGER RESOURCES LTD.  
(the Corporation)

(1,000,000 common shares) at \$.25 per share

Minimum Subscription \$8,000.00 or 32,000 shares @ \$.25/share

Maximum Subscription \$25,000.00 or 100,000 shares @ \$.25/share

Subscriptions received will be subject to rejection in whole or in part and the Corporation has the right to close the subscription book without notice. At the discretion of the Corporation, subscriptions will be accepted for part of the minimum (less than \$8,000.00) or maximum subscription (greater than \$25,000.00).

The offering will remain open only until January 31, 1992 and no sales will be made after the Closing Date.

This offering if fully subscribed, will net the Company \$250,000.

SECTION A

THE CORPORATION

THE CORPORATION AND ITS BUSINESS

Biralger Resources Ltd. (the 'Corporation') was incorporated in the Province of Ontario on August 22, 1986 as a private company for the purpose of conducting exploration, development and mining of minerals.

SUBSCRIPTION PRICE OF COMMON SHARES

The directors of the Corporation have fixed the price of each share at \$.25 per common share for this offering memorandum.

The directors of the Corporation have established that the minimum required proceeds from this subscription shall be \$100,000.00.

A share certificate shall be issued to each subscriber for the number of shares purchased upon receipt of payment to the Corporation of the full subscription price for the shares purchased. The Corporation reserves the right to close the subscription book without notice once the quota for the sale of these shares has been met.

The Corporation has established a general account at the Royal Bank of Canada, 111 St. Clair Avenue West, Toronto, Ontario, and agrees to deposit all subscription payments received for shares and to use these deposits in the manner described under the heading 'Conclusions' and 'Recommendations' and 'Budget'.

The Corporation will issue progress reports as work is completed.

## APPLICATION OF PROCEEDS

From the Offering of One Million (1,000,000) Common Shares

Upon successful completion of the sales of all the shares in this offering, the Corporation will have received a maximum of \$250,000.00 through the sale of one million shares.

The proceeds from the sale of each subscription will be deposited to the general account at the Royal Bank of Canada at 111 St. Clair Ave. Toronto, Ont. The funds will be drawn from this account as expenditures are incurred in implementing and carrying out the objectives of the Company.

Any interest earned on the funds in the Corporation's trust account will be transferred to the Corporation's general account from time to time as earned.

The Corporation has applied for and received certification of an Ontario Mineral Incentive grant in the amount of \$20,000.00 to be awarded if the Corporation spends a total of \$40,000.00 on the Property in 1991.

The Corporation will retain the OMIP grant funds and will allocate said funds towards regular corporate expenditures.

Please refer to page 51-53 for complete exploration expenditures recommended on Biralger Resources Ltd.'s Property.

Expenses of the issuer will be paid out of general funds. In the event that insufficient funds are raised through a minimum of 25 subscriptions, Biralger Resources Ltd. will retain all funds to carry out additional fund raising to explore and to continue its effort to qualify for listing on a Canadian stock exchange.

## DESCRIPTION OF SECURITIES

### COMMON SHARES

The common shares without par value entitles the holder thereof to

receive notice of all meetings of shareholders and to one vote for each common share held. The holder of the common shares is entitled to dividends as and when declared by the Board of Directors, and are entitled upon liquidation, dissolution or winding up of the Corporation, to receive pro rata share of the assets of the Corporation, distributable to the holders of the common shares. The common shares carry no pre-emptive or conversion rights. All issued and outstanding common shares including those offered hereby, will be fully paid and non-accessible. The Corporation is permitted to purchase its common shares.

PRINCIPLE SHARE HOLDERS

<u>Name and Address</u>	<u>Shares Owned</u>	<u>% of Common Shares</u>
Raymond A. Bernatchez 126 Willow Road Atikokan, Ontario POT 1C0	315,001	21.5 %
Gerard H. Bernatchez 76 Roche Street Matachewan, Ontario POK 1M0	155,001	10.6 %
William Plavac 350 Parkridge Road, Oakville, Ontario L6M 1B1	175,001	11.9 %
Larry Kindrachuk 2215 Wellesley Avenue Windsor, Ontario M8W 2G1	155,001	10.6 %
TOTAL SHARES	800,004	

It is intended that Raymond Bernatchez, Gerard Bernatchez, William Plavac and Larry Kindrachuk enter into a voting trust agreement. Such agreement will effect and control the nominations of the Board of Directors and a shareholder's agreement whereby each party will grant the other a right of first refusal with respect to the purchase of the above noted shares and any additional shares which may be acquired.

MINING CLAIMS ACQUIRED by the Corporation

At the time of incorporation (1986) the following mining claims were purchased from the principal share holders listed above. The purchase price of \$116,000 included the fair market value of the claims plus expenses incurred by the claim holders. The claims purchased were numbered as follows:

CAIRO GROUP - 10 claims	859204 to 859209	859240 & 859241
	1102233 & 1111066	
FLAVELLE GROUP - 53 claims	812724 to 812726	812864 to 812878
	812728 to 812734	843204 to 813206
	812736 & 812737	843209
		859172 to 859191
		859195 & 859196

All other claims have been obtained at staking cost.

The Flavelle Group eventually expired because of non submittal of assessment work due to lack of financing.

DIRECTORS AND OFFICERS

<u>NAME, POSITION, RESIDENTIAL ADDRESS</u>	<u>PRINCIPAL OCCUPATION</u>
Raymond A. Bernatchez President and Director  126 Willow Road Atikokan, Ontario POT 1CO	Consulting Geologist  Extensive background in mineral expl'n, mine development, mine production
Gerard H. Bernatchez Director  76 Roche Street, Matachewan, Ontario POK 1MO	Teacher  Part-time prospector Reeve, Dist. of Matachewan, Ontario
William (Bill) Plavac Secretary-Treasurer and Director  350 Parkridge Road, Oakville, Ontario L6M 1B1	Imperial Oil Ltd. Franchise Develop- ment Manager  Part-time prospector

Larry Kindrachuk  
Director

2215 Wellesley Ave.,  
Windsor, Ontario  
N8W 2G1

Quality control  
Engineering 2215  
background

Part-time prospector

Marc Nebel  
Director

33 Grove Hill Drive,  
Scarborough, Ontario  
M1T 3E1

Imperial Oil Ltd.  
Sr. Strategic  
Planner

Extensive management  
experience

AUDITOR: Sheila A. Brown, Chartered Accountant  
21 Amber Street, Suite 9A  
Markham, Ontario L3R 4Z3

LEGAL COUNSEL: Keith J. Jobbitt, Barrister and Solicitor  
1020 Victoria Avenue East, P.O. Box 125  
Thunder Bay, Ontario P7C 4V5

RISK FACTOR

This offering is speculative in nature. The funds raised will be spent to explore the property described in this memorandum. The said property does not contain a known commercial ore body. If the program is successful, additional funds will be required to fully evaluate the potential for a commercial mineral body.

The following information relating to the Corporation's Properties was compiled and prepared by Raymond A. Bernatchez, P.Eng., a consulting geological engineer and one of the principal parties involved in Biralger Resources Ltd. At present he is the holder of 21.5% of the issued stock in the Corporation.

## CORPORATION'S HOLDINGS

Biralger Resources Ltd. presently holds a large block of claims located in Cairo, Flavelle, Alma, and Holmes Townships located east of Matachewan, Ontario. This block of claims consists of mining claims comprising 8080 acres. The Property extends from latitude 47 58' to 48 07'; longitude 80 24' to 80 35' with its west boundary 5.6 kilometres (3.5 miles) northeast of Matachewan and 55 kilometres (34 miles) west southwest of Kirkland Lake. Paved Highway 66 runs through the south and east portion of the Property.

Most of the claims are 100% owned by the Corporation. Sixteen (16) claims are held in joint ownership with Mike Sutton, a prospector from Kirkland Lake, Ontario. Claims numbered 1137498 to 1137504 are 75% held by Mike Sutton and 25% by Biralger Resources Ltd.; claims numbered 1132175 to 1132181 are 75% held by Biralger Resources Ltd. and 25% by Mike Sutton; claims numbered 1168663 and 1168664 are 90% held by Biralger Resources Ltd. and 10% by Mike Sutton. No option payments are due on these claims.

The Property is favourably located within the Matachewan Gold Camp. The Matachewan area has had nine past producing mines. Four of these mines were gold producers, one was polymetallic copper-gold-silver, one was moly-copper, one was lead-zinc and two were asbestos producers. The area presently has a barite producer, Extender Minerals. The four (4) gold producers were: the Matachewan Consolidated Mine, Young-Davidson Mine, Ashley and Stairs Mines. The first three mines produced a total of 34,489,711 g gold (1,006,242 oz); 9,371,756 g silver (243,343oz). The Matachewan Consolidated and Young-Davidson Mines produced 95% of that gold from 1934 to 1957.

The Matachewan area is a high mineral potential area hosting several types of mineral deposits and numerous mineral occur-

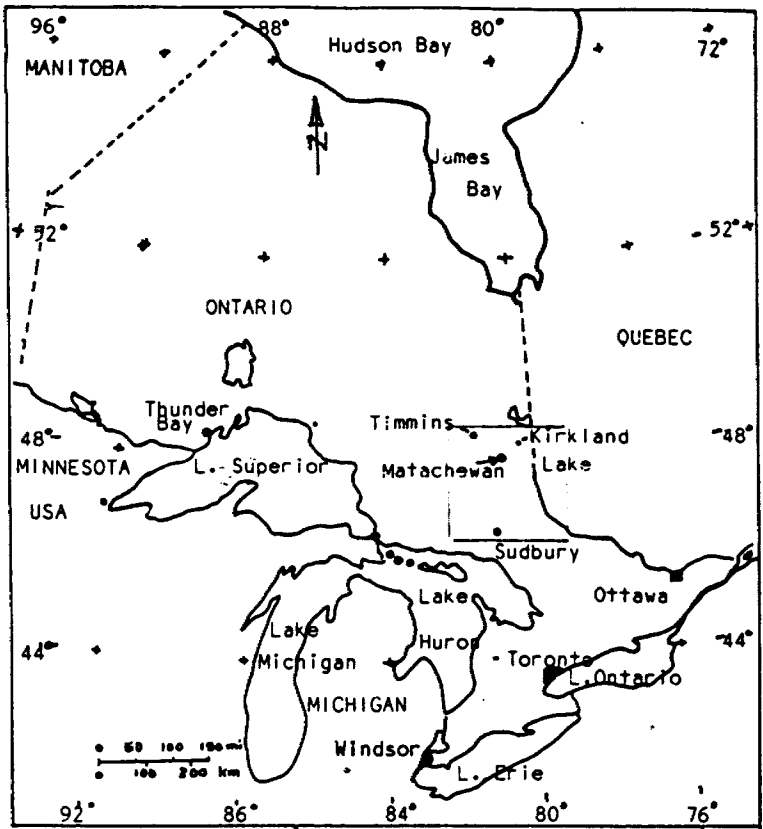
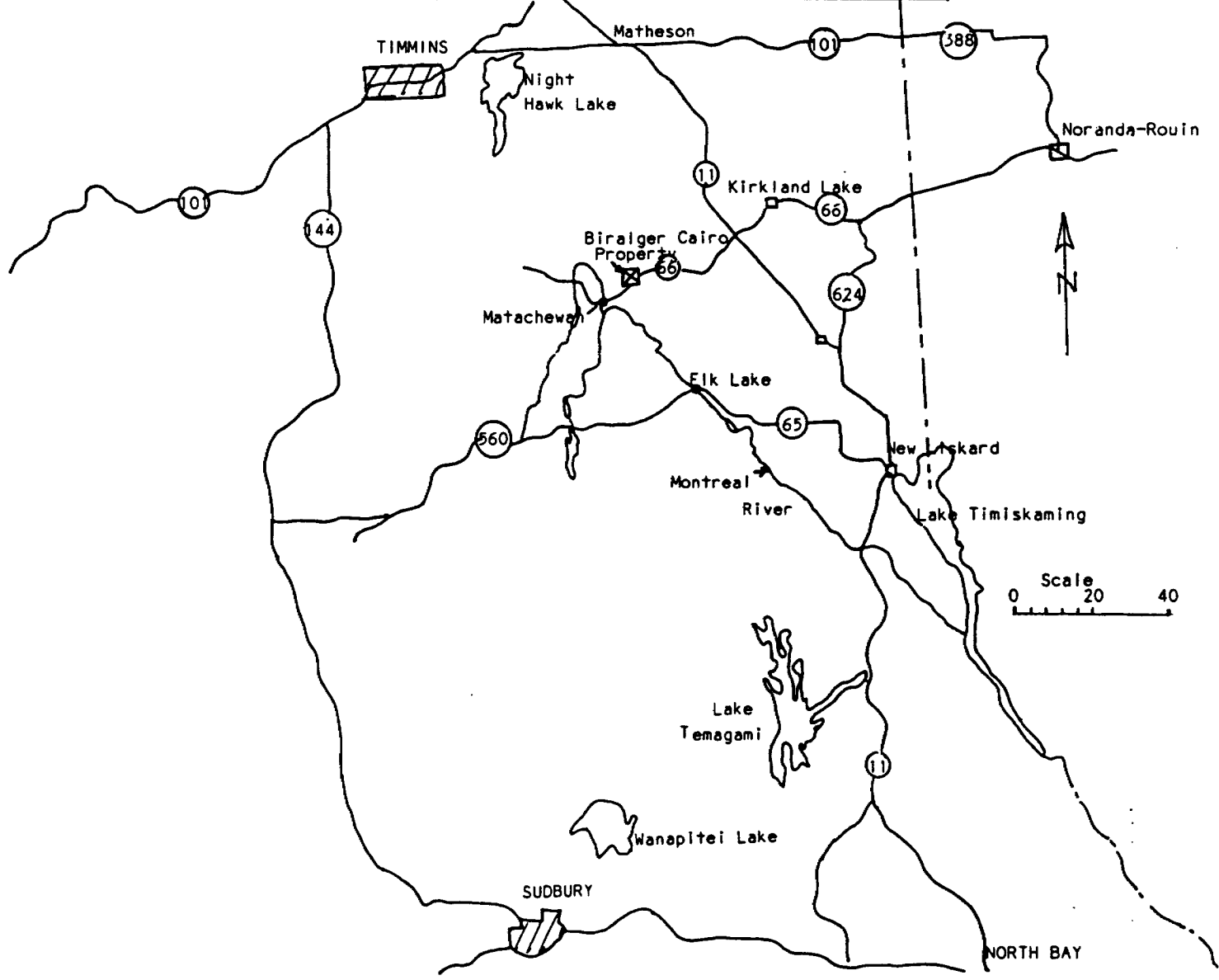


Fig. 1 Road Map





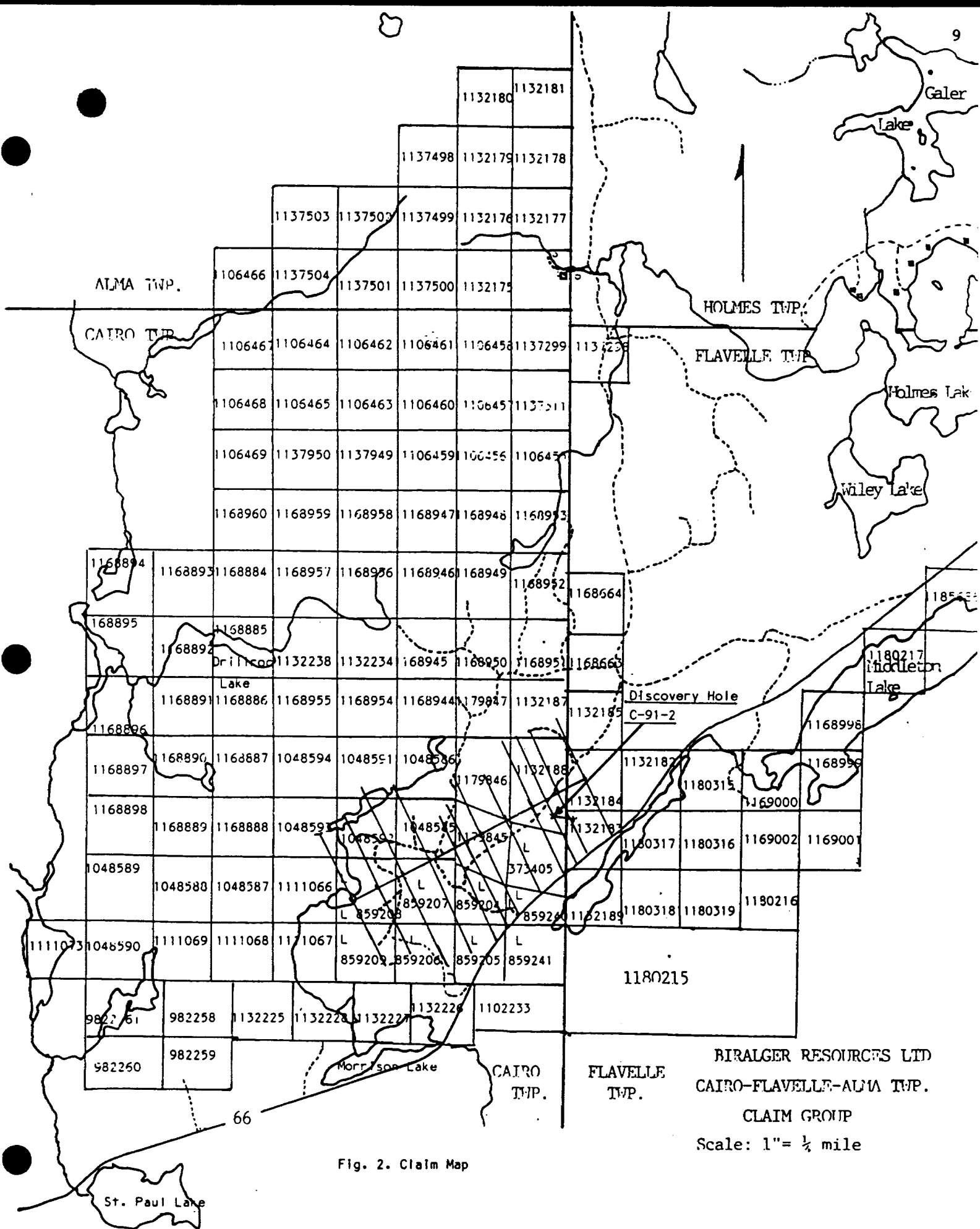
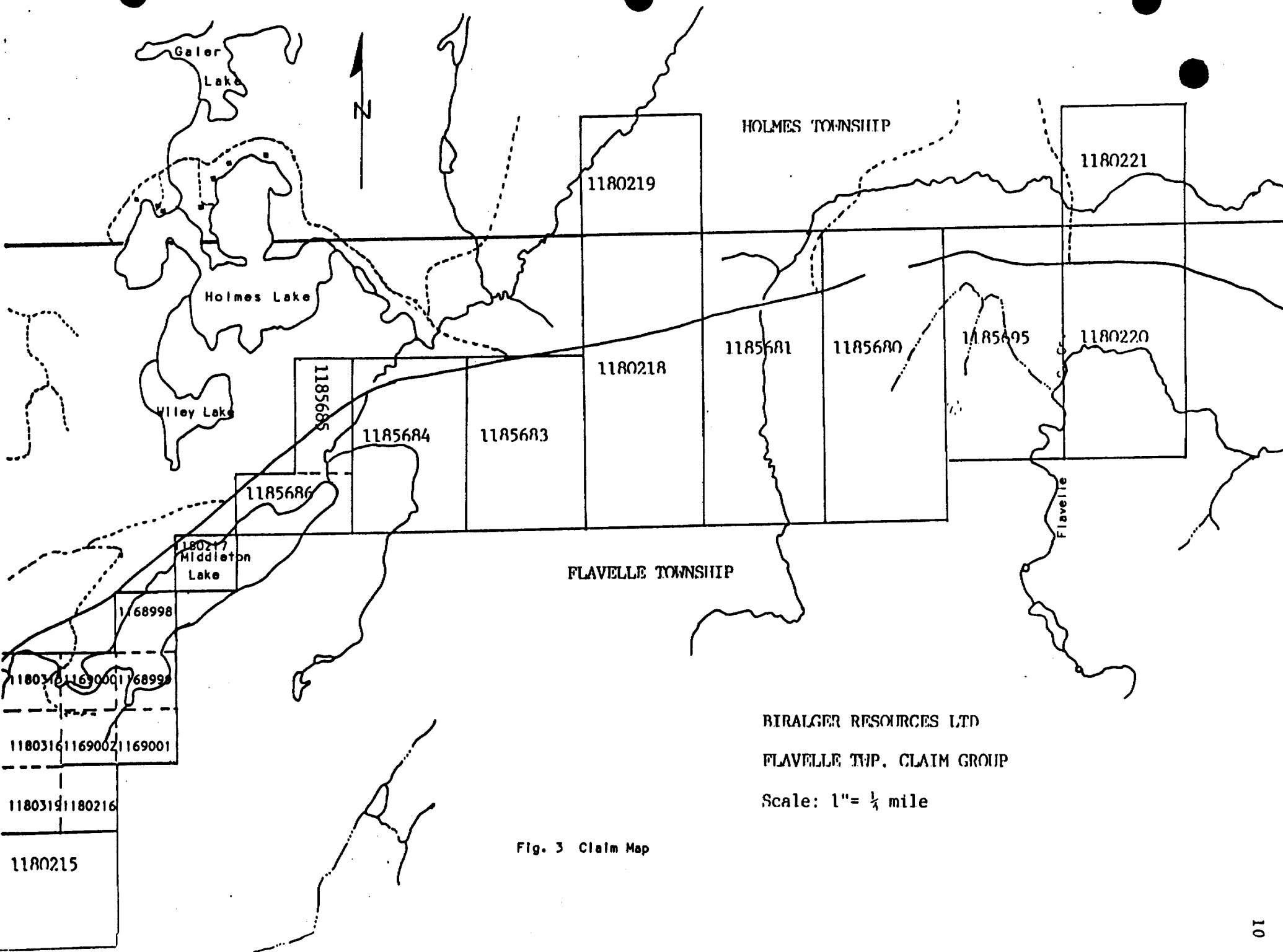


Fig. 2. Claim Map



BIRALGER RESOURCES LTD  
 FLAVELLE TWP. CLAIM GROUP  
 Scale: 1" = 1/4 mile

Fig. 3 Claim Map

rences. The type despoits are as follows:

1. Gold deposits with silver by-product
2. Copper deposits with gold, silver by-product
3. Copper-molybdenum deposits with gold, silver by-product
4. Copper-zinc base metal deposits
5. Copper-nickel base metal deposits
6. Asbestos deposits
7. Barite deposits

Biralger Resources Ltd.'s Cairo Property has the potential for hosting the first four types. These type deposits are described in detail in "Section B" of this offering memorandum.

The rocks found in the Matachewan Gold Camp are very similar to those found in the Kirkland Lake Gold Camp. Most of the gold found in both camps is localized near the major deformation zone known as the Matachewan-Kirkland Lake-Larder Lake Break or Deformation Zone.

Three (3) major deformation zones have been identified on the Property. They are a) the St. Paul-Middleton Lake Deformation Zone b) the Wiley Lake Deformation Zone c) the Galer Lake Deformation Zone.

Biralger Resources Ltd. has spent over \$80,000 for exploration on the Property since 1985. This work has led to the discovery of a major zone of copper-gold-silver mineralization capable of producing a large tonnage-low grade open pit operation.

It is Biralger's objective to raise sufficient financing through the issuance of common shares to explore and develop the full mineral potential of the Property.

The following "Section B" is an evaluation report on Biralger Resources Ltd.'s Cairo Property by Raymond A. Bernatchez, P.Eng., consulting geological engineer and President of Biralger Resources Ltd.

## SECTION B

## ECONOMIC EVALUATION

of the

## CAIRO PROPERTY

Cairo - Alma - Flavelle - Holmes  
Townships

## MATACHEWAN, ONTARIO

Lat. 47 58' to 48 02'  
Long. 80 24' to 80 35'NTS 43-P-15  
42-A-2

for

Biralger Resources Ltd.  
126 Willow Road  
P.O. Box 1376  
Atikokan, Ontario POT 1CO

by

R.A. Bernatchez, P.Eng.  
Consulting Geological EngineerPresident,  
Biralger Resources Ltd.

December 1, 1991

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## INTRODUCTION

Since 1985 Biralger Resources Ltd. has identified several wide zones of copper, gold and silver mineralization in syenite porphyry and mafic volcanic rocks. These zones are known as the a) Cairo-Flavelle Zone b) Kidd Creek Zone c) Billy Goat Zone d) G-L Zone e) Kells Zone f) Wiley Lake Zone g) Galer Lake Zone h) Flavelle Creek North and South Zones.

Most of the mineralization is hosted in fractured and altered mafic volcanic rocks or alkalic intrusive rocks of the syenite suite.

The fracturing is controlled by the emplacement of major deformation zones within the above rock types belonging to the Timiskaming and Kenojevis suite of rocks. These two rock suites are host to all the major gold mines in the Matachewan and Kirkland Lake gold camps.

The main deformation zone within these two gold camps is the Matachewan-Kirkland Lake-Larder Lake Break (or Deformation Zone). Four such breaks have been identified in the Cairo, Flavelle, Alma, and Holmes Townships by Powell et al. (1989). Three of these deformation zones have been defined on Biralger's Property. They are: a) St. Paul-Middleton Lake Deformation Zone b) Wiley Lake Deformation Zone c) Galer Lake Deformation Zone.

Many copper, gold and silver occurrences have been found within these deformation zones, both, on and beyond the Property boundary. All three deformation zones have potential for hosting a major mineral deposit. One such zone, the Cairo-Flavelle Zone has been partially defined by drilling and surface prospecting.

This report describes and evaluates all of the known major mineralized zones listed above.

## LOCATION AND ACCESS

The Corporation's Property is located 6.5 km (3.5 mi) east of Matachewan and 55 km (34 mi) west of Kirkland Lake. The Property can be reached via Highway 66, 6.5 km (3.5 mi) east from Matachewan on Highway 66. Hwy 66 connects with Hwy 11, 33 km (20 mi) southwest of Kenogami. Paved Highway 66 crosses the south and east portion of the Property. Several logging roads have been constructed from Highway 66 extending through the Property. Approximately 40% of the Property has been timbered (since 1982). This logging operation has provided numerous bedrock exposures not previously visible. This has given many opportunities for the discovery of new mineralized zones.

## PROPERTY DESCRIPTION

### PHYSICAL GEOGRAPHY

The topography on the Property is expressed as gently rolling high grounds with good drainage. Two small lakes and a creek system drain through its northern and central portion. A marshy pond 1.5 km long by 150 metres wide (0.93 mi x 492 ft) is located just east of the Cairo-Flavelle Twp boundary south of Highway 66.

The western portion of the Property is thinly covered with glacial till overburden with a possible thickness of 15.2 metres or more (50+ feet) in the swamps, creek and lake areas. On the eastern portion of the Property this bedrock is moderately covered with up to 15 metres (50 feet) of glacio-fluvial silty sand. Scattered outcrops are found throughout the area.

Approximately 40% of the Property has been logged and has provided excellent access to the south and east portions of the Property.

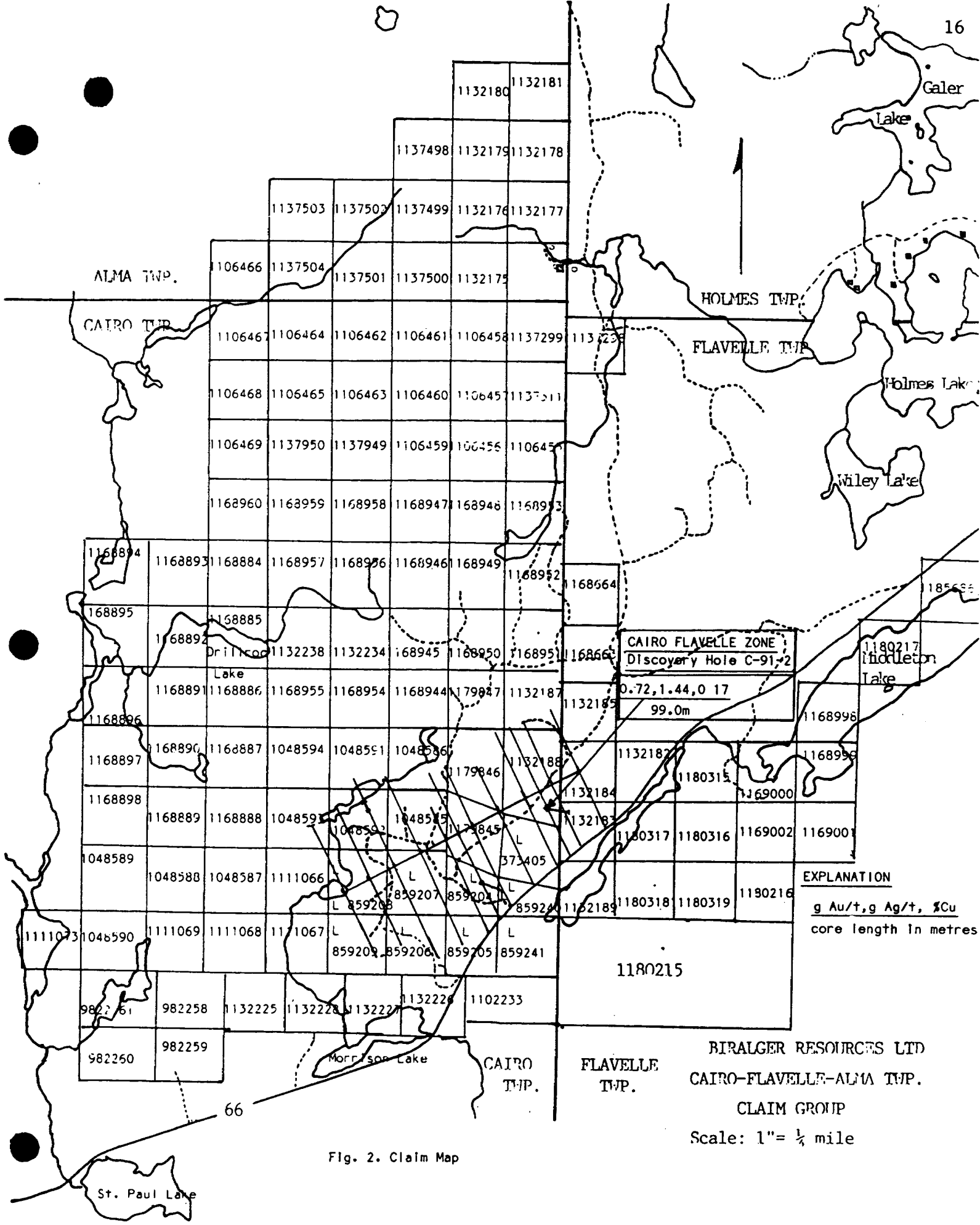


Fig. 2. Claim Map

BIRALGER RESOURCES LTD  
 CAIRO-FLAVELLE-ALMA TWP.  
 CLAIM GROUP  
 Scale: 1" = 1/4 mile



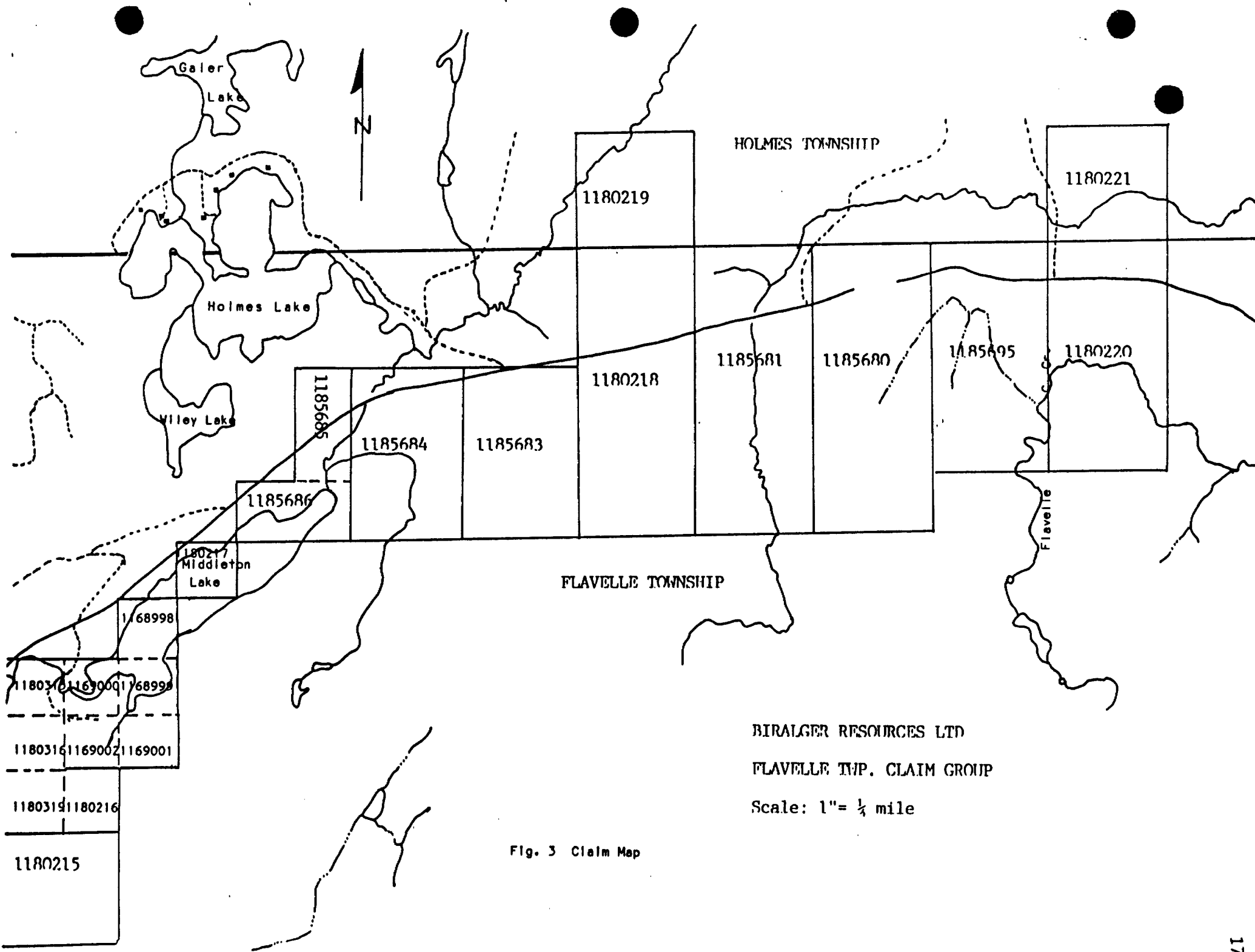


Fig. 3 Claim Map

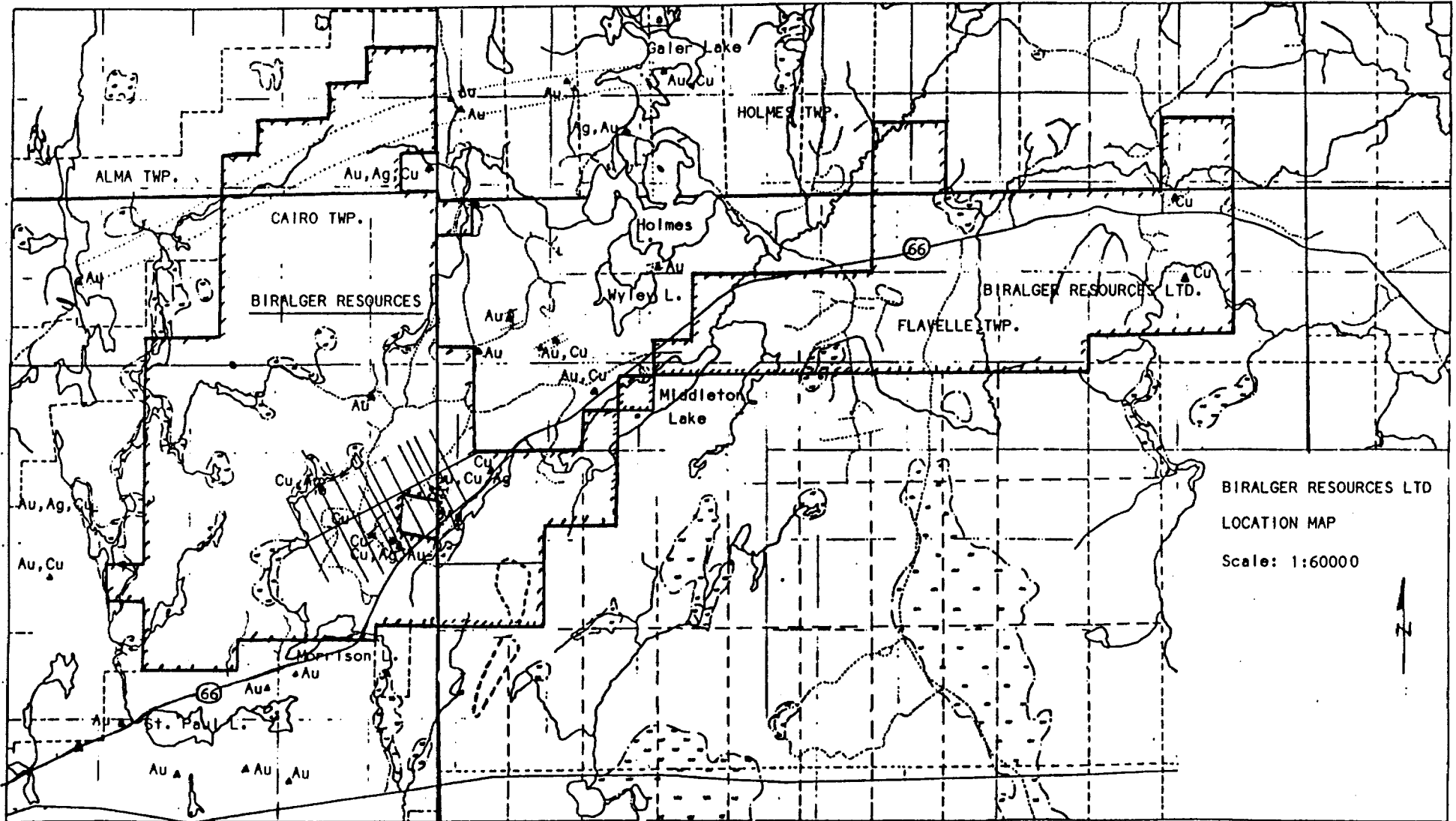


Fig. 4. Geography Map

All of the main showings are located within 1.2 km (0.75 mi) or less from Highway 66.

## EXPLORATION HISTORY

### MATACHEWAN AREA

Gold was first discovered in the Matachewan area in 1916 by Jake Davidson on Davidson Creek 3.2 kilometres west of Matachewan. This discovery became the Young-Davidson Mine. A second discovery was made shortly afterward by Sam Otisse 1 kilometre northeast of the Davidson discovery. This discovery later became the Matachewan Consolidated Mine. These two discoveries eventually became the two largest gold producers in the Matachewan Gold Camp.

From 1934 to 1957 these two mines produced a total of 32,781 kg gold (956,119 oz) and 9,110 kg silver (265,699 oz).

Since the development of these two mines, considerable exploration interest was generated in the area, and numerous types of mineral deposits such as gold, copper, silver, nickel, lead, zinc, molybdenum, asbestos and barite have been found in the Matachewan area. Eight of these occurrences became producers.

The Matachewan area has had sporadic periods of exploration activity since 1957. Some of this exploration has been directed on the two past producing gold properties, the Matachewan Consolidated and Young-Davidson Mines. Recent work on these properties by Pamorex (now Royal Oaks) has defined substantial ore reserves below the old workings of these two mines. A production decision has not been announced but is forthcoming. A new base metal discovery has been made by Queenston Minerals and Strike Resources in Robertson Township, 15 km (9.3 mi) northwest of Matachewan, with work still in progress. Inco has staked and has initiated a drilling program on its property near the

northwest corner of Biralger's Property.

#### EXPLORATION HISTORY OF PROPERTY AND IMMEDIATE AREA

The area was first prospected for gold in the 1920's and 1930's by J.B. Moyneur, Hugh Kells, Ed Otisse, J. O'Brien, Frank Westcutt and D. Miller near the southern contact of the Cairo Stock and the volcanic, from St. Paul Lake and Morrison Lake. Several old prospect pits have been found in this area by Biralger and others. Dyer (1935) reported that prior to 1935, Bloom Lake Consolidated Mines Ltd. carried out some stripping and trenching on ten claims in the Morrison Lake area in a highly silicified and carbonatized shear zone at this syenite-volcanic contact. Dyer also reported that gold values were reported from this contact.

Work was carried out in 1914 by L. Brookbank on a single claim at the southeast corner of Alma Twp. Two old pits were excavated on a quartz vein lens striking N15 E. The quartz vein contains chalcopyrite, galena, calcite, and fluorite. Lovell (ODM 1967) obtained from 5 grab samples, an average assay of 9.2 g/t gold (0.27 oz/ton) and 445.7 g/t silver (133 oz/ton). Biralger (1989) obtained assays of 9.2 g/t gold (0.27 ox/ton); 120 g/t silver (3.5 oz/ton); 4% copper and 3.5% lead from the same vein.

In 1952, Dominion Gulf Company carried out line cutting, a ground magnetic survey, and detailed geological mapping in the St. Paul-Morrison Lake area, and on the Cairo-Flavelle Zone, 2 km northeast of Morrison Lake. This work was followed up with the drilling of 4 holes. Two of the holes were drilled 321 m (1054 ft) and 335 m (1100 ft) deep just under the west end of Morrison Lake from Highway 66. These holes intersected a highly silicified and shear volcanics and syenite porphyry mineralized with chalcopyrite, pyrite, quartz and calcite veining. Two other holes were drilled north and south 800 metres (2,624.7 feet) west

of St. Paul Lake on the north edge of the road. These holes also intersected similar mineralization over 30 metres (98.4 feet) in width but with higher quartz veinlet content. Their detailed geological mapping around the Cairo-Flavelle Zone did not detect any chalcopyrite mineralization, yet Biralger Resources Ltd. observed frequent disseminated chalcopyrite mineralization in both, the syenite and volcanic rocks in this area.

The Morrison Lake area was explored again in 1965 by Sisco Metals of Ontario. Line cutting and a magnetic survey was carried out and their survey covered Biralger's claims 859205, 859240 and 859241. Strong magnetic anomalies were detected east and west of Highway 66 and north of Morrison Lake, along the Cairo-Flavelle Twp. line. Drilling was recommended but none was carried out.

From 1974 to 1979 F.J. Garbutt carried out a ground magnetic, soil geochemical, radiometric survey and geological mapping over present leased claim L373405. Garbutt's soil geochem survey detected copper and zinc anomalies on this claim. He then optioned his claim to Ecstall Mining in 1974. Ecstall staked an additional 23 claims in the area and carried out line cutting, ground geophysical magnetic survey on these claims. Mechanical stripping was performed on 3 claims 373405, 387568, 387569. Several diamond and rotary drill holes were drilled over the stripped areas. Only one diamond drill hole C-46-2 was reported for assessment work. It was drilled at an Azimuth of N45 W, at -45 dip, 30 metres (100 ft) north and 60 metres (200 ft) east of No.1 post of claim L373405. This hole intersected 183.1 metres (601.7 ft) of mineralized mafic volcanics and syenite porphyry. Chalcopyrite, quartz-calcite veins, magnetite, pyrite and fluorite are the main minerals noted in the log sheets. No assays were reported by Ecstall. Biralger's Hole C-91-2 was drilled 25 metres (82 ft) northeast of Hole C-46-2 and it intersected similar mineralization and rock types; however, Biralger's Hole was drilled in the opposite direction, to the east southeast. Biralger's hole C-91-2 returned 0.72 g/t gold (0.021oz/ton), 1.44 g/t silver

(0.042 oz/ton) and 0.17% copper over 98.8 metres (324 feet). Ecstall dropped the option on the Property in 1976.

In 1979, Garbutt concluded that the claim had potential for large tonnage low grade copper-gold-silver deposits hosted in sheared, silicified and carbonatized syenite porphyry and mafic volcanic rocks.

Exstall's drilling did define a copper-gold-silver zone containing 350,000 tons grading 1.71 g/t gold (0.05 oz/ton) and 0.5% copper (verbal communication H. Lovell Resident Geologist MNM Kirkland Lake). This zone is known as the Cairo-Flavelle Zone.

In 1985 Falconbridge optioned several properties from various groups in Cairo, Flavelle and Holmes Townships. Mechanical stripping, geological mapping, trenching and diamond drilling was carried out on the Goldhunter Property located along Highway 66 and south of Biralger's Property. Falconbridge also carried out mechanical stripping northwest of Highway 66 in Cairo Twp on Biralger's present claims 1179846 and 179847. They also carried out an extensive airborne survey over a large block of claims in Holmes, Flavelle and Cairo Townships but not on the Goldhunter Property. Falconbridge subsequently dropped all of their options and interest in the area.

In 1989 and 1990 Roger Dufresne carried out prospecting and mechanical stripping in the northwest corner of Flavelle Township northwest of Highway 66. Some of this work covered the old workings of Stan Welsh south and northeast and west of Wiley Lake. Gold values were found in a highly carbonatized shear zone in the northeast corner of Wiley Lake. Several new grey-blue quartz veins were exposed by mechanical stripping 1 km (0.62 mi) west of Wiley Lake on the north side of a new logging road. It is reported that one of these veins returned over 34 g/t gold (1.0 oz/ton). A small outcrop containing blue-grey quartz vein, along the Separation Lake Road on the east boundary of

Bliralger's claim 1168664 near post No.1 is reported to contain over 38 g/t gold (1.1 oz/ton) (reported by Mike Sutton, Kirkland Lake). All of the veins in this area have a N70-80 E strike.

The old McChesney showing located southwest of Wiley Lake is reported to contain visible gold (Moore, 1966). This Property was worked in the 1930's and 1940's. In 1966 Moore sampled this showing and reported 2.4 g/t gold (0.07 oz/ton) and 130 g/t silver (3.8 oz/ton).

In 1970, Mr. G.S. (Stan) Welsh, a well-known prospector and mine developer from Matachewan, conducted a magnetic survey in the same vicinity, a portion of which was over Biralger's present claims numbered 859204, 859240, 1102233. Similar magnetic high anomalies were detected in this surveyed area. No further work was done.

In 1982-83, Pamour Porcupine Mines Ltd. carried out a geophysical magnetic and VLF-EM survey and geological mapping over a large area of Biralger's present claims in Cairo Township. The geophysical survey detected several magnetic and electromagnetic anomalies. The old trenches on present claim 1048592 were also noted by Pamour. Further work was recommended by Kren A. Jensen but none was carried out.

In 1989, Queenston Mining Inc. optioned the Dufresne Property. In 1990, Queenston carried out a program of line cutting, geophysical surveys and geological investigation on the Property. This work was followed by a diamond drilling program in the Wiley Lake area. In June of 1990, Queenston Mining reported in the Northern Miner, an assay of 641.1 g/t gold (18.6 oz/ton) obtained from a grab sample from the gold showing in the northeast corner of Wiley Lake.

In 1985 the group of R. Bernatchez, G. Bernatchez, B. Plavac and L. Kindrachuk, staked claims in Cairo and Flavelle Townships. In

1986 the group incorporated Biralger Resources Ltd. From 1986 to 1987, Biralger Resources Ltd. carried out limited mechanical stripping along the east and west side of the logging road on claims L859204. This stripping exposed two wide disseminated copper zones in fractured and altered syenite porphyry. The fractured zones measured 50 to 150 metres (164 to 492.1 feet) in width. The mineralization consists of pyrite, chalcopyrite, quartz-calcite veins, fluorite, magnetite, minor galena and molybdenite. In November of 1989 Biralger carried out additional mechanical stripping on claim L859204, L859240 and 1179845. This work confirmed the eastern extension of the two zones discovered in 1987. The two main zones were named the Kidd Creek Zone, located on claims 859204 and 1179845 and the Billy Goat Zone, located on claims 859204 and 859240. These showings are located on present grid lines 3+00 and 4+00W at 2+50S and 4+50S respectively.

In 1989-90 Biralger continued to acquire additional claims in the Cairo, Alma and Flavelle Twp.

During the winter of 1990-91, Biralger Resources Ltd. carried out a limited program of line cutting, ground geophysical surveys and diamond drilling. The geophysical surveys confirmed numerous magnetic and VLF-EM anomalies. The drilling program consisted of drilling three holes to test some of the known copper zones. The first hole, C-91-1 was drilled southeast at Az 130, -45° dip to a depth of 182.5 metres (600 feet) to test the Billy Goat Zone exposed by mechanical stripping in 1989. This hole intersected 152.4 m (500 ft) of mineralized, silicified and hematized syenite porphyry. The upper section contained significant chalcopyrite mineralization from 6.8 m to 20.9 m {14.1 m (46.2 ft)} returning 0.2 % copper. Additional copper mineralization was found over 80 metres (263 feet) of outcrop north of the collar of this hole.

Hole C-91-2 was drilled to a depth of 182.5 m (598.8 ft) on line 3+00E at 1+52S at -45° dip Az 100° to test the Cairo-Flavelle



Zone. This hole is located 25 metres (82 feet) northwest but was drilled in the opposite direction from Ecstall's (1976) drill hole C-46-2. Hole C-91-2 intersected continuous chalcopyrite mineralization from 5.5 metres (18.0 feet) to the bottom of the hole at 182.5 metres (598.8 feet). Values of up to .6% copper and 3.42 g/t gold (0.1oz/ton) were obtained from this hole. A section from 20.5 m to 119.3 m (98.8 metres {324 feet}) averaged 0.72 g/t gold (0.021 oz/ton); 1.44 g/t silver (0.042 oz/ton) and 0.17% copper. This zone has excellent potential for an open pit, large tonnage, low grade deposit. Further prospecting in the summer of 1991 has traced disseminated chalcopyrite mineralization across another 50 metres (164 feet) north, 800 metres (2,625 feet) east and 300 metres (984 feet) south of the collar of hole C-91-2.

Hole C-91-3 was drilled on line 8+00W at 4+25N to a depth of 117.0 metres (384 ft) at a dip of  $-45^{\circ}$  and Az  $333^{\circ}$  on claim 1048592 to test the Kells Zone. This hole confirmed the mineralization exposed on surface in some old trenches but was not drilled deep enough to intersect the McChesney Fault Zone located downhole another 50 to 75 metres (164 to 246 feet). The ground geophysical survey in this area confirmed this fault zone under Kells Lake north of this hole. Trace gold and copper values were obtained from this hole.

In May of 1991, Biralger contracted Aerodat Ltd. to conduct a 200 kilometre geophysical survey over 122 claims in Cairo, Flavelle and Alma Townships. The survey detected three (3) major geophysical anomaly trends coinciding with the three deformation zones identified by Powell (OGS 1989) in Flavelle and Holmes Townships. Several known copper, gold and silver occurrences are coincident with these deformation zones and anomalies. Weak EM airborne conductors were detected, and coincident with these deformation zones.

A limited geological program was carried out by Biralger in the

summer of 1991 evaluating these airborne geophysical anomalies and other showings on the Property and in the area.

This geological evaluation resulted in the staking of a new block of ground in Flavelle Twp. Two old copper showings were investigated at the east end of Flavelle Twp. Moore (OGM 1966) reported obtaining 0.53% copper from metadiorite south of Flavelle Creek on Conc. VI Lot 2, S $\frac{1}{2}$  NW  $\frac{1}{4}$ . A second showing was investigated in the same concession and lot in the N  $\frac{1}{4}$  NW  $\frac{1}{4}$ , 100 metres (328 feet) north of Hwy 66. Recent work by Resources Hysoex Inc. (1988) in this area has identified strong east northeast magnetic and electromagnetic anomalies near these two copper showings.

Exploration activity in the Matachewan area is ongoing. Royal Oaks Resources has delineated by drilling, significant gold reserves below the old workings of the two former gold producers, the Young-Davidson Mine and the Matachewan Consolidated Mine. Queenston Mining Inc. and Strike Minerals continue to explore their Robertson Twp. base metal copper-zinc Property 15 km (9.3 mi) northwest of Matachewan.

Inco is initiating a drill program on their Property near the northwest corner of Biralger's Property. They are testing the western section of the Galer Lake Deformation Zone within the Cairo stock.

In 1991, Strike Minerals staked a block of 44 claims at the west boundary of Biralger's Property. No work has been done on these claims as yet.

#### REGIONAL GEOLOGY

The geology of the Matachewan area was mapped by Burrows (1918, 1920), Cooke (1919), Dyer (1935), and more recently by Moore

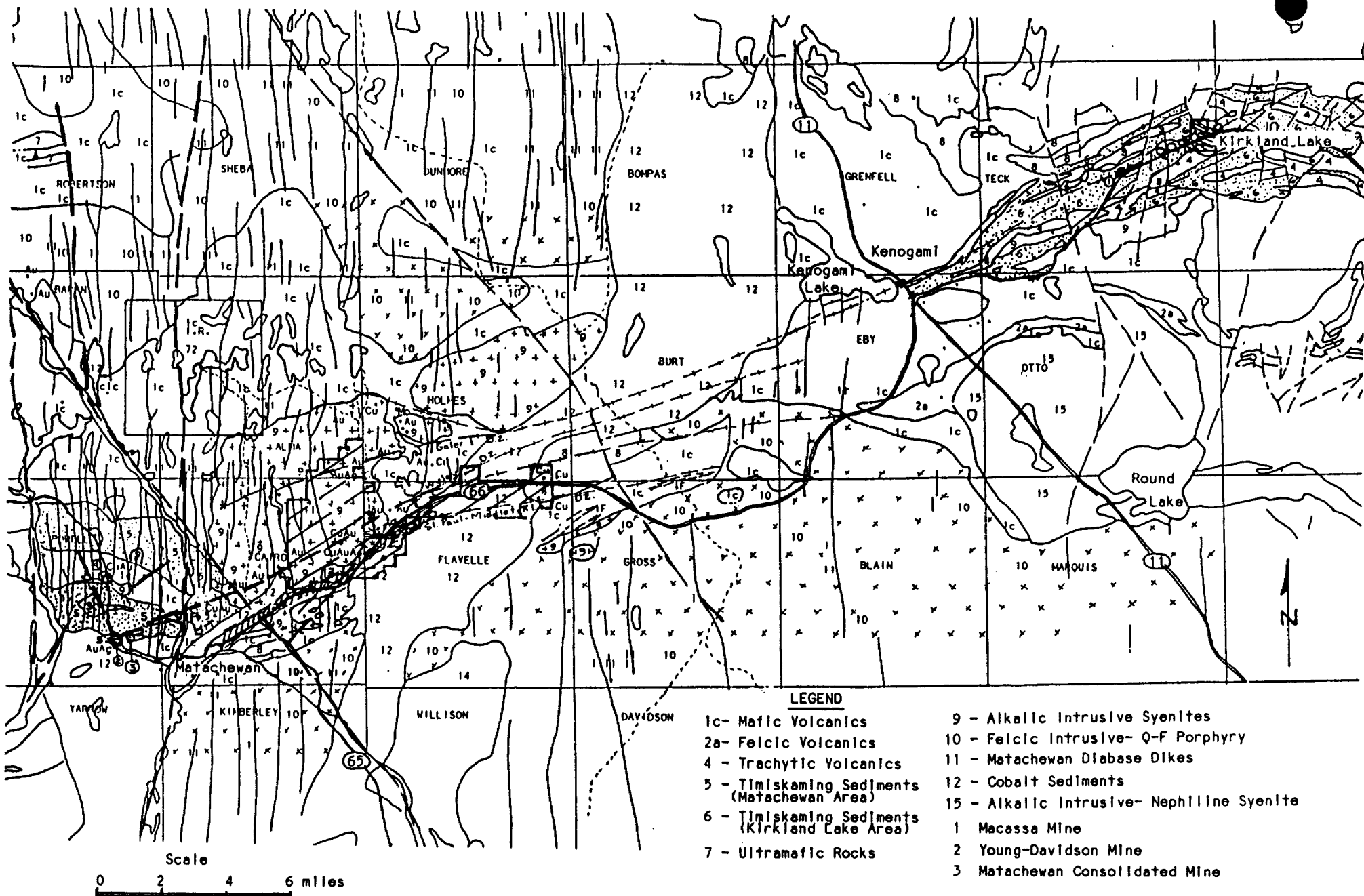
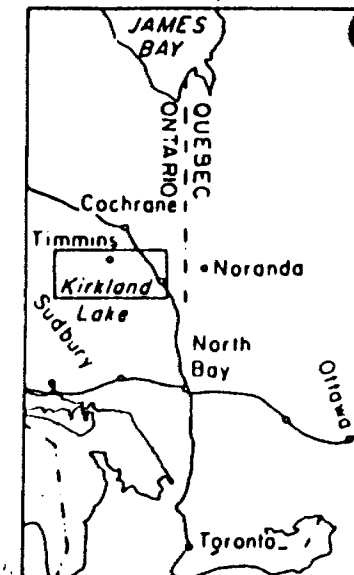
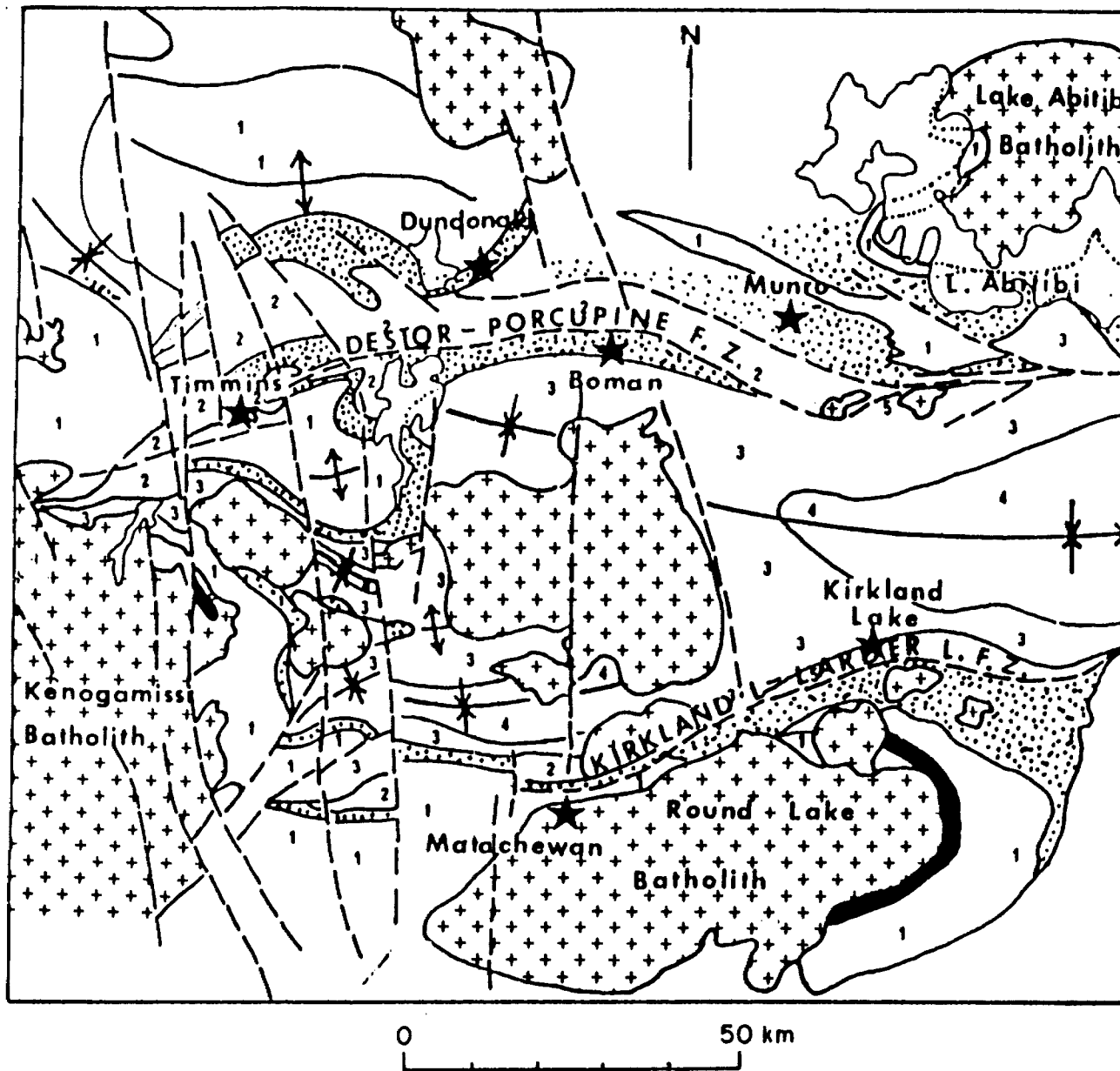


Fig. 5 Regional Geology Map - Matachewan - Kirkland Lake Area.



- Key
- upper supergroup  
volcanic rocks:
- 5 alkaline
  - 4 calc-alkaline
  - 3 tholeiitic
  - komatiitic
- lower supergroups
- 2 sedimentary rocks
  - 1 calc-alkaline and tholeiitic volcanic rocks
  - komatiitic volcanic rocks

Figure 6. Distribution of komatiites and general stratigraphy in the Timmins-Kirkland Lake part of the Abitibi Subprovince (Jensen and Pyke 1982).

(1966), Lovell (1967), Sinclair (1978) and Powell-Hodgson-Hanes (1989).

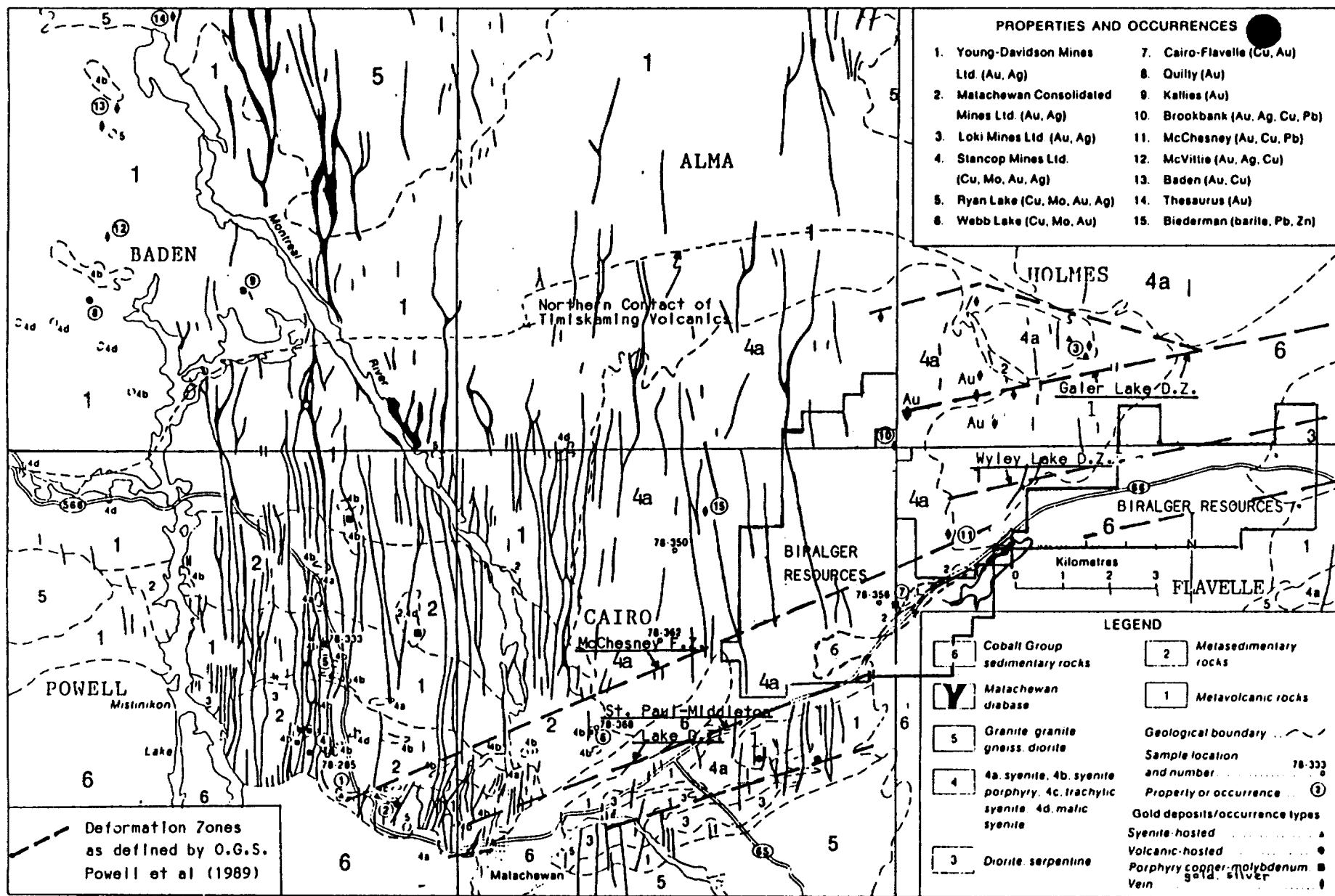
The rocks in the region are of Precambrian Age, and they form part of the Abitibi Greenstone Belt. The older Archean rocks consist of tholeiitic basalts and andesite flows with minor iron formation and interflow sedimentary rocks. A younger series of Archean rocks which belongs to the Timiskaming Group is also found in the area. The Timiskaming Group forms an east-west trending narrow continuous belt through the Matachewan-Kirkland Lake area measuring 0.5 km to 10 km (0.31 mi to 6.21 mi) in width. The Group consists of sedimentary, volcanic and intrusive rocks. The conglomeritic sediments are composed of massive and porphyritic syenitic, granitic, rhyolitic, trachytic, dioritic, gabbroic quartz, jasper and chert pebbles and boulders with a fine to medium-grained sandstone and greywacke matrix. The Timiskaming alkalic volcanic rocks consist of massive, pillowed and amygdaloidal trachytic flows. The intrusive rocks consist of syenite, augite syenite and porphyritic syenite.

The late intrusive activity consists of a period of felsic intrusions. These intrusions predominantly consist of trondhjemite, tonalite and younger granodiorite. The Otto, Cairo, Holmes and Nixon Lake Stocks form part of these late felsic intrusives. Matachewan diabase dikes intrude the above rock formations in the Matachewan area.

#### LOCAL GEOLOGY

The local geology of the area is dominated by the Cairo Stock. This Stock intrudes the Blake River, Kinojevis and Timiskaming group of rock in Cairo, Alma, Holmes and Flavelle Townships. This suite of rocks extends further west-northwest and easterly into Powell, Bannockburn, Hincks, Cleaver, McNeil, and Robertson

FIGURE 2. General geology of the Matachewan area (modified from Moor, 1966 and Lovell, 1967).



Modified by R.A. Bernatchez, 1990

fig. 7 Geology and property locations, Matachewan area.

**Legend**

- 1- Volcanics
- 6- Timiskaming Sediments
- 7- Cobalt Sediments
- 9- Syenite, Augite syenite Intrusives

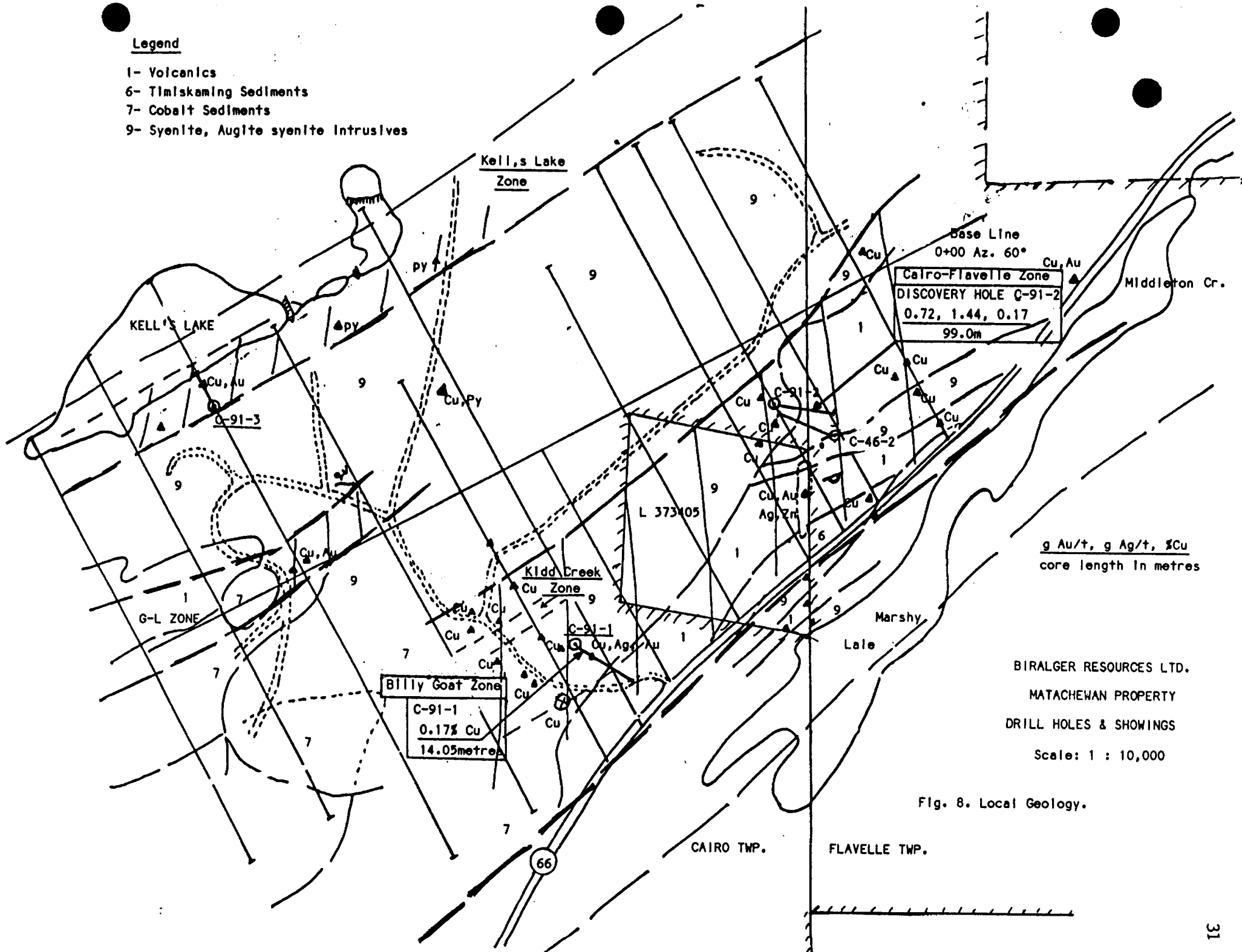


Fig. 8. Local Geology.

Townships.

The Blake River and Kinojevis groups form a synclinal fold plunging gently eastward and extending to the Kirkland Lake Gold Camp. The contact between these two units is also the host for the new copper-zinc base metal deposit discovered by Queenston Mining Inc. and Strike Minerals in Robertson Twp. 15 km (9.3 mi) northwest of Biralger's Property.

Timiskaming and Kinojevis rocks are found striking east-northeast in Powell, Cairo, Flavelle and Holmes Townships. The Cairo Stock dominates the geology on the western portion of Biralger's Property. It has intruded within the central portion of the Kinojevis-Timiskaming suite of rocks. The volcanic rocks consist of tholeiitic and calc-alkalic suites of the Kinojevis Group and the trachitic suite belonging to the Timiskaming Group. The volcanic rocks are overlain conformably to the south by Timiskaming sedimentary rocks composed of conglomerates, arkose greywacke and quartzite. The Timiskaming sediments in turn are overlain to the south conformably by basalts and ultramafic lavas, followed by turbiditic sedimentary rocks of the Larder Lake Group. Timiskaming sediments and Kinojevis trachytic volcanic rocks occupy the southern and eastern portion of the Property. Both, the Cairo Stock and the Timiskaming and Kinojevis suites have been intruded by late Matachewan north-south trending diabase dykes. In the southeast section of Cairo Twp., southwest and central part of Flavelle Twp., the Timiskaming and Larder Lake suites of rocks are covered by the younger Huronian Cobalt sediments. The Cobalt sediments also cover a large portion of the St. Paul - Middleton Lake Deformation Zone in Flavelle Twp. No information is available as to how thick these late sediments are in this area. Some outcrops of these sediments in Cairo Twp. north of Morrison Lake are about 10-12 metres (33-39 feet) thick. It can be inferred from topographic maps of the area that the late Cobalt sediments are at least 40-50 metres (131-164 feet) thick along prominent ridges 1.5 km (0.9 mi) southeast of the Cairo-Flavelle



zone south of Highway 66; and over 40 metres (131.2 feet) thick in Conc. VI Lot 4 of Flavelle Two south of Highway 66. The remaining area may be covered with a thinner layer of Cobalt sediment because of the lower topographic relief.

The syenite that forms the Cairo Stock and related dykes in the Matachewan area varies texturally and compositionally. It consists of medium to coarse grained equigranular hornblende syenite consisting of 70-80% orthoclase, 10-15% hornblende and 5-10% albite with minor quartz, biotite, magnetite and sphene. The central part of the Stock is enriched in quartz and may represent a crude mineralogical zonation. The western part of the Stock is very coarse grained, trachytic syenite porphyry.

Numerous offshoots of small syenite dykes and plugs intrude the Archean and sedimentary rocks. They consist of syenite porphyry and trachytic syenite.

The syenite porphyry consists of 20% orthoclase as phenocrysts in a matrix of albite, hornblende and/or biotite and minor quartz. Trachytic syenite ranges from fine to coarse grained consisting mainly of orthoclase with minor amounts of albite. The trachytic syenite was an important host for the gold ore mined at the Matachewan Consolidated and the Young-Davidson Mines.

The age of the syenite has been established at about 2700 million years (Ma). Some syenite bodies appear deformed at their contacts which suggests that they may be only slightly younger than the volcanics they intrude.

#### STRUCTURAL GEOLOGY

Recent work carried out by Powell, Hodgson and Hanes (OGS 1989) in the Matachewan-Kenogami area has identified four (4) deformation zones in Holmes and Flavelle Twps. These deformation zones

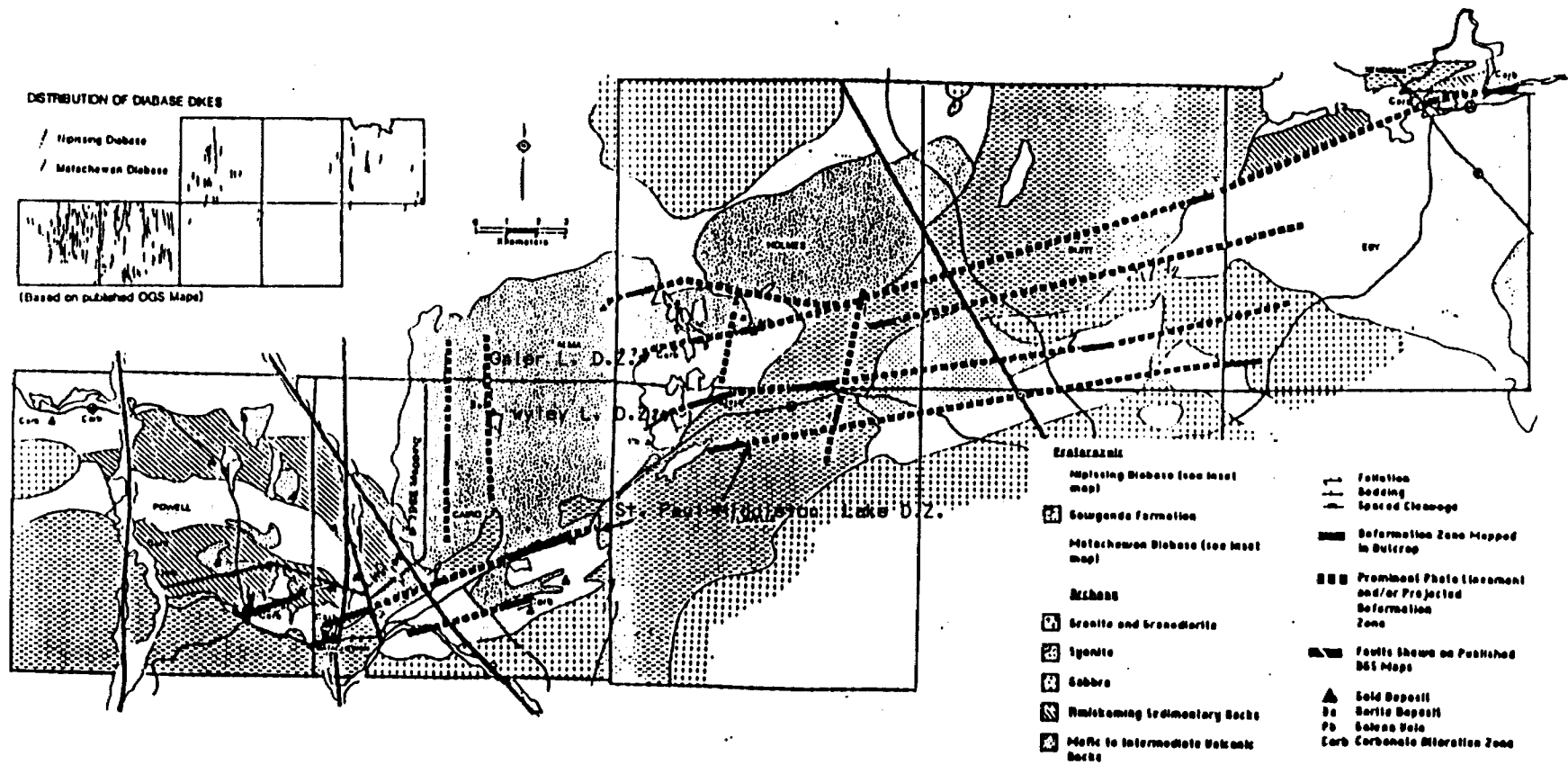


Figure 329.2. Geological map of 1988 study area (Eby, Burt, Holmes, Flavells, Calro and Powell townships). After Lovell (1967, 1972) and Moore (1966).

form the western extension of the Kirkland Lake-Larder Lake-Cadillac Break west of Kenogami through to Matachewan. Biralger has named these 4 deformation zones (D.Z.) as follows from the north to south: 1) Willard Lake D.Z. 2) Galer Lake D.Z. 3) Wiley Lake D.Z. and 4) St. Paul-Middleton Lake D.Z. The last three (3) deformation zones have been defined on Biralger's Property. Lovell (ODM 1966) mapped a wide shear zone in the St. Paul Lake and Morrison Lake areas of Cairo Twp. This shear zone coincides with the St. Paul-Middleton Lake Deformation Zone.

The Wiley Lake DZ is located between Wiley and Holmes Lakes. The third deformation zone striking west and west-southwest from Galer Lake is known as the Galer Lake Deformation Zone.

All three major deformation zones consist of zones of moderate to intense and brittle to ductile shearing. Multiple parallel to sub-parallel fracture zones may occur within or between these deformation zones. The fracture zones may truncate to form a wider single zone such as the St. Paul-Middleton Lake Deformation Zone.

These deformation zones are the major host for the copper, gold and silver mineralization on the Property and in the Matachewan area.

These structures could be host to very large copper-gold-silver deposits similar in size, grade and geology to the Mt. Milligan deposit. The Mt. Milligan deposit contains 300 million tonnes grading at 0.5 g/t gold (330 million tons at 0.015 oz/ton) and 0.22% copper.

The Wiley Lake Deformation Zone strikes west-southwesterly towards the Matachewan Consolidated and the Young-Davidson Mines. The Drill Bit Zone and the Kells Zone are also coincident with this deformation zone.

The third and most northerly Galer Lake Deformation Zone strikes east-northeast through the Cairo Stock from Whiskeyjack Lake eastward to Galer and Abel Lakes. It is covered east of Abel Lake by late Cobalt Sediments and glacial silty sand. This deformation zone can be traced to the Ryan Lake copper-gold-silver past producer.

Most of the gold deposits in the Matachewan and Kirkland Lake Gold Camps are contained within or adjacent to these east-northeast deformation zones which form the westerly extension of the Kirkland Lake-Larder Lake-Cadillac Break.

## ECONOMIC GEOLOGY

The Matachewan area has had six (6) producing gold and base metal mines. Their production outputs are listed below:

<u>Gold Mines</u>		Au (oz)	Ag (oz)				
1) Young-Davidson Mine	(1934-56)	585,690	131,989				
2) Matachewan Consolidated Mine	(1934-54)	370,429	133,710				
3) Ashley Gold Mine	(1932-36)	50,123	7,644				
4) Stairs Mine	(1966)	3,573	1,767				
<u>Base Metal Mines</u>		Au (oz)	Ag (oz)	Cu (tons)	Mo (tons)	Pb (tons)	Zn (tons)
5) Ryan Lake Mine	(1950-57) (1964-65)	1,352	36,141	2,498	5.7		
6) Matarrow Mines	(1952-53)		4,853			1230	458
TOTALS		Au (oz)	Ag (oz)	Cu (tons)	Mo (tons)	Pb (tons)	Zn (tons)
		1,011,167	316,104	2,498	5.7	1230	458

Other minerals such as barite and asbestos have been produced in the Matachewan area. Over 45 other gold and base metal occurrences have also been documented in the area.

These gold and base metal occurrences are found in a variety of geological environments. These environments are classified as follows:

## a) Gold Deposits

- 1) quartz-calcite veins in fractured syenites
- 2) " " " " " volcanics
- 3) auriferous pyrite in syenite porphyry
- 4) quartz-carbonate veins in green carbonates

b) Base Metal Deposits

- 1) copper-gold-silver in fractured altered syenite
- 2) " " " " " " " volcanics
- 3) vein copper in volcanics
- 4) volcanogenic massive sulphide copper-zinc
- 5) volcanogenic lead-zinc deposits
- 6) copper-nickel in ultramafic intrusives

The most productive environments have been the syenite porphyry and volcanic hosted gold deposits, such as in the Young-Davidson and Matachewan Consolidated Mines. These two types of deposits are found on Biralger's Property.

Since 1986, Biralger Resources Ltd. has identified seven major exploration targets which may host gold and/or copper-gold-silver deposits. Four of these targets have been confirmed to contain significant copper, gold and silver mineralization. The three other targets are known to contain mainly gold with values up to 1.13 oz/ton. The following is a list of the zones found on the Property:

- 1) Cairo-Flavelle Zone
- 2) Billy Goat Zone
- 3) Kidd Creek Zone
- 4) G-L Zone
- 5) McChesney Zone
- 6) Wiley Lake Zone
- 7) Galer Lake Zone

1) CAIRO - FLAVELLE ZONE

This zone is located on line 3+00E from 0+50S to 4+00S along the Flavelle Twp. boundary line 350 metres (1148 feet) north of Highway 66 on claims 1132183, 1132184 and 1132188. The zone is located at the syenite porphyry-volcanic contact. The syenite and volcanic rocks have been extensively fractured, altered and mineralized with disseminated chalcopyrite quartz-calcite veins with minor bornite and pyrite in both, the rock types and in the veins. The copper zone has been traced across a width of over 350 metres (1148 feet) and a length of over 800 metres (2625 feet) in scattered outcrops. Biralger's hole C-91-2 drilled at -45° dip and to a depth of 162.5m (598.7 ft) returned 0.72 g gold/t (0.02 oz per ton); 1.44 g silver/t (0.042 oz/ton) and

0.17% copper over 99.0m (324.8 ft) from 20.5m to 119.5m. Chalcopyrite was observed throughout every metre of core from 5.5-182.5m (177m (580.7ft)). Lower grades of copper, gold and silver are also present with this copper mineralization. The consistency, width, disseminated nature, and grade of this mineralization makes this zone very amenable to open pit mining. The above grade is comparable to the porphyry copper-gold deposits found in British Columbia, such as the Mt. Milligan deposit which is reported to contain 300 million tonnes at 0.5 g gold/t (330 million tons at 0.015 oz/ton) and 0.22% copper. The tonnage potential for the Cairo-Flavelle zone could be substantial if the zone can be traced over the dimension indicated above.

## 2) BILLY GOAT ZONE

This zone was discovered in 1987 as a result of mechanical stripping. It is located on claim 859204, 859240 and may extend onto leased claim 373405. The zone has been partially exposed by mechanical stripping between 3+00W and 5+00W from 3+50S and 5+00S. Hole C-91-1 drilled 182.5 m (598.7 ft) deep at -45° dip at Az 130° intersected 152.4m (500 ft) of the mineralized zone in syenite porphyry. The syenite porphyry is fractured, mineralized and highly silicified. The mineralization in the syenite consists of pyrite and chalcopyrite, fluorite and galena as dissemination in fractures and in quartz veinlets. Pyrite is the most abundant sulphide (up to 10%) throughout the core. A section from 6.8m, 20.9m (14.1 m) (46.2 ft) contains significantly more chalcopyrite with secondary malachite along the fractures. This section graded 0.20% copper and 0.7 g/t silver (0.02 oz/ton) and trace gold. The remaining section from 152.4 to 182.5 m (30.1 m) (98.7 ft) consisted of mafic volcanic tuffs, lapilli tuffs and pillowed flows mineralized with 5-15% disseminated magnetite grains minor pyrite and calcite veining. More copper mineralization was observed in outcrops for 80 metres (263 feet) north of the drill hole collar.

### 3) KIDD CREEK ZONE

This zone is located 300 metres (934 feet) northwest of Highway 66 on claims 859204 and 1179845. It has been exposed by mechanical stripping, near line 3+00W, 4+00W and 6+00W from 2+25S to 2+50S. The zone strikes N60 E. The zone consists of fractured, sheared, silicified, pyritized and hematized syenite porphyry. The syenite porphyry is mineralized with disseminated pyrite, chalcopryite and quartz-calcite veining. The veining contains chalcopryite, galena, fluorite and pyrite. This zone strikes directly towards the Cairo-Flavelle zone 600 metres (1969 feet) to the northeast through claim L373405. The geophysics survey detected a coincident magnetic low and weak VLF-EM conductor associated with the central portion of the shear zone on line 4+00W and 3+00W at 2+50S. Further work is required on this zone.

### 4) G-L ZONE

This zone is located 25 to 50 metres (82 to 164 feet) north of the baseline at 8+00W on claims 859207 and 1048585. It also strikes N60 E. It is partially exposed along the edge of a creek flowing southward. The zone consists of fractured, silicified and hematized syenite porphyry mineralized with disseminated pyrite, minor chalcopryite, quartz veinlets and fluorite. It has been traced southwest for about 100 metres (328 feet) to the edge of a cliff of Cobalt Sediments. A strong coincident VLF-EM survey has been detected coinciding with this zone. The conductive zone appears to flank the south edge of a magnetic high under the Cobalt Sediments. The magnetic high is presumed to be caused by mafic volcanic rocks containing high magnetite content. This zone may be similar to the Cairo-Flavelle copper zone. Volcanic rocks have been located in outcrops 200 metres (656 ft) north of the conductor between lines 10+00W and 12+00W. Aerodat has classified this area as a priority target.

### 5) KELLS ZONE

This zone is located on claims 1048585, 1048586, 1048592, 1049547, 1049543. It trends N60 E and shows up as a prominent



airphoto lineament in the Cairo Stock. This lineament can be traced northeastward from line 8+00W, 5+30N for 3 km (1.86 mi) to the McChesney showing on the adjacent property. Samples taken from the old McChesney showing by Moore (ODM 1966) reported a grab sample with 2.4 g/t gold (0.07 oz/ton) and 130 g/t silver (3.8 oz/ton). Biralger drilled the Kells Zone with hole C-91-3 on line 8+00W at 4+25N at -45° dip and 333° Az. The hole failed to intersect the McChesney Fault but did intersect mineralized altered and hematized syenite porphyry. Limited financing prevented the Company from drilling the hole deeper. The mineralization consists of disseminated pyrite, chalcopyrite and magnetite in silicified and hematized syenite porphyry. The fractures in the syenite contain quartz-calcite veinlets with minor chalcopyrite, galena, tourmaline and fluorite. Some fractures contain chlorite. Movement is indicated along these chlorite fractures. This drill hole should be extended another 100 metres (328 feet) to test the McChesney Fault under Kells Lake.

#### 6) WILEY LAKE ZONE

This zone is located 1.5 km (0.93 mi) northwest of Highway 66. It has been clearly identified outside the Property at the northeast corner of Wiley Lake as a wide shear zone trending N70-80° E. This zone can be traced west southwest from this location for another 1.7 km (1 mi) to a multiple blue-grey quartz vein zone striking N70-80° E onto Biralger's east claims 1168664, 1168949 - 952. One of these blue-gray quartz veins is located along the Separation Lake Road near the northeast corner of claim 1168664. A sample taken by Mike Sutton from this vein is reported to contain 38 g/t gold (1.11 oz/ton). Two other blue grey quartz veins have been found on Biralger's claim 1168945 on the south side of the bush road. Biralger sampled the veins in 1991 and assay results of two samples

The north vein is 0.5 metres (1.5 ft) and the south vein is 1 metre (3.3 ft) wide. The veins are about 3-4 metres apart (9.8-13.1 ft) and are hosted in highly sheared and silicified syenite

porphyry. The airborne survey detected several conductive anomalies in this area. The veining described above coincides with the above airborne anomalies. Aerodat has designated this as a high priority exploration target because of the intersection of N-S faults and the east-northeast Wiley Lake Deformation Zone.

#### 7) GALER LAKE ZONE

This zone coincides with the Galer Lake Deformation Zone which strikes N70° E through the Cairo Stock from Abel Lake to Fort Matachewan. Several gold showings have been identified along this deformation zone at Galer Lake, west of Galer Lake and at Browning Lake. Grades have varied from 3.42 g/t gold (0.10 oz/ton) to 38.7 g/t gold (1.13 oz/ton). Most of the work done on this structure has been on claims outside the Property to the east. This structure has been shown to be strongly auriferous. The numerous anomalies detected in the airborne survey on the Property have never been explored. The area is extensively covered with overburden and will require detailed geophysical evaluation with follow-up mechanical stripping and diamond drilling.

#### DRILL RESULTS

The 1991 winter drill program consisted of drilling three (3) holes each testing a separate geophysical anomaly and known mineralized copper zones.

Hole C-91-1 was spotted at 3+50W, 4+25S and drilled to a depth of 182.5 metres (600 feet) at 130° Az and a dip of -45° southeast. This hole tested a wide zone of copper mineralization in altered syenite porphyry exposed in stripping in 1989. This hole was collared at surface in bedrock and intersected 155.7 metres (511 feet) of altered, fractured and mineralized syenite porphyry.

The mineralization consisted of pyrite, chalcopyrite, galena, fluorite and quartz. The syenite porphyry is highly silicified and hematized. A good copper zone was intersected from 6.8 metres to 20.9 metres [(14.1 m) (462 ft)], returning 0.20% copper with trace gold and silver values. The core from surface to 6.8 metres (22.3 ft) was oxidized and weathered. Further copper mineralization was noted in outcrops for an additional 80 metres northwest of the hole collar. Consistent low gold and silver values were detected in the first 155 metres (508 feet) of this hole.

Hole C-91-2 was started on line 3+00E at 1+52S and drilled to a depth of 182.5 metres (600 feet) at 110° Az and a dip of -45° southeast. This hole intersected continuous chalcopyrite mineralization in both, the syenite porphyry and mafic trachytic volcanic rocks. The hole was collared in bedrock at 5.5 metres (18 feet) and intersected mainly syenite with minor mafic volcanic from 5.5 to 88.6 m [(83.1 metres)(272.6 feet)] and mainly mafic volcanic from 88.6 to 182.5 m [(93.9 metres)(308 feet)]. Both rock types were mineralized, fractured and altered. Mineralization consisted mainly of chalcopyrite with minor bornite, pyrite, magnetite. Blue-grey quartz veining was observed in both rock types but was more abundant in the volcanics. The chalcopyrite was found disseminated and in fractures in both, the host rocks, and in the blue-grey quartz veining. This mineralization is very similar to that found by Dominion Gulf in their drilling in the St. Paul and Morrison Lake area. A prospecting program in the summer of 1991 also confirmed the presence of disseminated chalcopyrite mineralization in several small scattered outcrops 800 metres (2625 feet) east, 150 metres (492 feet) north, 800-1000 metres (2625-3280 feet) west and 300 metres (984 feet) south of this hole. A strong VLF-EM anomaly is located on strike on line 6+00E at 1+00S. Surface prospecting revealed no outcrop at this location. This anomaly could not be verified by surface prospecting because of overburden, but represents a prime exploration target.

The third hole, C-91-3 failed to test the McChesney Fault. It is located on line 3+00 W at 4+25N at an Az of 333° and dipping -45° northwest to a depth of 117 metres (384 feet). This hole intersected fractured, altered and mineralized hornblende syenite and syenite porphyry intruded by a mafic dyke. The syenites are pervasively fractured and mineralized with disseminated pyrite, chalcopyrite, fluorite, magnetite, tourmaline and quartz-calcite veinlets. Sulphides are present in the altered syenite and quartz-calcite veinlets. Some of the syenite has been intensely hematized to a brick red colour. A total of 32 samples representing 58.6 metres (192.2 feet) of core were analysed for gold. Only trace amounts of gold were detected. Only the first four (4) samples were assayed for copper with only anomalous values obtained. This hole did intersect mineralization south of the fault but did not intersect the McChesney Fault. The ground and airborne geophysical surveys identified a bedrock conductor and magnetic low anomaly associated with this Fault. The drilling did confirm the presence of a wide zone of fractured and mineralized syenite typical of the gold bearing syenite porphyries in the Matachewan area. The McChesney Fault can be traced northeastward to the old McChesney gold showing in Flavelle Township. The McChesney showing is reported to contain visible gold. One sample taken by Moore (1966) returned 2.4 g/t gold (0.07 oz/ton) and 130 g/t silver (3.8 oz/ton).

#### GEOPHYSICAL SURVEYS

The Geological Survey of Canada's airborne magnetic map sheets 1506 G, 289 G, 287 G and 290 G (1959-60) have clearly defined the Cairo Stock, Timiskaming and Kinogewis volcanic and sedimentary rocks between Kirkland Lake and Matachewan as an east northeast oriented magnetic trend.

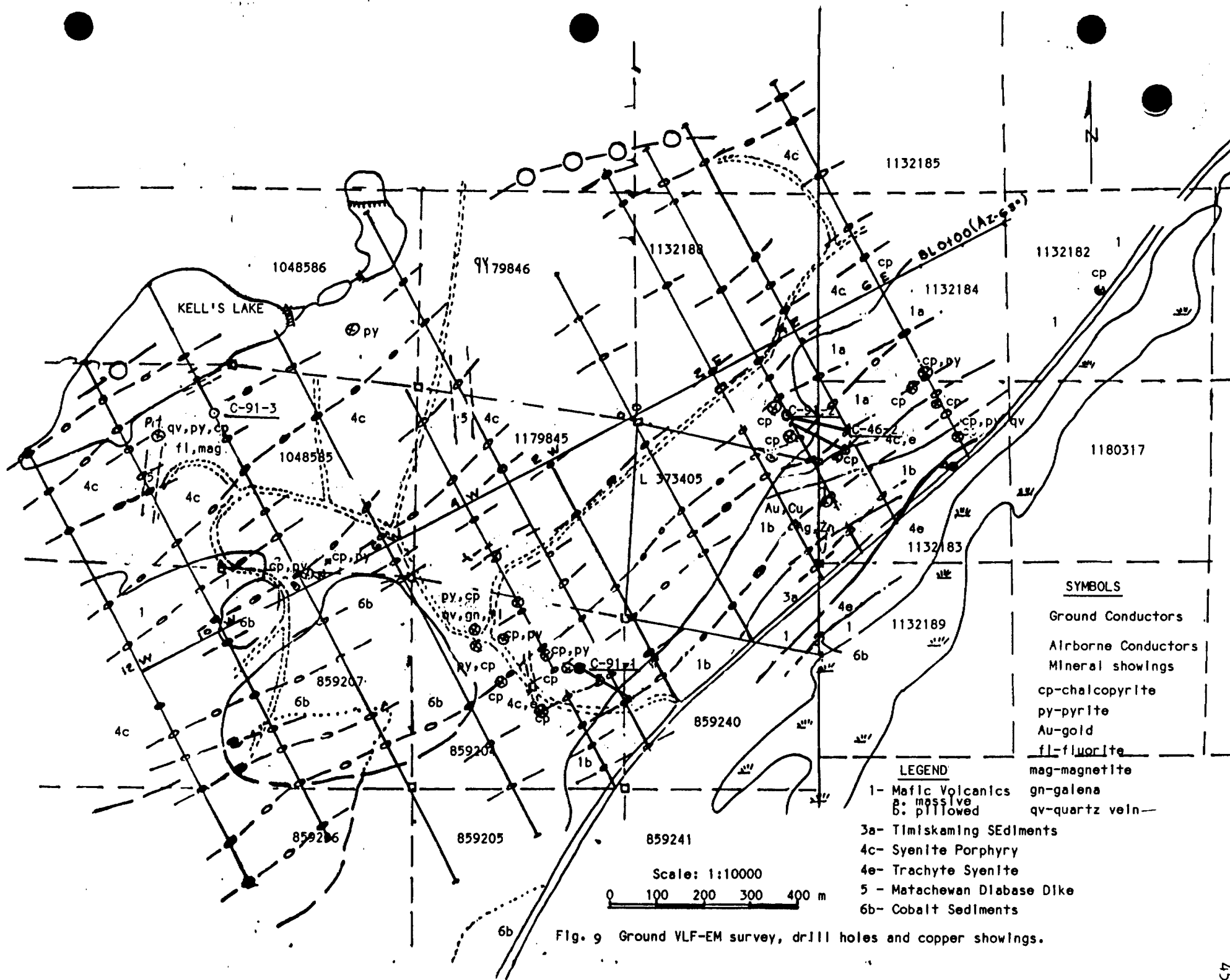


Fig. 9 Ground VLF-EM survey, drill holes and copper showings.

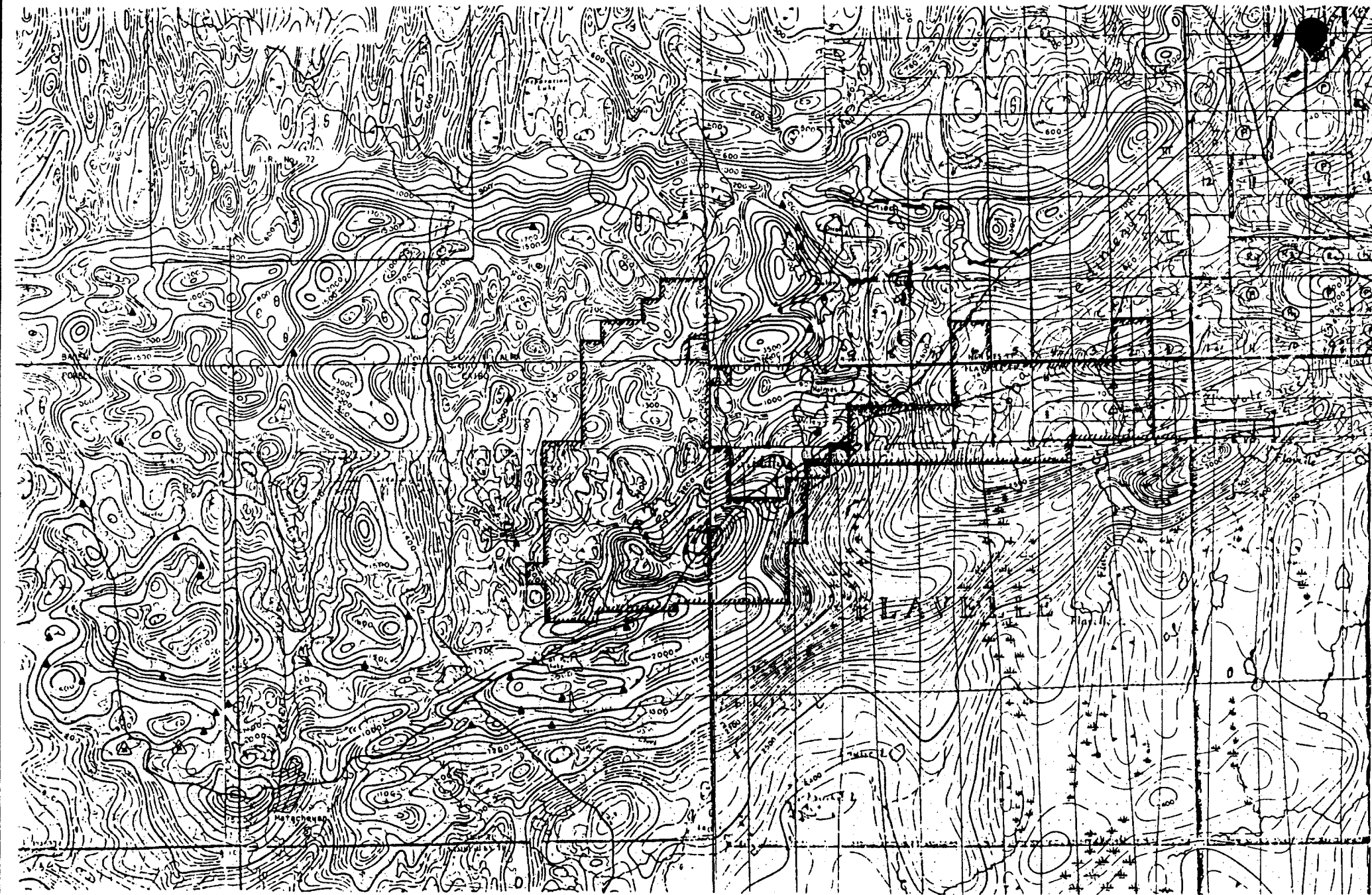


Fig. 11. Aeromagnetic Map - Matachewan East Area

0 1 2 mi.

The deformation zones defined by Powell et al (1989) can be traced on these G.S.C. magnetic maps as lineal magnetic low trends suggesting alteration and silicification of the syenite rocks within these deformation zones. Biralger's airborne data has confirmed the above observations.

Biralger's 1991 ground geophysical survey has successfully delineated all three major deformation zones. The ground geophysical magnetic and electromagnetic surveys have clearly and accurately defined several known and unknown structures over a small portion of Biralger's Property. Only about 5-10% of the Property has been surveyed. Complete coverage of the Property with a magnetic and VLF-EM survey is highly recommended. Biralger has covered only 10% of its Property by ground geophysical surveys.

## CONCLUSIONS

The 1991 exploration program on the Matachewan Property has been very successful in identifying eight (8) separate major zones of copper, gold and silver mineralization.

These mineralized zones are localized within fractured and altered syenite porphyry and mafic volcanic trachytic flows of Timiskaming age.

The four (4) fractured zones in Holmes and Flavelle Twp. are the westerly expression of the Kirkland Lake-Larder Lake Deformation Zone.

The rock types hosting the mineralization on the Property are very similar to the gold bearing host rocks found at the Matachewan Consolidated, Young-Davidson and several of the major gold producers in the Kirkland Lake Gold Camp.

The Property has potential to host several major deposits associated with the three deformation zones a) St. Paul-Middleton Lake Deformation Zone b) Wiley Lake Deformation Zone c) Galer Lake Deformation Zone. The St. Paul-Middleton Lake and Wiley Lake Deformation Zones extend eastward under the Cobalt Sediments in Holmes and Flavelle Twps. These two Zones have never been explored under the Cobalt Sediments.

The Cairo-Flavelle Zone represents a major proven copper-gold-silver bearing zone for the development of a large tonnage-low grade deposit. The Zone has been defined for 1000 metres (3280 feet) in length and 250 metres (820 feet) in width. This Zone may extend further east under Middleton Creek and the Cobalt Sediments.

The Kidd Creek and Billy Goat Zones appear to be southwest extensions of the Cairo-Flavelle Zone.



20

The St. Paul-Middleton Lake Deformation Zone is known to contain copper and gold as indicated in Dominion Gulf's 1953 drilling in the St. Paul and Morrison Lake area. Gold values of up to 3.42 g/t (0.10 oz/ton) have been reported in this Zone in the Morrison Lake area. This Zone also coincides with a strong apparent resistivity anomaly detected in Biralger's airborne survey. This anomaly has a 4 km (2.5 mi) strike length on the Property and parallels the Cairo-Flavelle zone 500 metres (1640 feet) to the south. This resistivity anomaly extends on the Property for 4.0 kilometres (2.5 miles) from the west end of Morrison Lake to the southwest end of Middleton Lake. The resistivity anomaly extends northeast onto Biralger's newly staked ground to the east in Flavelle Twp. The northeast end of the St. Paul-Middleton Lake D.Z. extends northeastward under the Cobalt Sediments.

The G-L Zone is located near the base line between 8+00W and 12+00W. Several ground VLF-EM conductors were detected in this area. This Zone is classified by Aerodat Limited as a high priority exploration target. Copper mineralization was found in altered syenite porphyry in this area 55 metres (180 feet) north at the baseline at 8+00W.

The Kell's Lake Zone is located on strike with the McChesney showing 0.5 km (2.2 mi) to the northeast. The McChesney Fault can be traced southwest to the Matachewan Consolidated and Young-Davidson Mines. Hole C-91-3 tested the south portion of this deformation zone. The hole should be deepened northward to intersect the conductor and the McChesney Fault Zone under Kell Lake.

The Wiley Lake D.Z. is a newly defined gold bearing structure striking through Wiley Lake and westward onto the central portion of the Cairo Twp. claims. This Zone on the Property hosts gold bearing blue-grey quartz veins striking N60 - 70 E in sheared and silicified syenite porphyry. A narrow vein near post No.1 of claim 1188664 has returned 38 g/t gold (1.1 oz/ton). Two similar

blue-grey parallel quartz veins were found on claim 1168945.

Very minor exploration has been done on this Zone in the past. This area has also been designated as a prime exploration target by Aerodat because of the intersection of a N-S and E-W fault system.

The Galer Lake Deformation Zone has also been designated by Aerodat as another major exploration target. This Zone is strongly defined on the airborne survey as an east northeast trend of magnetic, electromagnetic and VLF-EM anomalies. The anomalies are on strike with several known gold showings in Holmes Twp. where values of up to 38.7 g/t gold (1.13 oz/ton) have been obtained.

RECOMMENDATIONS

The following work is recommended on the Cairo Property located near Matachewan, Ontario.

PHASE I

Phase I consists of line cutting and geophysical surveys over portions of the eastern extension of the Cairo-Flavelle Zone, the St. Paul-Middleton Lake Deformation Zone, west of the G-L Zone, the Kells Zone and the Wiley Lake Zone.

This work will be followed up with further diamond drilling on the Cairo-Flavelle Zone and the St. Paul-Middleton Lake D.Z.

PHASE 1

Line Cutting - 60 km @ \$275.00/km	\$ 16,500.00
Geophysical Surveys	
Magnetometer - 60 km @ \$110.00/km	6,600.00
VLF-EM - 55 km @ \$110.00/km	6,350.00
Diamond Drilling - 2000 feet @ \$18.00/ft.	36,000.00
Assaying and Sampling	6,500.00
Core Logging - 2000 feet @ \$4.00/ft.	8,000.00
Project Supervision & Reports	20,000.00
Transportation & Accomodation & Food	<u>3,000.00</u>
	102,950.00
10% Contingencies	<u>10,295.00</u>
	113,245.00
7% GST	<u>7,927.15</u>
	<u>\$121,172.15</u>

PHASE II

Phase II consists of more line cutting and geophysical surveys over the Galer Lake Zone, and the western extension of the Wiley Lake Zone. Geological mapping will be done over the grid lines cut in Phases I and II. This work will be followed by mechanical stripping, trenching and blasting over specified zones. A major drilling program will continue, to test the Cairo-Flavelle Zone, St. Paul-Middleton Lake Zone, Wiley Lake Zone and the Galer Lake Zone.

PHASE 11

Line Cutting - 60 km @ \$275.00	16,500.00
Geophysical Surveys	
Magnetic - 60 km @ \$110.00/km	6,600.00
VLF-EM - 55 km @ \$110.00/km	6,350.00
Geological Mapping - 120 km @ \$100.00/km	12,000.00
Mechanical Stripping - 200 hours @ \$50.00/hr.	10,000.00
Trenching & Blasting - 2 men 15 days	
- @ \$125.00/day	3,750.00
Airborne Survey over new Flavella Twp Claims	20,000.00
Equipment Rental - 1 plugger 12 days	
- @ \$50.00/day	600.00
Assaying & Sampling - 1 man 10 days	
- @ \$125.00/day	1,250.00
Drilling - 10,000 feet @ \$15.00/ft.	150,000.00
Core Logging - 10,000 feet @ \$4.00/ft.	40,000.00
Core Assaying - 1250 samples @ \$20.00	25,000.00
Project Supervision and Report	<u>40,000.00</u>
	\$330,050.00
10% Contingencies	<u>33,005.00</u>
	\$363,055.00
7% GST	<u>25,413.85</u>
	\$388,468.85
 TOTAL PHASE I and PHASE II	 <u>\$509,641.00</u>

R.A. Bernatchez, P.Eng.  
Consulting Geological Engineer

November 30, 1991

PROPERTY CLAIMS

CLAIM NUMBERS	NO. of CLAIMS ( units )	RECORDING DATE	TOTAL ASSESS.	EXPIRY DATE
859204 - 859209	6	Oct. 25/85	\$26,400.	1995
859240 - 859241	2	Oct. 25/85	\$ 8,800.	1995
982258 - 982261	4	Nov. 26/87	\$ 3,960.	1996
1048585 - 1048594	10	Oct. 17/88	\$22,000.	1993
1102233	1	Dec. 18/89	\$ 3,080.	1996
1106455 - 1106469	15	Feb. 14/90	\$26,400.	1994
1111066 - 1111069	4	Aug. 29/89	\$ 8,800.	1994
1111073	1	Nov. 2/89	\$ 2,200.	1994
1132175 - 1132181	7	May 9/90	\$12,320.	1994
1132182 - 1132185	4	May 9/90	\$ 8,000.	1995
1132187 - 1132189	3	May 9/90		1995
1132225 - 1132228	4	Jan. 7/91		1993
1132234	1	Feb.25/91		1993
1132238	1	Feb.25/91		1993
1137298 - 1137299	2	Feb.14/90		1994
1137311	1	Feb.14/90		1994
1137498 - 1137504	7	Jan.11/90		1993
1137949 - 1137950	2	Feb.27/91		1995
1168663 - 1168664	2	Feb.28/91		1993
1168944 - 1168960	17	Feb.28/91		1993
1168884 - 1168893	15	Feb.28/91		1993
1168998 - 1169002	5	Mar.19/91		1993
1179845 - 1179847	3	Mar.15/91		1993
1180315 - 1180319	5	June28/91		1993

\* new staking in Flavelle Twp.

1180215 - 1180217	10 (3 cl)	Nov.18/91		1993
1180218 - 1180221	26 (4 cl)	Nov.22/91		1993
1185680 - 1185681	20 (2 cl)	Nov.18/91		1993
1185683 - 1185686	16 (4 cl)	Nov.18/91		1993
1185695	8 (1 cl)	Nov.18/91		1993

Total No. of Units (claims)- 202 units (claims)

Total Approximate Acreage - 8080 acres (3264 hectares)

\* Staking under the new Mining Act allows for more than one unit per claim. One unit = One old claim containing 40 acres/claim.

## REFERENCES

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- Johnson, Ian, PhD, P.Eng. June 28, 1991. Aerodat  
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900

Ministry of  
Northern Development  
and Mines

Ministère du  
Développement du Nord  
et des Mines

Geoscience Approvals Section  
933 Ramsey Lake Road  
6th Floor  
Sudbury, Ontario  
P3E 6B5

Telephone: (705) 670-5853  
Fax: (705) 670-5863

Our File: 2.15059  
Transaction #: W9380.00039

January 14, 1994

Mining Recorder  
Ministry of Northern  
Development and Mines  
4 Government Road East  
Kirkland Lake, Ontario  
P2N 1A2

Dear Sir:

**RE: APPROVAL OF ASSESSMENT WORK SUBMITTED FOR GEOLOGY ON MINING CLAIMS  
L1048585 ET AL IN CAIRO, ALMA, HOLMES AND FLAVELLE TOWNSHIPS**

A Notice of Deficiency was not issued on this Report of Work prior to the 90 day deemed approval date and as outlined in subsection 6(5) of the Mining Act Regulations this Report of Work is deemed approved as of MAY 31, 1993.

If you require further information please contact Lucille Jerome at (705) 670-5855.

Yours sincerely

Ron C. Gashinski  
Senior Manager, Mining Lands Section  
Mining and Land Management Branch  
Mines and Minerals Division

LJ/ljs

cc: Resident Geologist  
Kirkland Lake, Ontario

Assessment Files Library  
Toronto, Ontario



Ministère du  
Développement du Nord  
et des Mines  
Ontario

**Rapport sur les travaux exécutés  
après l'enregistrement d'un claim**

Loi sur les mines

N° de transaction

W9380.00039

**2.15059**

Les renseignements personnels contenus dans le présent formulaire sont recueillis en vertu de la Loi sur les mines et servent à la correspondance. Adressez toute question sur la collecte de ces renseignements au chef provincial des territoires miniers, ministère du Développement du Nord et des Mines, 188, rue Cadar, 4<sup>e</sup> étage, Sudbury (Ontario) PSE 6A8; téléphone : (705) 670-7284.

- Directives :
- Dactylographier ou écrire en lettres moulées.
  - Se reporter à la Loi sur les mines et aux règlements pour connaître les directives de dépôt des travaux d'évaluation ou consulter le registraire de claims.
  - Remplir une formule pour chaque groupe de travaux.
  - Joindre à la présente formule deux exemplaires des rapports techniques et des cartes.
  - Joindre à la présente formule une esquisse indiquant les claims ayant fait l'objet des travaux.

Titulaire(s) enregistré(s) <b>Biralger Resources Ltd</b>		N° de client <b>108485</b>
Adresse <b>Box 1326, 126 Willow Rd, Atikokan, Ontario, POT1C0</b>		N° de téléphone <b>807-597-4526</b>
Division des mines <b>Larder Lake</b>	Commissariat <b>Cairo-Alma-Flavelle Holmes</b>	N° de plan M ou G <b>G-9209, m-202 m-220, m-224</b>
Date d'exécution des travaux du: <b>June 10, 1991</b>	au: <b>Dec 1, 1991</b>	

Travaux exécutés (cocher un seul groupe de travaux)

Groupe de travaux	Genre
<input type="checkbox"/> Levé géotechnique	Geological Report and prospectus
<input type="checkbox"/> Travaux physiques, y compris forage	<b>RECEIVED</b>  <b>JUN 15 1993</b>  <b>MINING LANDS BRANCH</b>
<input type="checkbox"/> Réhabilitation	
<input type="checkbox"/> Autres travaux autorisés	
<input type="checkbox"/> Essais	
<input type="checkbox"/> Valeur transférée de la réserve	

Total des travaux d'évaluation réclamés sur le relevé des frais ci-joint **21,681.00** *RAB* *RAB*

Note : Le ministre peut rejeter une partie ou la totalité des travaux d'évaluation présentés pour obtenir des crédits d'évaluation si le titulaire enregistré ne peut vérifier les dépenses réclamées sur le relevé des frais dans les trente jours suivant une demande de vérification.

Les personnes et la compagnie d'arpentage qui ont exécuté les travaux (donner le nom et l'adresse de l'auteur du rapport)

Nom	Adresse
<b>R.A. Bernatchez P.Eng Consulting Geologist</b>	<b>126 Willow Rd Atikokan Ontario POT1C0</b>

(Joindre une annexe au besoin)

Certification d'intérêt bénéficiaire - Voir la note n° 1 au verso

Je certifie qu'au moment où les travaux ont été exécutés, les claims dont il est question dans le présent rapport étaient enregistrés au nom de leur titulaire actuel ou détenus à titre bénéficiaire par l'actuel titulaire enregistré.	Date <b>Feb 25 1993</b>	Titulaire enregistré ou représentant (Signature) <b>R.A. Bernatchez, P.Eng.</b>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------	------------------------------------------------------------------------------------

Certification du rapport sur les travaux exécutés

Je certifie que j'ai une connaissance directe des faits exposés dans le présent rapport, pour avoir exécuté les travaux ou en avoir constaté l'exécution avant ou après leur achèvement. Je certifie aussi que le rapport ci-joint est exact.

Nom et adresse du certifieur <b>Raymond A. Bernatchez P.Eng.</b>		
N° de téléphone <b>807-597-4526</b>	Date <b>Feb 25, 1993</b>	Certifié par (signature) <b>R.A. Bernatchez, P.Eng.</b>

Résumé au ministère

Valeur totale des crédits enregistrés <b>Applied \$15344.00</b>	Date d'enregistrement <b>March 10 1993</b>	Registraire de claims <b>[Signature]</b>	Cocheur reçu <b>FIRST LARDER LAKE MINING DIVISION MAR 1 1993</b>
Date de l'approbation <b>May 27 1993</b>	Date d'approbation <b>[Signature]</b>		
Date d'envoi de l'avis de modification <b>[Signature]</b>			

MAR 25 '93 16:20

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**JUN 10 1993**  
MINING LANDS BRANCH

TIME **2:40 PM**  
8875975871 PAGE 003



Work Report Number for Applying Reserve	Claim Number (see Note 2)	Number of Claim Units
-	1168887	+
	1168888	1
	1168889	1
	1168890	1
	1168897	1
	1168898	1
	1048585	1
	1048586	1
	1132175	1
	1132176	1
	1132177	1
	1132183	1
	1132184	1
	1132185	1
	1132188	1
	1132234	1
	1132288	1
	17	

Total Number of Claims

Value of Assessment Work Done on this Claim	Value Applied to this Claim
-	272
	272
	272
	272
	272
	272
	272
657	
657	
657	
657	
657	
1971	
1971	
1314	
1314	
657	400
657	400

Total Value Work Done

Total Value Work Applied

11169

2432  
1632 assigned

Value Assigned from this Claim	Reserve Work to be Claimed at a Future Date
-	-
228	429
235	422
235	422
235	422
235	422
235	422
705	1266
705	1266
470	844
470	844
257	
257	

Total Assigned From

Total Reserve

3518

6337

Credits you are claiming in this report may be cut back. In order to minimize the adverse effects of such deletions, please indicate from which claims you wish to prioritize the deletion of credits. Please mark (-) one of the following:

1.  Credits are to be cut back starting with the claim listed last, working backwards.
2.  Credits are to be cut back equally over all claims contained in this report of work.
3.  Credits are to be cut back as prioritized on the attached appendix.

In the event that you have not specified your choice of priority, option one will be implemented.

Note 1: Examples of beneficial interest are unrecorded transfers, option agreements, memorandum of agreements, etc., with respect to the mining claims.

Note 2: If work has been performed on patented or leased land, please complete the following:

I certify that the recorded holder had a beneficial interest in the patented or leased land at the time the work was performed.

Signature

*Raymond Bussatlas*

Date

Feb. 25, 1993

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PAGE .004

(2)

Work Report Number for Applying Reserve	Claim Number (see Note 2)	Number of Units
-	1137498	+
	1137499	1
	1137500	1
	1137501	1
	1137502	1
	1137503	1
	1137504	1
	1137298	1
	1168663	1
	1168664	1
	1168885	1
	1168944	1
	1168945	1
	1168946	1
	1168947	1
	1168948	1
	1168949	1
	17	

Total Number of Claims

FORM 9001

Value of Assignment or Pledge on the Claim	Value Applied to the Claim
-	400
	400
657	400
	400
	400
	400
	400
657	
657	400
657	400
657	400
	400
657	400
	400
	400
	400
	400
	400
	400
	400
	400
	400
	400
	400
	400
	400
	400

Total Value Work Done

15111

Total Value Work Applied

8832

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MINING LANDS BRANCH  
JUN 15 1993

1169                      2432

Value Assigned from this Claim	Reserve Work to be Claimed at a Future Date
-	-
257	
657	
257	
257	
257	
257	

Total Assigned From

5460

Total Reserve

2. 15059

3518

Credits you are claiming in this report may be cut back in order to minimize the adverse effects of such deletions, please indicate from which claims you wish to prioritize the deletion of credits. Please mark (✓) one of the following:

- 1.  Credits are to be cut back starting with the claim listed last, working backwards.
- 2.  Credits are to be cut back equally over all claims contained in this report of work.
- 3.  Credits are to be cut back as prioritized on the attached appendix.

In the event that you have not specified your choice of priority, option one will be implemented.

Note 1: Examples of beneficial interest are unrecorded transfers, option agreements, memorandums of agreements, etc., with respect to the mining claims.

Note 2: If work has been performed on patented or leased land, please complete the following:

I certify that the recorded holder had a beneficial interest in the patented or leased land at the time the work was performed.

Signature  
*Raymond Sweeney*

Date  
Feb 25 1993

(3)

15111

8832

5460

Work Report Number for Applying Reserve	Claim Number (see Note 2)	Number of Claim Units
-	1168950	+
	1168951	1
	1168952	1
	1168953	1
	1168954	1
	1168955	1
	1168956	1
	1168957	1
	1168958	1
	1168959	1
	1168960	1
	1179845	1
	1179846	1
	1179847	1
	1168893	1
	1168894	1
	1168895	1
	1168896	1
	18	

Total Number of Claims

MINING LANDS-BENAVEN  
JUN 15 1993

Value of Assessment Work Done on this Claim	Value Applied to this Claim
657	400
657	400
	400
	400
	400
	400
657	400
657	400
	400
	400
	400
1314	400
1314	400
1314	400
	96
	272
	272
	272
	272
21681	15344

Total Value Work Done

21681 ✓

Total Value Work Applied

15344 ✓

3712 assigned — 29744

Value Assigned from this Claim	Reserve Work to be Released at a Future Date
257	
257	
257	
257	
914	
914	
914	
29744	
49745	
	6337

Total Assigned From

49745

Total Reserve

6337

2.15059

Credits you are claiming in this report may be cut back in order to minimize the adverse effects of such deletions. Please indicate from which claims you wish to prioritize the deletion of credits. Please mark (-) one of the following:

- Credits are to be cut back starting with the claim listed last, working backwards.
- Credits are to be cut back equally over all claims contained in this report of work.
- Credits are to be cut back as prioritized on the attached appendix.

In the event that you have not specified your choice of priority, option one will be implemented.

Note 1: Examples of beneficial interest are unrecorded transfers, option agreements, memorandum of agreements, etc., with respect to the mining claims.

Note 2: If work has been performed on patented or leased land, please complete the following:

I certify that the recorded holder had a beneficial interest in the patented or leased land at the time the work was performed.

Signature

Raymond Benavente

Date

Feb 25 1993

MAR 25 '93 16:22

8075975871 PAGE 006

**Ministry of**  
**Business Development**  
**of Malaysia**  
Minister of  
Business Development  
of the nation

**Ministry of**  
**Business Development**  
**of Malaysia**  
Minister of  
Business Development  
of the nation

UJ350.00039  
AMENDED COPY  
2.15039

**Financial Information required by the laws to establish under the jurisdiction of the Mining Act, 1960.**  
This information is provided for the use of the Mining Recorder in connection with the processing of applications for mining rights. It is not to be used for any other purpose without the written consent of the Mining Recorder.

**1. Direct Costs/Other Credits**

Type	Description	Amount (RM)	Total (RM)
Capital Expenditure	Cost of Exploration Expenses up to length		
Operational and Administrative Expenses	Reports Prospectors	18000-18750	RMB
Operating Expenses			

Total Direct Costs  
Total cost credit amount

**2. Indirect Costs/Other Credits**

Type	Description	Amount (RM)	Total (RM)
Operational Expenses	Address	2644	RMB

RECEIVED  
JUN 15 1993 2644 RMB  
ISLANDS BRANCH 2644 RMB

Note: The recorded holder will be required to verify expenditures claimed in this statement of costs within 90 days of a request for verification. If verification is not made, the holder may request for amended work all or part of the assessment work submitted.

Note: To make a successful appeal for the assessment payable due to protest that the holder does not agree with the assessment payable, an appeal must be made to the Director General of Lands and Mines within 90 days of the date of the assessment payable.

**Filing Discounts**

1. Work filed within two years of completion is claimed at 100% of the above Total Value of Assessment Credit.

2. Work filed thereafter or two years after completion is claimed at 50% of the above Total Value of Assessment Credit. See calculation below:

Total Value of Assessment Credit: = 0.50 =

**Payment per dip**

1. Low income deposits with low dip are subject to adjustment and normally 1.50% of the value of the deposit.

2. Low income deposits with higher dip are subject to adjustment and normally 2.50% of the value of the deposit.

Total Value of Dip Payment: = 0.50 =

**Confirmation Verifying Statement of Costs**

I hereby certify that the amounts shown are as accurate as possible and these costs were incurred while conducting assessment work on the lands shown on the accompanying Report of Work done.

Signature: President of Bivalve Resources Ltd

**Attention de l'Etat des coûts**

J'atteste par la présente que les montants indiqués sont le plus précis possible et que les dépenses ont été engagées pour effectuer les travaux d'évaluation sur les terres indiquées dans le formulaire mentionné au-dessus de la date.

Signature: R.A. Bernatchez Feb 25/193

Amended.  
8875975871 PAGE.002  
Feb 25/193  
8875975871 PAGE.002

**NOTES**

400' surface rights reservation along the shores of all lakes and rivers.

The subdivision of this Township into lots and concessions is partially annulled, December 3rd 1963.

M.T.C. Gavel Pit 203

M.T.C. Pit 1394

Surface and Mining Rights Withdrawn From Staking, Section 36/80 Order No. W93/80, B/6/1980

Surface and Mining Rights Withdrawn From Staking, Section 31(B), Feb. 11, 1986 3:07 PM

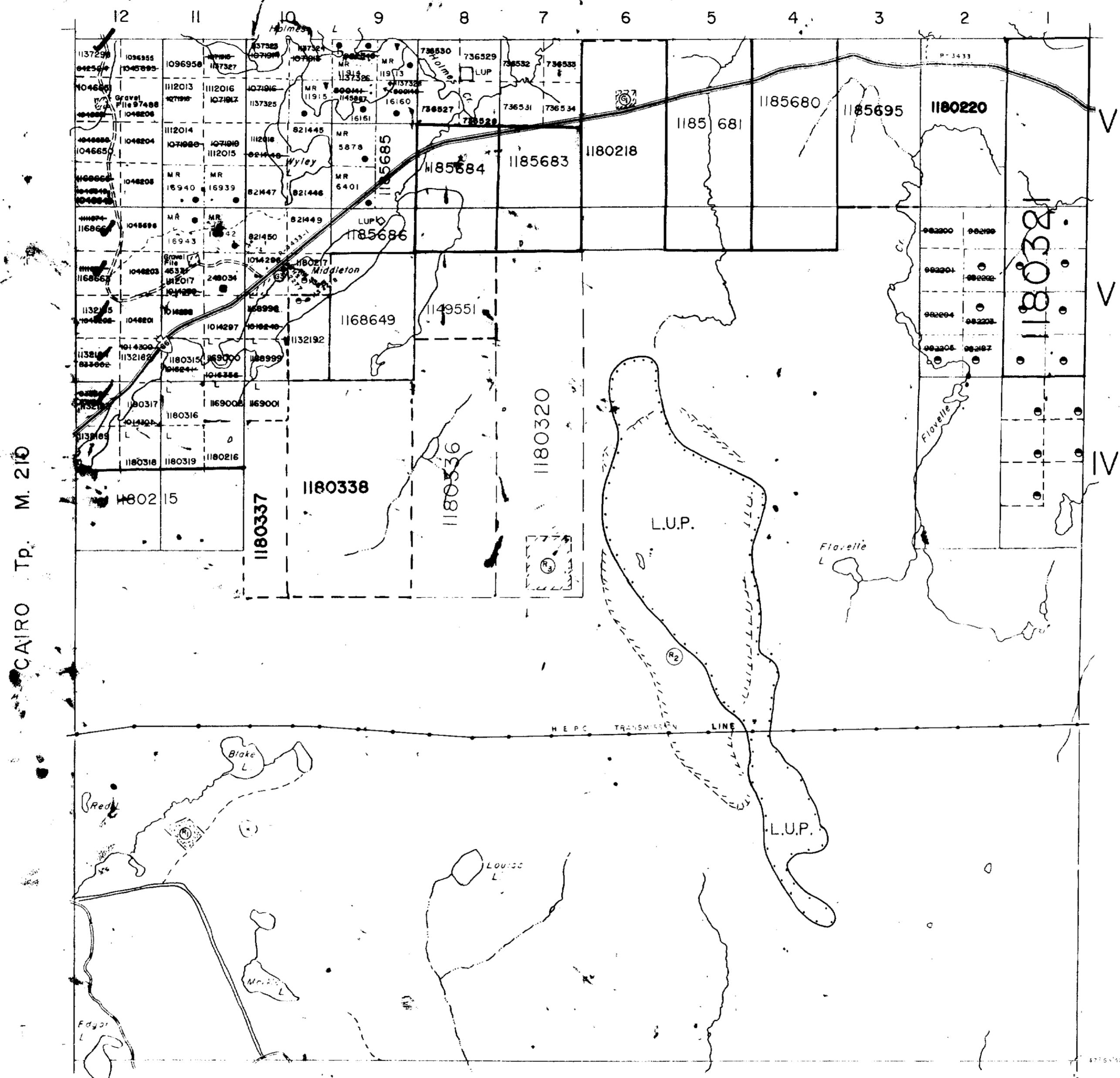
Surface Rights Withdrawn From Staking, Section 31(B), Aug. 13, 1987

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

**NOTICE OF FORESTRY ACTIVITY**

THIS TOWNSHIP/AREA FALLS WITHIN THE PLONSKI FOREST MANAGEMENT UNIT AND MAY BE SUBJECT TO FORESTRY OPERATIONS. THE MNR UNIT FORESTER FOR THIS AREA CAN BE CONTACTED AT: P.O. BOX 129, SWASTIKA, ONT. POK 1T6, 705-642-3222

**HOLMES Tp. M. 224**



CAIRO Tp. M. 210

GROSS Tp. M. 487

**WILLISON Tp. M. 259**

ARCHIVED NOV. 18/91

Received Jan 27/89

**LEGEND**

- HIGHWAY AND ROUTE NO.
- OTHER ROADS
- TRAILS
- SURVEYED LINES: TOWNSHIPS, BASE LINES, ETC.
- LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES: LOT LINES
- PARCEL BOUNDARY
- MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES

**DISPOSITION OF CROWN LANDS**

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LEASE, SURFACE & MINING RIGHTS	
" SURFACE RIGHTS ONLY	
" MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
CROWN LAND SALE	CS
ORDER-IN-COUNCIL	OC
RESERVATION	
CANCELLED	
SAND & GRAVEL	

SCALE: 1 INCH = 40 CHAINS



ACRES      HECTARES

40      16

TOWNSHIP **2-15059**

**FLAVELLE**

DISTRICT  
TIMISKAMING

MINING DIVISION  
LARDER LAKE

MINISTRY OF NORTHERN DEVELOPMENT AND MINES

Ontario

Date: 26/06/88

Plan No.

**M. 220**

DATE OF ISSUE

JUN 3 1988

LARDER LAKE COPY OF THIS MYLAR ARCHIVED  
MINING RECORDER'S OFFICE ON JUNE 4/92



42A02SE8501 2-15059 CAIRO

**AREAS WITHDRAWN FROM DISPOSITION**

- M.R.O. - MINING RIGHTS ONLY
- S.R.O. - SURFACE RIGHTS ONLY
- M.+S. - MINING AND SURFACE RIGHTS

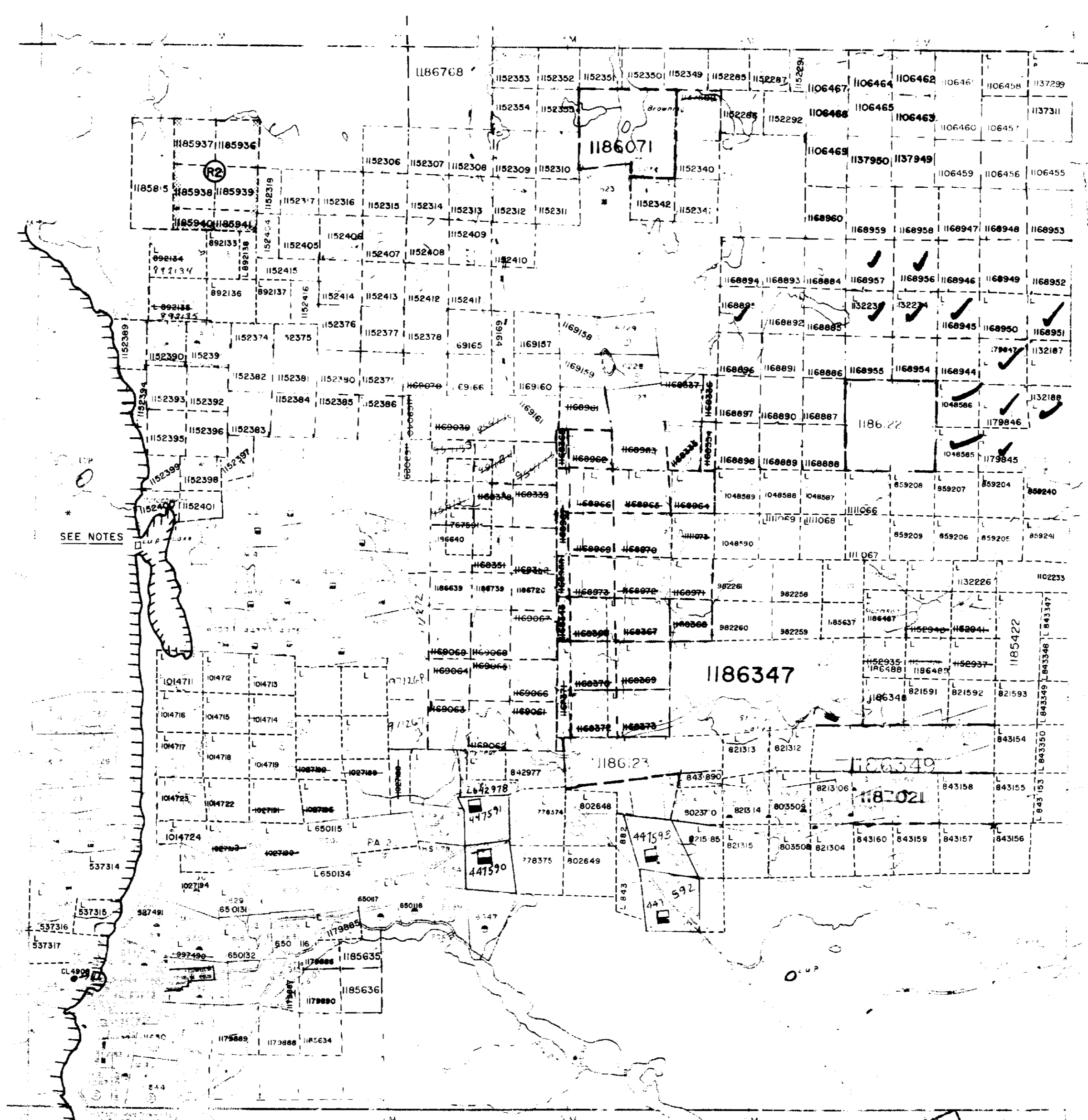
Description Order No. Date Disposition File

(R1) MINING AND SURFACE RIGHTS NOT OPEN TO STAKING, APPLICATION UNDER SECTION 31(6) JUNE 12/1987.

(R2) W-42193 WITHDRAWS MINING AND SURFACE RIGHTS ON MAY 28/1993.

CL 4808 - PENDING APPLICATION UNDER PUBLIC LANDS ACT

UP - LAND USE PERMIT



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**NOTES**

AREA WEST OF WEST MONTREAL RIVER CLOSED TO STAKING SUBJECT TO SEC. 38(1) OF THE MINING ACT, 20 SEPT. 1978. W 65/83

"THIS MAP SHOWS THE APPROXIMATE LOCATION OF THE BOUNDARIES OF THE AREA WHICH IS THE SUBJECT OF CURRENT LITIGATION. THE EXACT LOCATION WILL BE SHOWN FOLLOWING CONFIRMATION BY THE PARTIES TO THE ACTION."

**NOTICE OF FORESTRY ACTIVITY**

THIS TOWNSHIP / AREA FALLS WITHIN THE PLONSKI FOREST MANAGEMENT UNIT AND MAY BE SUBJECT TO FORESTRY OPERATIONS. THE MNR UNIT FORESTER FOR THIS AREA CAN BE CONTACTED AT: P.O. BOX 129 SWASTIKA, ONT. POK 1T0 705-642-3222

Kimberley Twp.

DATE OF ISSUE  
JUN 9 1993  
LAPDER LAKE  
MINING RECORDER'S OFFICE

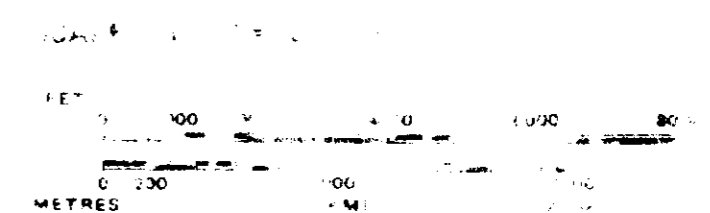
COPY OF THIS MYLAR ARCHIVED SEPT 6 1991

- HIGHWAY ROUTE NO.
- TOWN ROADS
- RAILS
- IRREVOKED LINES
- TOWNSHIPS, BASE LINES, ETC.
- LOTS, MINING CLAIMS, PARCELS, ETC.
- SURVEYED LINES
- LOT LINES
- PARCEL BOUNDARY
- MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERMANENT STREAM
- LOADING FLOODING RIGHTS
- ADJUNCTION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHIP LINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE DOCUMENT

**DISPOSITION OF CROWN LANDS**

TYPE OF DOCUMENT	SYMBOL
PATENT, LEASE, MINING RIGHTS	(Symbol)
LEASE	(Symbol)
EASE, SURFACE RIGHTS	(Symbol)
SURFACE RIGHTS	(Symbol)
MINING RIGHTS ONLY	(Symbol)
LEASE OF OCCUPATION	(Symbol)
ORDER IN COUNCIL	(Symbol)
RESERVATION	(Symbol)
CANCELLED	(Symbol)
LAND CORREL.	(Symbol)

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 12/13 VESTED IN ORIGINAL PATENTEES UNDER THE PUBLIC LANDS ACT OF 1917 (CHAP. 38, SESS. 63, S. 8).



**2-15059**

TOWNSHIP  
**CAIRO**  
M.N.R. ADMINISTRATIVE DISTRICT  
**KIRKLAND LAKE**  
MINING DIVISION  
**LAPDER LAKE**  
AND TITLES / REGISTRY DIVISION  
**TIMISKAMING**

Ministry of Natural Resources Ontario  
Ministry of Northern Development and Mines

JULY 1978

**G-3209**



42A025E8981 2-15059 CAIRO



Sheba Twp.

Baden Twp.

Holmes Twp.

Cairo Twp.

THE TOWNSHIP OF ALMA

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

- PATENTED LAND
- CROWN LAND SALE
- LEASES
- LOCATED LAND
- LICENSE OF OCCUPATION
- MINING RIGHTS ONLY
- SURFACE RIGHTS ONLY
- ROADS
- IMPROVED ROADS
- KING'S HIGHWAYS
- RAILWAYS
- POWER LINES
- MARSH OR MUSKES
- MINES
- CANCELLED

NOTES

Matachewan Indian Reserve shown thus: [Symbol]

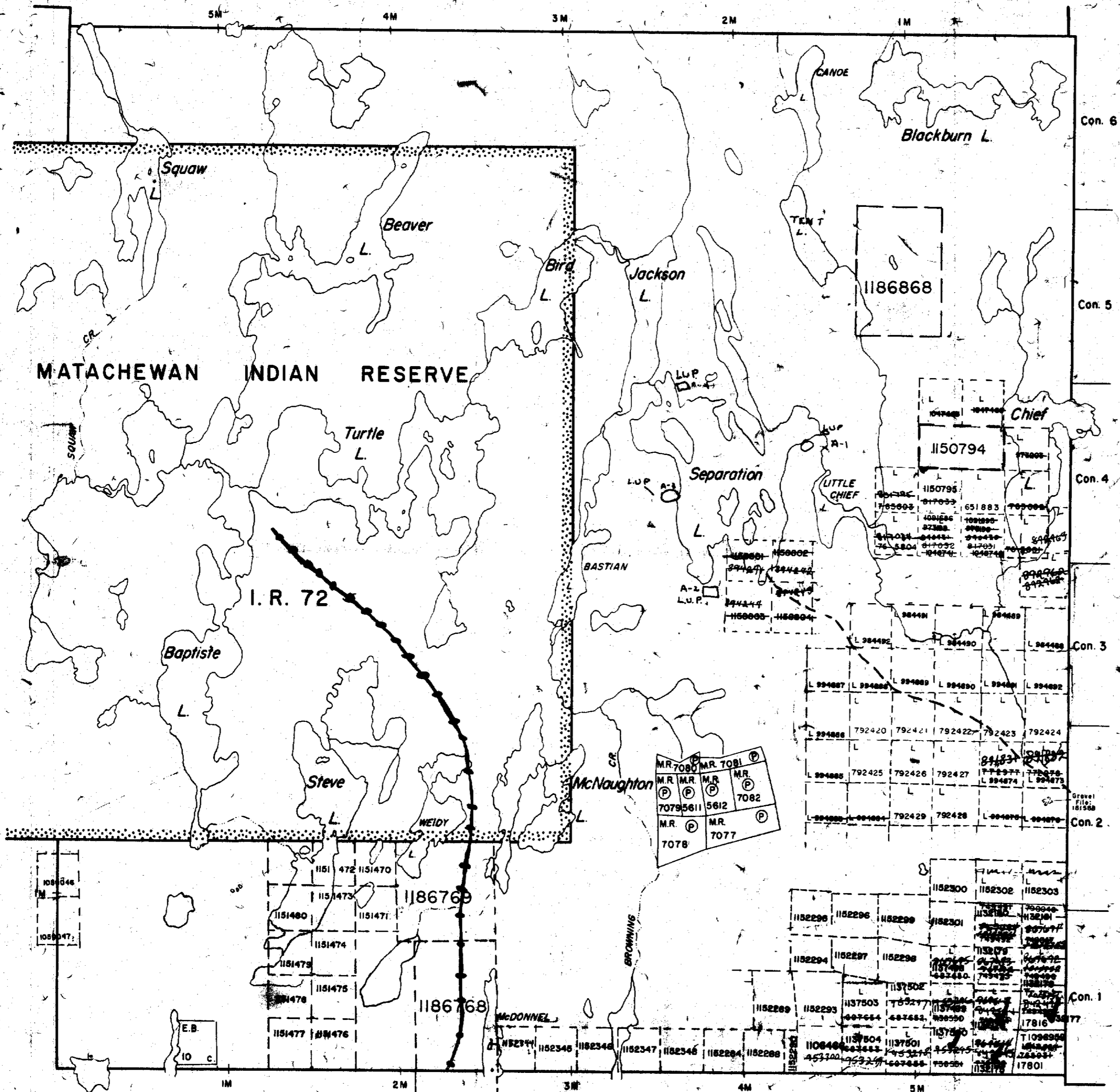
400' Surface rights reservation around all lakes and rivers.

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DATE OF ISSUE  
JUN 9 1983  
LARDER LAKE  
MINING RECORDERS OFFICE

PLAN NO. - M-202

ONTARIO #3  
MINISTRY OF NATURAL RESOURCES  
SURVEYS AND MAPPING BRANCH



COPY OF THIS MYLAR ARCHIVED JUNE 25/92

