

63.4511



52N08NW0041 63.4511 CASUMMIT LAKE

010

REPORT ON
McINTYRE BIRCH LAKE PROPERTY
RED LAKE MINING DIVISION, ONTARIO
(NTS 52-N-8)

for

CARMAC RESOURCES LIMITED

OM 83-1-C-386

by

A.W. Dean, P.Eng.

April 30, 1984



52N08NW0041 63.4511 CASUMMIT LAKE

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TABLE OF CONTENTS

	<u>Page</u>
SUMMARY	1
INTRODUCTION	2
PROPERTY	2
LOCATION AND ACCESS	4
TOPOGRAPHY AND TIMBER	4
HISTORY	7
GENERAL GEOLOGY	8
PROPERTY GEOLOGY	9
MINERALIZATION	9
Upper Section	13
Lower Section	13
RESERVE TARGET POTENTIAL	13
CONCLUSIONS AND RECOMMENDATIONS	14
ESTIMATED PROGRAM COSTS	17
Stage I	17
Stage II	17
CERTIFICATE	18
ILLUSTRATIONS	
Figure 1 Plan Map of Claims	3
Figure 2 Location Map	5
Figure 3 Topography Map	6
Figure 4 Property Geology	10
Figure 5 Section 16 + 20 W	12
Figure 6 Proposed Grid Drilling	15
APPENDICES	
APPENDIX I Reference List	19

McINTYRE BIRCH LAKE PROPERTY

SUMMARY

The McIntyre Birch Lake property, consisting of eight patented mining claims, is located 70 air miles northeast of Red Lake, Ontario.

The property lies within part of the Birch-Uchi Lakes belt containing metavolcanic-metasedimentary rocks which are Early Precambrian in age. Several gold occurrences have been reported within the belt. The Argosy mine, located three miles northwest of the property, operated intermittently from 1934 to 1952 milling 250,903 tons with an average recovery grade of 0.334 oz Au per ton.

Rock types on the property generally strike east-west to north 55° west and consist mainly of mafic to intermediate metavolcanics with iron formation in places.

Following the discovery of gold on the property in 1928 several exploration programs were undertaken on the property without success. Gold occurs within a main shear zone some 300 feet wide associated with sections containing narrow quartz stringers and arsenopyrite mineralization.

In early April, 1984 drill holes 84-5 and 84-6 outlined a mineralized section with appreciable gold values over mineable widths. (Hole 84-5 intersected the section over an estimated true width of 11.8 feet assaying cut to 1 oz, 0.506 oz Au per ton.) These holes are located within the main shear zone in an overburden covered area that remains untested over a strike length of 1,000 feet.

It is recommended that a detailed geophysical survey and soil sampling program be undertaken on the property and a grid diamond drill program be undertaken in the new discovery area. Estimated program costs for a Stage I and Stage II program are \$255,000.00 and \$360,000.00, respectively.

A. W. Smith
4/21/84

INTRODUCTION

The following report on the McIntyre Birch Lake property has been prepared for Carmac Resources Limited, 1450 - 625 Howe Street, Vancouver, B.C., at the request of Mr. J. E. Millette, President.

The report is based on a review of reports and data available covering exploratory work undertaken on the property intermittently from 1929 to April 1984 by McIntyre Mines Limited and Carmac Resources Limited. Also reviewed were reports and maps available from government sources pertaining to the Birch Lake area.

The author was on the property as a geological consultant, supervising a drill program recently undertaken during the period March 26 to April 9, 1984.

References to reports and records used by the author have been referenced by code numbers in parenthesis. The list of references with corresponding code numbers are contained in Appendix I.

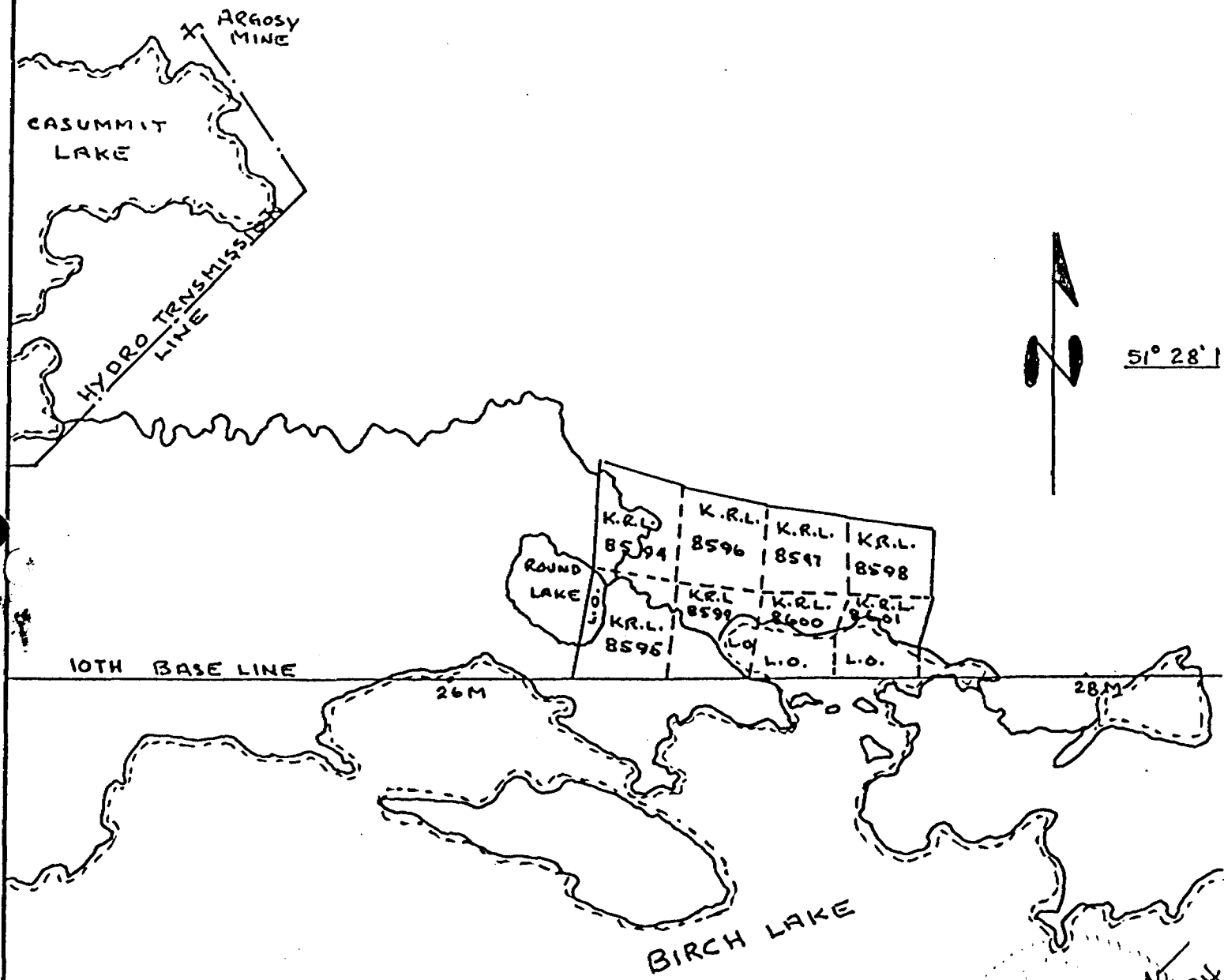
PROPERTY (Figure 1)

The property consists of eight patented mining claims covering 398.92 acres and four licenses of occupation over water covering 69.26 acres as follows:

<u>Parcel No.</u>	<u>Patent No.</u>	<u>Claim No.</u>	<u>Acreage</u>
421	8332	KRL 8594	56.83
422	8333	KRL 8595	60.68
423	8334	KRL 8596	51.40
424	8336	KRL 8597	45.58
425	8337	KRL 8598	40.50
426	8338	KRL 8599	50.40
427	8339	KRL 8600	47.95
428	8340	KRL 8601	<u>45.57</u>
		TOTAL	<u>398.91</u>

92° 17'

51° 28'



Handwritten signature: A.W. D. [Signature]
Handwritten date: MAR 30 / 84

REF: CLAIM MAP NO G-1751
 M. of Nat. Resources,
 ONTARIO

CARMAC RESOURCES LIMITED	
MCINTYRE BIRCH LAKE PROPERTY	
PLAN MAP OF CLAIMS	
FIG. 1	
DRAWN BY: A.W.D.	SCALE: 1" = 1/2 MI.

Over lake waters the following Licences of Occupation are held:

<u>Claim No.</u>	<u>L.O. No.</u>	<u>Water Acreage</u>
KRL 8595	3213	8.96
KRL 8599	3214	7.50
KRL 8600	3215	27.39
KRL 8601	3216	<u>25.41</u>
	TOTAL	<u>69.26</u>

The property is currently held by Carmac Resources Limited under an option agreement with the owners, McIntyre Mines Limited.

LOCATION AND ACCESS (Figure 2)

The property is located on the north end of Birch Lake, 70 air miles northeast of Red Lake, Ontario and 35 air miles north of South Bay, Ontario.

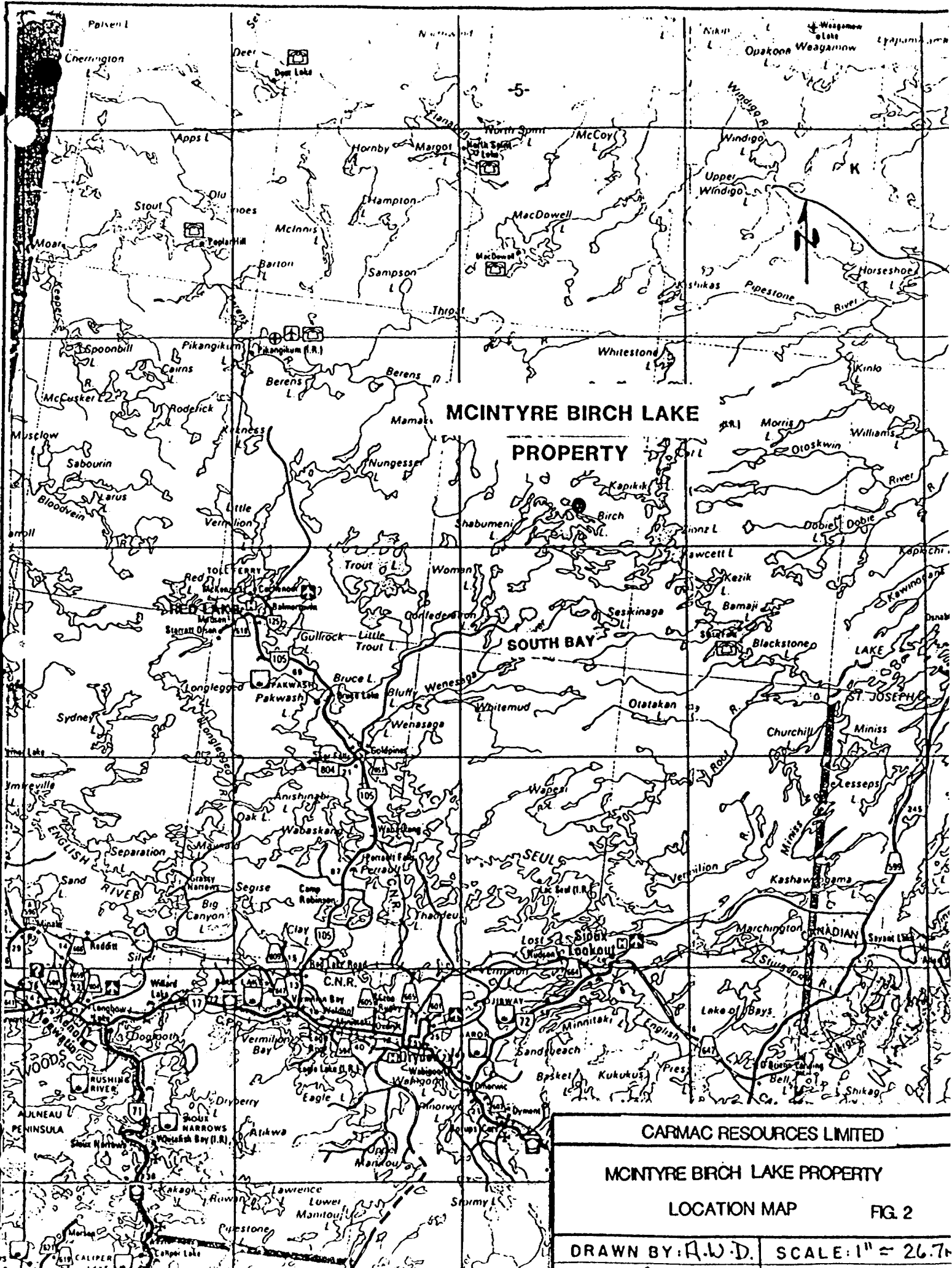
Access is by bush plane from Red Lake and feasible in winter by tractor from South Bay.

A hydro transmission line, in use at the Argosy mine until 1952, is located 2 miles northwest of the property.

TOPOGRAPHY AND TIMBER (Figure 3)

The relief within the area is generally low with drainage sluggish and muskeg common. Some rock cliffs some 25 feet high exist however the terrain is generally flat to undulating where bedrock occurs near surface. Maximum relief above lake water level is some 60 feet.

The property is covered for the most part by conifers with a few scattered poplar and birch trees.



**MCINTYRE BIRCH LAKE
PROPERTY**

SOUTH BAY

CARMAC RESOURCES LIMITED

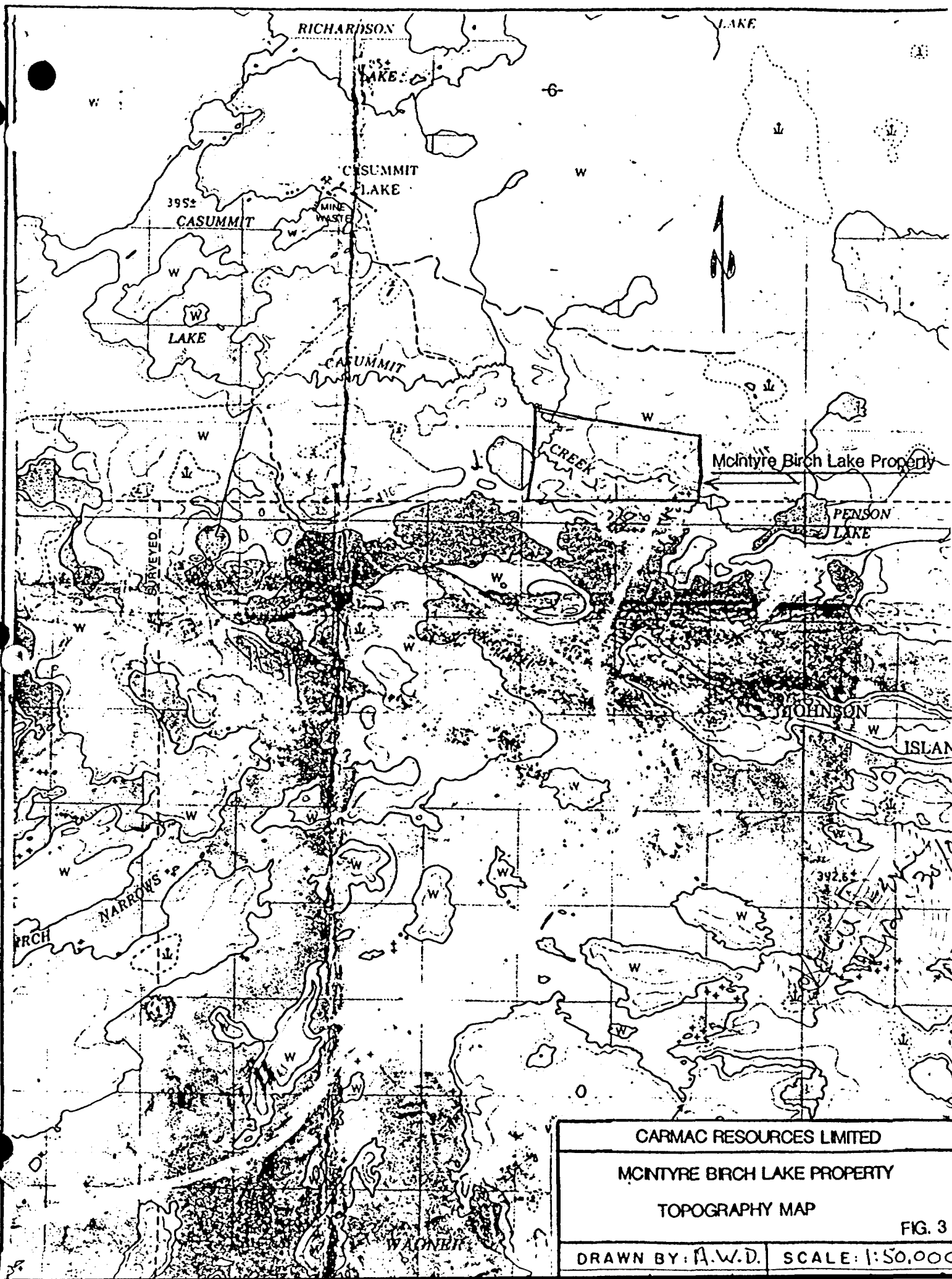
MCINTYRE BIRCH LAKE PROPERTY

LOCATION MAP

FIG. 2

DRAWN BY: A.W.D.

SCALE: 1" = 26.7k



CARMAC RESOURCES LIMITED

MCINTYRE BIRCH LAKE PROPERTY

TOPOGRAPHY MAP

FIG. 3

DRAWN BY: A.W.D.

SCALE: 1:50,000

Forest growth is generally poor as it is limited by swampy ground and shallow overburden covering bedrock. Usually conifer stump diameters are in the 6 to 8 inch range with the largest some 35 feet high.

HISTORY

Following the discovery of gold on the property in 1928, several exploration programs were undertaken on the property. The following is a historical summary for the most after Thorpe.⁽¹⁾

- 1928 Discovery of gold-bearing quartz vein by Jack Miller, a McIntyre prospector. A boundary survey was completed in September and the claims brought to patent.
- 1929 Extensive prospecting and trenching by McIntyre personnel led to the discovery of other veins along the general strike.
- 1931 Five diamond drill holes at 300 foot spacing were put down northwest of line 20 west totalling 1,954 feet. One ore intersection, 0.38 ounces of gold over 13 feet, in hole No. 31-4, was obtained.
- 1934 Property leased to Cooper and Barry. A 60 foot vertical shaft was sunk and a 20 ton mill erected which produced at least 200 ounces of gold. Tailings suggest 1,200 tons were processed. A drift was driven approximately 50 feet below surface from the shaft area on line 20 west for a horizontal distance of 155 feet, only part of which was ore grade. Evidently most of the mill feed came from surface trenches.
- 1935 Approximately 2000 feet of diamond drilling was carried out by Cooper along the main shear zone strike. The results must have been discouraging as the property was returned to McIntyre afterwards.

- 1940 McIntyre put down 7 holes totalling 3,185 feet along the main shear zone strike between lines 27 west and 33 west to test the previously known veins for continuity. Occasional erratic values were intersected but these could not be correlated from hole to hole.
- 1975 A McIntyre field crew carried out a program of soil sampling, geophysical surveying, blasting, rock sampling and geological mapping. An H.E.M. survey indicated some conductivity in bands of iron formation. Several quartz-diorite intrusives were located by prospecting. These had not been recorded previously.
- 1983 Two holes 83-1 and 83-2 collared at line 16+20W totalling 1,504 feet were drilled north of the shaft shear zone area. A five foot section in hole 83-1 between 408 and 413 feet assayed 0.288 oz Au per ton.
- 1984 Six holes totalling 2,380 feet were drilled in early April prior to break up. Holes 84-5 and 84-6 intersected encouraging gold values.

GENERAL GEOLOGY

Bedrock in the area is Early Precambrian in age and is part of the Birch-Uchi Lakes metavolcanic-metasedimentary belt within the Uchi Subprovince.⁽²⁾ The rock units within the vicinity of the property consist mainly of mafic and intermediate metavolcanics and magnetite rich iron formation extending easterly from Mink Lake to the north end of Birch Lake. Overlying these units to the north are clastic metasediments. Based on limited outcrop exposures and airborne magnetic data,⁽³⁾ a quartz-porphyry intrusive, some four miles long by one mile wide, is inferred to occur immediately west of the west boundary of the property.

Within the belt gold occurrences have been reported over a strike length of at least five miles from east to west. The Argosy mine, located three miles northwest of the McIntyre property, operated intermittently from 1934 to 1952. The mine produced 83,827 troy ounces of gold and 1,471 troy ounces of silver from 250,903 tons milled.⁽²⁾

The average recovery grade over the period was 0.334 troy ounce gold and 0.006 troy ounce silver per ton. Ore was mined underground from several north trending quartz veins that extended to depths of 900 feet.

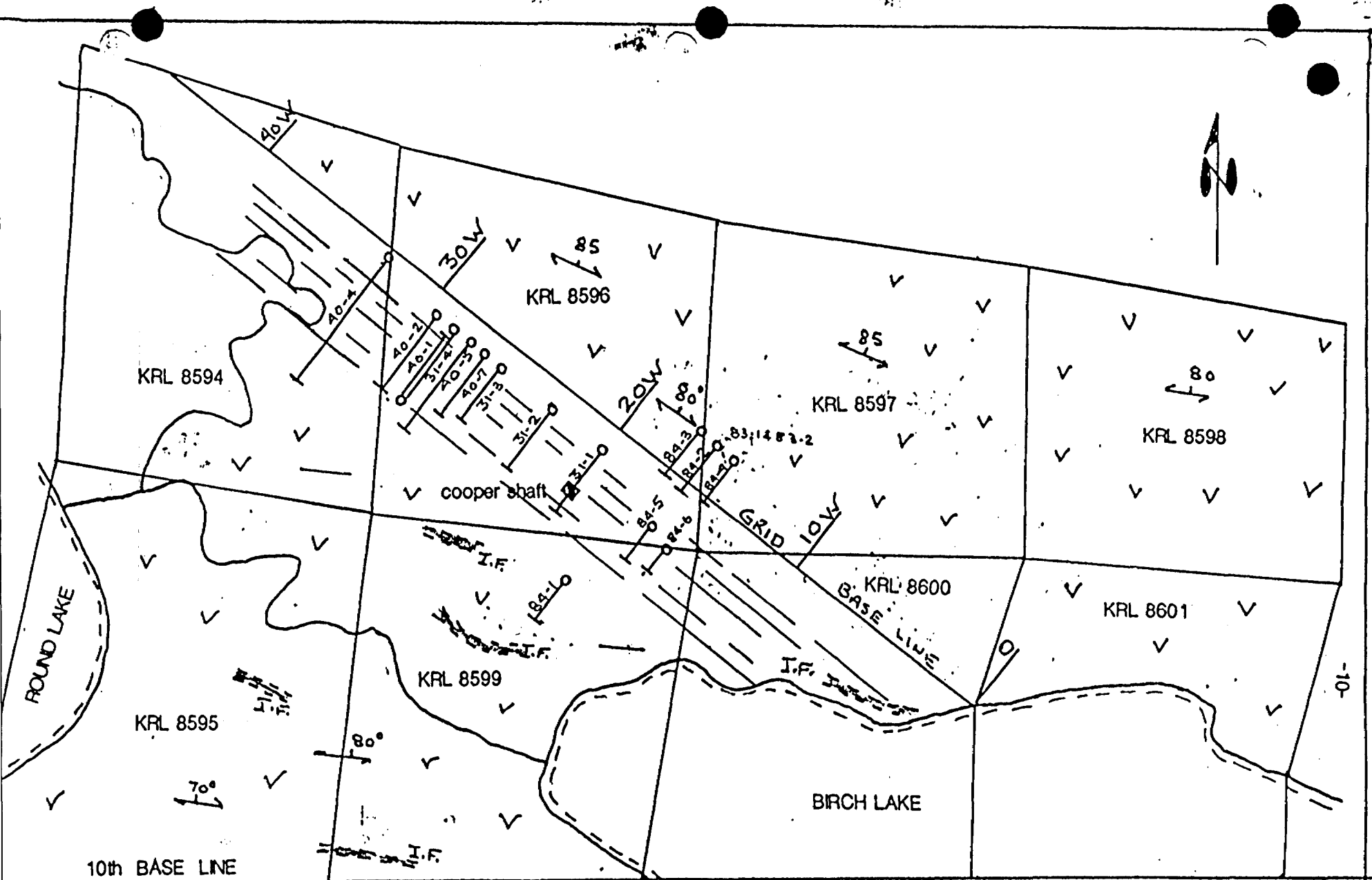
PROPERTY GEOLOGY (Figure 4)

Rock types on the property consist mainly of mafic to intermediate metavolcanics generally striking east-west to north 55° west and dipping steeply 80° northeast. The metavolcanics commonly occur as chloritic schists. Trenching and diamond drilling has outlined weak to moderate shearing in a zone some 600 to 700 feet wide traversing the property apparently conformable to flow contacts. Within this zone is a main shear zone some 300 feet wide in which the Cooper shaft is located.

Banded iron formation has been mapped in several outcrops and has been outlined in diamond drill holes. The iron formation occurs as alternating thin bands of magnetite, sugary quartz and chlorite. The formation is generally narrow however attains a thickness of ten feet or more in places. The iron formation units for the most part appear to conform to the enclosing volcanics. Ground magnetic survey data⁽¹⁾ indicates the iron formation trending east-west converges and changes strike to north 55° west with the main shear zone around line 15 west.

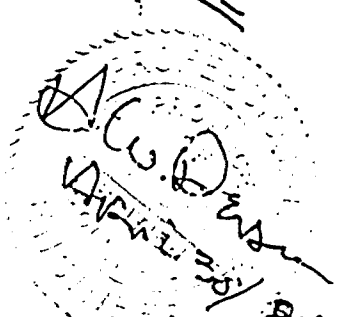
MINERALIZATION

The main shear zone, some 300 feet wide, was explored prior to 1984 by trenching and angle hole diamond drilling for 1,400 feet on strike northwest of the Cooper shaft on line 20 west.⁽⁴⁾ Several narrow quartz veins were encountered with a few individual sections mineralized with arsenopyrite, pyrite and occasionally visible gold. The mineralized sections are usually parallel to the local schistosity, are erratic and discontinuous. The better significant interceptions are reported to assay as follows:



LEGEND

- Metavolcanics - Mafic & Intermediate
- Iron Formation
- Main Shear Zone
- Diamond Drill Hole



CARMAC RESOURCES LIMITED

MCINTYRE BIRCH LAKE PROPERTY

PLAN MAP PROPERTY GEOLOGY FIG. 4

DRAWN BY: A.W.D. | SCALE: 1" = 600'

DATE: April 30/84 | N.T.S. 152-N-8

<u>Hole No.</u>	<u>Sample Width (feet)</u>	<u>Gold oz per ton</u>
31-4	13.2	0.38
40-1	0.7	0.23
	1.0	0.83
40-4	1.0	0.93
40-5	2.7	0.20

In early April 1984, diamond drill holes 84-5 and 84-6 were drilled at -50° to test the projected main shear zone 350 feet southeast of the Cooper shaft (Figure 5). This is an overburden covered area that had not been drilled previously. Drill hole 84-5 intersected two sections containing narrow quartz veins, arsenopyrite and pyrite mineralization and visible gold in two places. Drill hole 84-6 drilled 100 feet south of 84-5 intersected the same sections however they were not as well mineralized. Assays of the mineralized sections are summarized below:⁽⁵⁾

<u>Hole</u>	<u>Core Interval (feet)</u>	<u>Sample Width (feet)</u>	<u>Gold oz per ton</u>	<u>Silver oz per ton</u>
84-5	213.2 - 216.5	3.3	0.162	0.06
	216.5 - 219.5	2.9	0.026	0.03
	263.1 - 267.2	4.1	1.078	0.33
	267.2 - 269.0	1.8	0.006	0.02
	269.0 - 270.0	1.0	1.156	0.94
	270.0 - 272.3	2.3	0.030	0.02
	272.3 - 273.3	1.0	6.684	1.28
	273.3 - 276.6	3.3	0.096	0.08
	276.6 - 281.5	4.9	0.594	0.13
	281.5 - 284.8	3.3	0.024	0.03
284.8 - 288.4	3.6	0.010	0.02	
288.4 - 293.3	4.9	0.204	0.05	
84-6	97.8 - 101.4	3.6	0.218	0.53
	113.8 - 114.8	1.0	0.130	0.06
	177.8 - 118.1	3.3	0.066	0.04
	118.1 - 182.7	1.6	0.010	0.01
	182.7 - 186.7	4.0	0.108	0.01

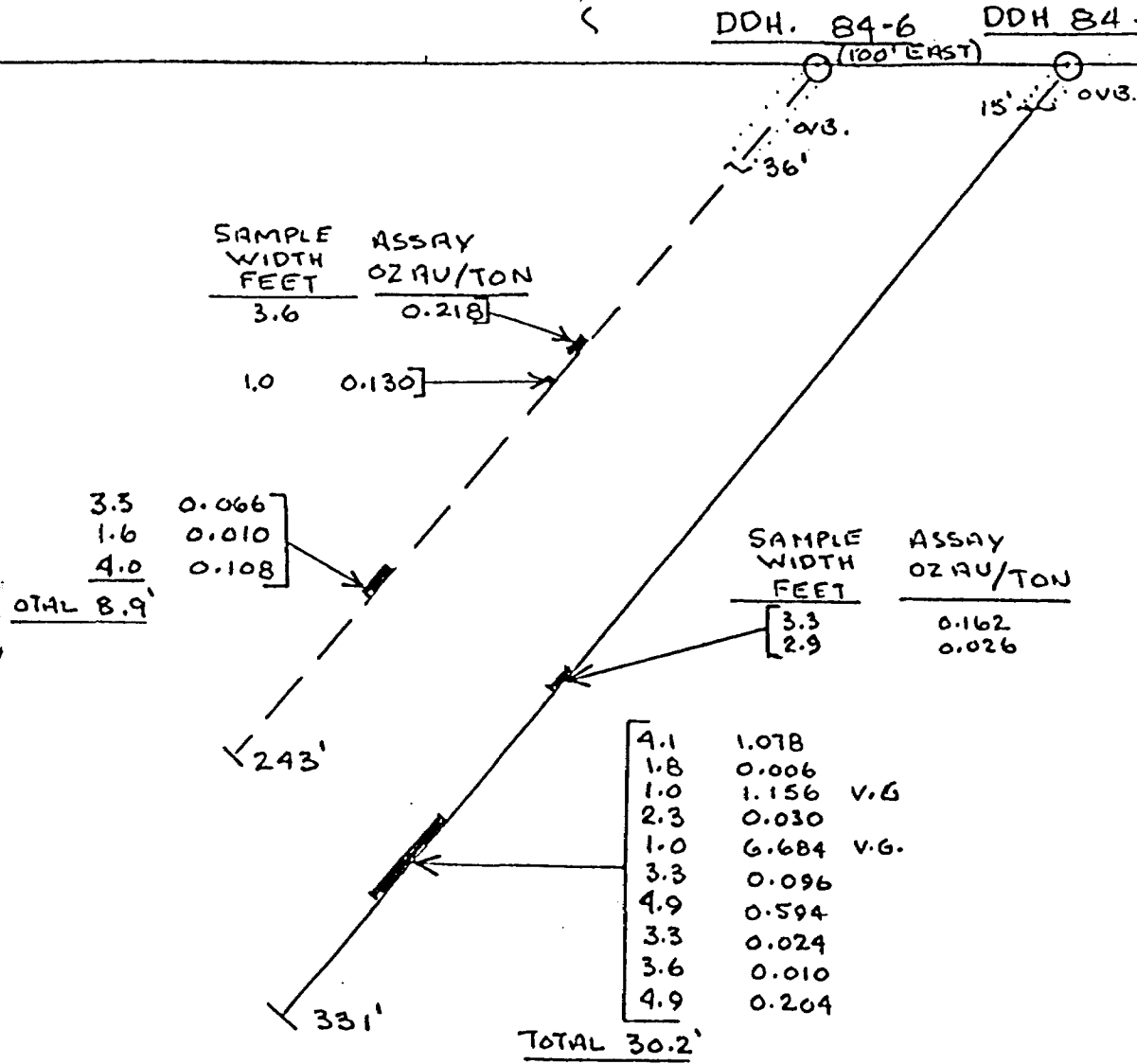
A100S

-12-

← 537°W

SHAFT VIEW STRUCTURE
PROJECTED 250' SE

DDH. 84-6 (100' EAST) DDH 84-5



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A.W.D. 30/84

LEGEND

- MINERALIZATION - QTZ/CARB VEIN, ARSENOPIRITZ, PYRITZ AND RARELY V.G.
- DIAMOND DRILL HOLE
- OVERBURDEN

CARMAC RESOURCES LIMITED	
MCINTYRE BIRCH LAKE PROPERTY	
SECTION 16-20W	
DDH. 84-5 & DDH.84-6	FIG. 5
DRAWN BY: A.W.D.	SCALE: 1"=50'

Upper Section

The upper mineralized section in hole 84-5 assays 0.162 oz Au per ton over 3.3 feet. Hole 84-6 intersected a corresponding section assaying 0.218 oz Au per ton over 3.6 feet.

Lower Section

The lower mineralized section in hole 84-5 has an average assay cut to 1.0 oz Au per ton of 0.506 oz Au per ton over 18.4 feet (263.1' to 281.5') or 0.345 oz Au per ton over 30.2 feet (263.1' to 293.3'). Uncut average assays for the 18.5 foot interval is 0.834 oz Au per ton and the 30.2 foot interval is 0.545 oz Au per ton.

The corresponding section intercepted in hole 84-6 located 100 feet southeast has an average assay of 0.074 oz Au per ton over 8.9 feet.

The lower mineralized section cored in hole 84-5 is significant, assaying cut to 1 oz, 0.506 oz Au per ton over a true width of 11.8 feet or 0.345 oz Au per ton over a true width of 19.3 feet. This section in hole 84-6 assays 0.074 oz Au per ton over a true width of 5.1 feet. Although less encouraging it nonetheless indicates continuity over mineable widths.

Secondary structural features controlling mineralization concentrations have not been determined. Of interest however, is that ground magnetic data indicates that iron formation converges with the main shear in the vicinity of holes 84-5 and 84-6.

RESERVE TARGET POTENTIAL

Holes 84-5 and 84-6 indicate the lower mineralized section has mineable width potential greater than 5 feet. Deposit target grade of 0.50 oz Au per ton (\$250.00 per ton with gold at \$500.00 Can per oz) with an average width of 10 feet is considered viable. Assuming various potential strike lengths within the 1,000 foot untested area southeast of the Cooper shaft, the following hypothetical reserve tonnage potential is calculated.

<u>Strike Length</u>	<u>Width</u>	<u>Depth</u>	<u>Tons</u>
200	10	300	50,000
400	10	300	100,000
800	10	300	200,000
200	10	500	83,000
400	10	500	166,000
800	10	500	332,000

With a grade of around 0.50 oz Au per ton a deposit with the above tonnage potential is considered a viable exploratory target.

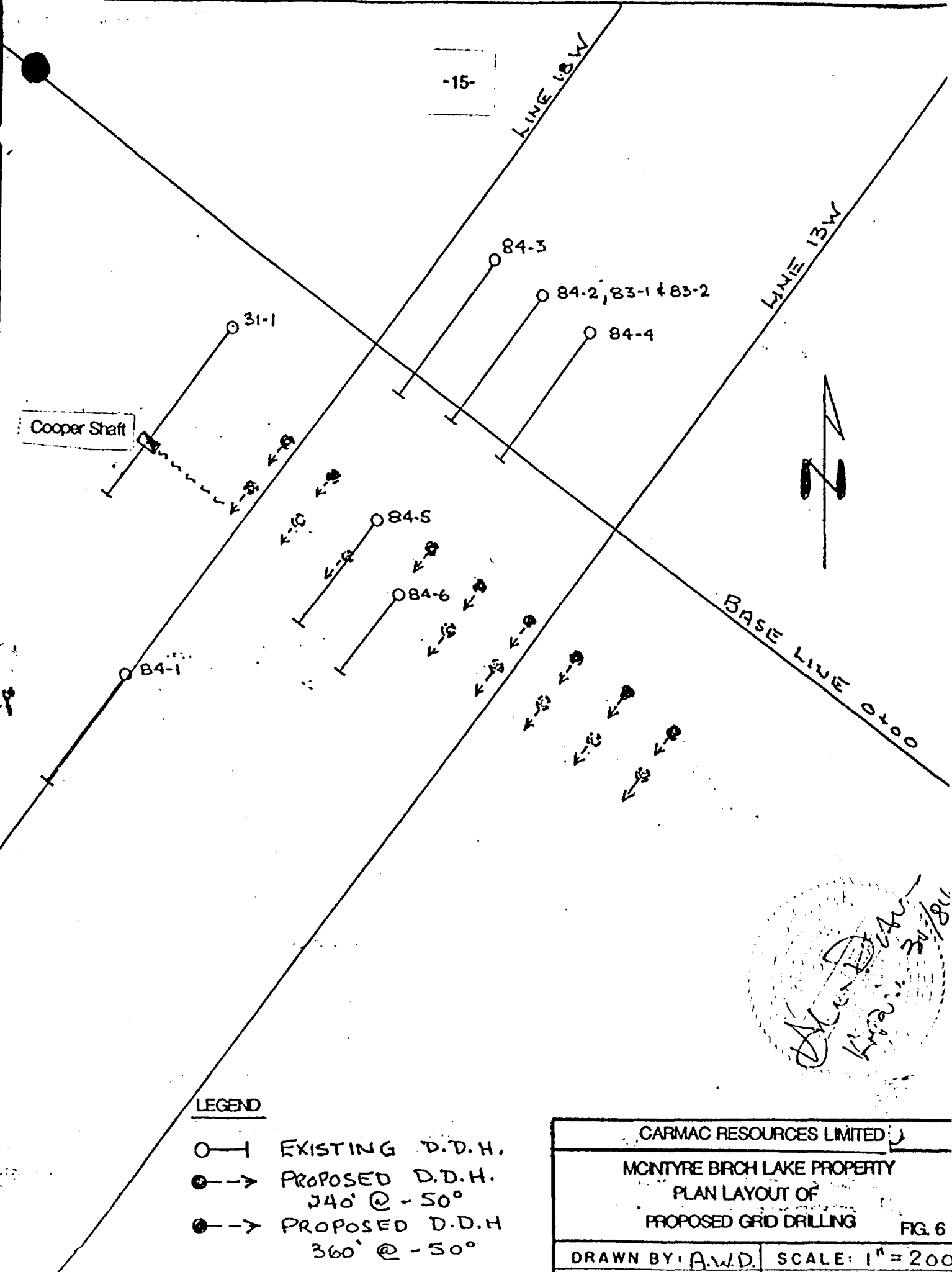
CONCLUSIONS AND RECOMMENDATIONS

The lower mineralized section cored in hole 84-5 is significant, assaying cut to 1 oz, 0.506 oz Au per ton over a true width of 11.8 feet, or 0.355 oz Au per ton over a true width of 19.3 feet. This section in hole 84-6 assays 0.074 oz Au per ton over a true width of 5.1 feet. Although less encouraging it nonetheless indicates continuity over mineable widths.

These holes are located within an overburden covered main shear zone extending 1,000 feet southeast to Birch Lake. With a reserve target grade of 0.50 oz Au per ton a detailed exploration grid drilling program is recommended. Two diamond drill holes at -50° per grid line spaced 100 feet apart to test mineralization to a depth of 300 feet for a strike length of 800 feet is recommended (Figure 6).

Secondary structural features that may have contributed to concentrations of gold mineralization within the main shear have not been determined. A detailed magnetometer survey and V.L.F. E.M. survey is recommended to be undertaken on the property to outline potential local structural features such as folds and faults.

Anomalous arsenic soil geochemical anomalies centred at 500 north on line 30 west and 800 north on line 14 west warrants detailed sampling and testing. Experimental soil horizon geochemical sampling in the vicinity of hole 84-5 is



Cooper Shaft

LEGEND

- | EXISTING D.D.H.
- > PROPOSED D.D.H.
240' @ -50°
- > PROPOSED D.D.H.
360' @ -50°

CARMAC RESOURCES LIMITED

MCINTYRE BIRCH LAKE PROPERTY
PLAN LAYOUT OF
PROPOSED GRID DRILLING

FIG. 6

DRAWN BY: A.W.D.

SCALE: 1" = 200'

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 K. D. ...
 20/8/80

recommended to be undertaken. This may establish the potential of detailed soil geochemcial sampling elsewhere on the property.

The estimated budget for the recommended exploration program is presented as a two stage program in the next paragraph.

ESTIMATED PROGRAM COSTS

	<u>Amount</u>
<u>Stage I</u>	
Re-establish lines (15 miles)	\$ 2,500.00
Magnetometer and V.L.F. E.M. Survey (\$500/mile)	7,500.00
Soil Sampling and Assaying	5,000.00
Grid Drilling (5,000' @ \$40.00/ft)	200,000.00
Exploratory Drilling (1,000' @ \$40.00/ft)	<u>40,000.00</u>
 Total Stage I	 <u><u>\$ 255,000.00</u></u>

Stage II

Assuming Stage I confirms continuity and tonnage potential, additional close spaced drilling to establish reserves of the mineralized section to a depth of 500 feet is recommended.

	<u>Amount</u>
Grid Drilling (8,000' @ \$40.00/ft)	\$ 320,000.00
Exploratory Drilling (1,000' @ \$40.00/ft)	<u>40,000</u>
 Total Stage II	 <u><u>\$ 360,000.00</u></u>
 Total Stage I and II	 <u><u>\$ 615,000.00</u></u>

Respectively submitted,

[Handwritten signature and date]
APR 20/84


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A.W. Dean, P.Eng.

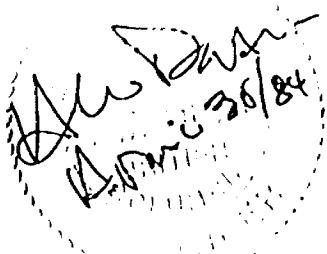
CERTIFICATE

I, Alexander W. Dean of 1327 Lake Bonavista Drive S.E., Calgary, Alberta, do hereby certify that:

1. I am a graduate of the Michigan Technological University holding a B.Sc. in Geological Engineering, 1958.
2. I am registered as a Professional Geologist of the Province of Alberta, and registered as a Professional Engineer of the Province of British Columbia.
3. I have practiced my profession for 26 years mainly in Canada and the U.S.A.
4. The accompanying report is based on my personal analysis of unpublished data provided by Carmac Resources Limited, reports and maps available from government sources and my direct geological supervision of a diamond drill program on the property in early April 1984.
5. I have not, nor do I expect to receive any interest directly or indirectly in the property or in the securities of Carmac Resources Limited.
6. I consent to the use of this report in, or in connection with, a Prospectus, or a Statement of Material Facts relating to the raising of funds for conducting the exploration program recommended in the report.

, Dated at Calgary, Alberta, this 30th day of April A.D., 1984.


A.W. Dean, P.Eng.



REFERENCE LIST

Reference
No.

1. Thorpe, W.H.
1975: Field work on Birch Lake Claims, report and maps prepared for McIntyre Mines Limited.
2. Thurston, P.C., Jackson, M.C., and Pirie, I.
1981: Precambrian Geology of the Birch Lake Area, Kenora District (Patricia Portion); Ontario Geological Survey Preliminary Map P. 2387, Geological Series, Scale 1:50,000. Geology 1977-78.
3. G.S.C.
1960 Birch Lake, Kenora District, Ontario; Ontario Department of Mines, Map 883G. Scale: one inch to one mile.
4. Adams, N.D.
1940 Report on McIntyre Birch Lake claims, Drilling Campaign, September 10 - November 1, 1940, report prepared for McIntyre Mines Limited.
5. Dean, A.W.
1984 Report on Diamond Drill Program, March 26 to April 9, 1984, for Carmac Resources Limited.

DIAMOND DRILL RECORD

PROPERTY McIntyre's Diamond Drilling

HOLE NO. 24-1

SHEET NUMBER 002

SECTION FROM 0 TO 15.1 meters

STARTED March 29/54

LATITUDE 46° 20' South

DATUM _____

COMPLETED March 30/54

DEPARTURE km 15.1 km West

BEARING S 37° W

ULTIMATE DEPTH 15.1 meters

ELEVATION N/A

DIP -5.0°

PROPOSED DEPTH _____

DEPTH FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD g	SLUDGE GOLD g
0 - 2.5	Swabrock				
2.5 - 2.6	Basalt: Dark green, chloritized, moderate schistosity, very fine grained				
2.6 - 3.4	Iron Formation: banded fine grained magnetite and sugary quartz - bands max 2 cm wide $\angle 35^\circ$ to core. 30 to 25% magnetite.				
3.4 - 6.9	Basalt: Dark green, chloritized, moderate schistosity, very fine grained, occasional qtz/cryst stringer 1 cm, 1-2% crystalline pyrite.				
6.9 - 12.3	Iron Formation: banded fine grained magnetite, sugary quartz & minor chert - bands max 4 cm wide $\angle 35^\circ$ to core. 25% magnetite.				
12.3 - 15.1	Basalt: Dk green, chloritized, moderate schistosity, very fine grained, occas. qtz/cryst stringer, 1-2% pyrite.				

DRILLED BY Midwest Drilling

SIGNED [Signature]

DIAMOND DRILL RECORD

PROPERTY _____

 HOLE NO. 84-1

 SHEET NUMBER two

 SECTION FROM 15.1 m TO 63.8 m

STARTED _____

LATITUDE _____

DATUM _____

COMPLETED _____

DEPARTURE _____

BEARING _____

ULTIMATE DEPTH _____

ELEVATION _____

DIP _____

PROPOSED DEPTH _____

DEPTH ^{meters} FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD g	SLUDGE GOLD g
15.1 - 15.4	IRON FORMATION: banded f.g. mag, avg. avg. qtz & minor chert bands ∠ 35° to core - 25% mag.				
15.4 - 42.5	BASALT: Dk. green, chloritized, weak schistosity, v.f. grained, occasional qtz/carb stringers generally 1 cm. wide. 1 to 2% pyr. At 30.8 meters 3 cm. qtz stringer with 10% cubic pyr.				
42.5 - 58.8	BASALT: AS above with moderate schistosity. fine qtz/carb stringers 11 to schistosity comprising 10% of rock. ∠ 30 to 35° to core. @ 51.3 meters 3 cm qtz vein with 10% cubic pyr.				
58.8 - 60.0	IRON FORMATION: banded fine grained to cherty - 10% magnetite - ∠ 35° to core.				
60.0 - 63.8	BASALT: Dk. green, chloritized, weak schistosity, v.f. grained, occasional qtz/carb stringers. 1 to 2% pyr.				

DIAMOND DRILL RECORD

PROPERTY _____

 HOLE NO. 841

 SHEET NUMBER TK22

 SECTION FROM 63.8 TO 98.7

STARTED _____

LATITUDE _____

DATUM _____

COMPLETED _____

DEPARTURE _____

BEARING _____

ULTIMATE DEPTH _____

ELEVATION _____

DIP _____

PROPOSED DEPTH _____

DEPTH, <small>Meters FEET</small>	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD \$	SLUDGE GOLD \$
63.8-64.1	Iron Formation: banded f.g. mag, argony qtz - 15% magnetite.				
64.1-64.9	Basalt: dk. green, chloritized, weak schistosity, v.f. grained, 1 to 2% pyrite.				
64.9-65.8	Iron Formation: banded f.g. mag, & argony qtz - 20% magnetite.				
65.8-79.3	Basalt: dk. green, chloritized, weak schistosity, v.f. grained. 1 to 2% pyrite. 76.05-76.20 - barren qtz vein.				
79.3 -					
79.3-79.9	Iron Formation: banded, f.g. mag, argony qtz - 15% magnetite, occasional blebs of pyrite - banding $\leq 35^\circ$ to core.				
79.9-98.7	Basalt: dk green, chloritized, weak schistosity, v.f. grained, occas. qtz/carb vein. 87.9 to 88.1 - barren qtz.				

DRILLED BY _____

SIGNED _____



DIAMOND DRILL RECORD

PROPERTY _____

HOLE NO. 84-1

SHEET NUMBER Four

SECTION FROM 98.7 TO 104.0

STARTED _____

LATITUDE _____

DATUM _____

COMPLETED _____

DEPARTURE _____

BEARING _____

ULTIMATE DEPTH _____

ELEVATION _____

DIP _____

PROPOSED DEPTH _____

DEPTH FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD \$	SLUDGE GOLD \$
98.7-102.6	Iron formation: banded f.g. mag. chloite & augen qtz - 15% magnetite. occasional stringer of crystalline pyrite.				
102.6-104.0	Basalt: dk green, as above. 1 to 2% pyrite.				
END OF HOLE					
DIP TESTS					
METERS	ETCH ANGLE	CORRECTED ANGLE			
30	- 61°	- 53°			
60	- 60°	- 52½°			
101	- 57°	- 49°			
CORR Recovery 99%					

DRILLED BY _____

SIGNED _____

A. W. Denton

DIAMOND DRILL RECORD

PROPERTY McIntyre's Birch Lake

HOLE NO. 84-2

SHEET NUMBER ONE

SECTION FROM 0 TO 43.4 meters STARTED March 30/84

LATITUDE Δ 205 to 2125 NORTH

DATUM _____

COMPLETED March 31/84

DEPARTURE hisc 16+20W

BEARING S37° West

ULTIMATE DEPTH 122 meters

ELEVATION _____

DIP -50°

PROPOSED DEPTH _____

DEPTH ^{meters} FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD g	SLURRY GOLD g				
0-1.2	CASING								
1.2-7.1	ANDESITE (Diorite): Grey Green, massive to weakly schistose, fine grained - mottled texture, occasional qtz/carb stringer 1cm wide - 1% diss pyr.								
7.1-22.2	ANDESITE: Grey green, massive, with very fine grained, occas. qtz/carb stringer 1cm wide - 1% diss pyr.								
22.2-30.0	ANDESITE (Diorite): Grey Green, massive, fine grained, mottled texture, occas qtz/carb stringer 1cm wide - 1% diss pyr.								
30.0-43.4	BASALT: Dark green, generally massive, chloritized, very fine grained occasional qtz/carb stringer 1cm wide. ± 1% disseminated euhedral pyrite.								

DIAMOND DRILL RECORD

PROPERTY BIRCH LAKE. HOLE NO. 84-2

SHEET NUMBER Two SECTION FROM 43.4 TO 83.0 meters STARTED _____

LATITUDE _____ DATUM _____ COMPLETED _____

DEPARTURE _____ BEARING _____ ULTIMATE DEPTH _____

ELEVATION _____ DIP _____ PROPOSED DEPTH _____

DEPTH <small>Meters</small> FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD g	SLUDGE GOLD g				
43.4 - 51.1	<p><u>Andesite</u>: Green, moderate schistosity, chloritized, fine grained with fine 5% fine qtz/carb shinglers to schistosity, ∠ 40° to core, 1-2% pyr.</p>								
51.1 - 65.0	<p><u>Andesite</u>: As above with 2-3% pyr. and white qtz veins generally to schistosity const comprising 15% of the rock.</p> <p>52.0 - 52.2 - qtz vein - barren 54.9 - 55.05 " " - " 12 others 2 to 4 cm wide.</p>								
65 - 83.0	<p><u>Andesite</u>: Green, moderate schistosity, chloritized, very fine grained with fine fine 10% qtz/carb shinglers to schistosity ∠ 40° to core, ± 3% euhedral pyrite generally to schistosity.</p> <p>75.0 - 75.3 - qtz vein @ 64.7 a 4cm qtz vein trace of chalc.</p>								

DRILLED BY _____

SIGNED Al. D. ...

DIAMOND DRILL RECORD

PROPERTY McIntyre - Birch Lakes

HOLE NO. 84-2

SHEET NUMBER THREE SECTION FROM 83.0 TO _____ STARTED _____
 LATITUDE _____ DATUM _____ COMPLETED _____
 DEPARTURE _____ BEARING _____ ULTIMATE DEPTH _____
 ELEVATION _____ DIP _____ PROPOSED DEPTH _____

DEPTH FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD \$	SLUDGE GOLD \$
83.0 - 110.7	BASALT: Dark Green, generally massive, chloritized, very fine grained, occasional 1cm Qtz/carb veins with epidote. 1% chis pyr. banded,				
110.7 - 111.4	IRON FORMATION: Cherty, aphanitic to fine grained. 10% magnetite, 2% euhedral pyrite. 40° to core.				
111.4 - 112.9	BASALT: AS above				
112.9 - 113	IRON FORMATION: AS above				
113 - 122	BASALT: Dark Green, generally massive, chloritized, v.f. grained, occur 1cm Qtz/carb veins with epidote. 1% chis pyr.				
	121.3 - 121.6 - Chert, w magnetite.				
	END OF HOLE				
Dip Tests	30 meters 60 meters 97 meters				
ETCH ANGLE	60 meters - 58° -58° -52°				
CORRECTED ANGLE	67 meters - 50° -48° -43 1/2°				

N.M.P., TORONTO-STOCK FORM NO. 801 REV. 12/51

Core Recovery 99%

DRILLED BY _____

SIGNED _____

A. L. Denny

DIAMOND DRILL RECORD

PROPERTY McIntyre Birch Lake

HOLE NO. 84-3

SHEET NUMBER 302

SECTION FROM 0 TO 33.5 meters STARTED March 31/84

LATITUDE Δ 2+25 North

DATUM _____

COMPLETED April 2/84

DEPARTURE 15 + 20 West

BEARING S 37° West.

ULTIMATE DEPTH 167 meters.

ELEVATION _____

DIP -60°

PROPOSED DEPTH _____

DEPTH ^{meters} FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD g	SLURGE GOLD g				
0-2.4	CASING:								
2.4-17.7	Andesite (Diorite): Grey green, massive, fine grained with mottled texture, occasional 1cm qtz/carb vein < 1% chis. pyrite.								
17.7-19.5	Andesite (Diorite): Grey green, massive, medium grained with mottled texture, < 1% chis pyrite.								
19.5-29.3	Andesite (Diorite): As above, fine grained.								
29.3-33.5	Andesite: Green, moderate schistosity, chloritized with 5% fine. Line qtz/carb stringers to schistosity - < 55° to core, 1% euhedral pyrite.								

DIAMOND DRILL RECORD

PROPERTY M^e Intyre - Birch Lake

HOLE NO. 84-3

SHEET NUMBER Two SECTION FROM 33.5 TO 59.1 meters STARTED _____

LATITUDE _____ DATUM _____ COMPLETED _____

DEPARTURE _____ BEARING _____ ULTIMATE DEPTH _____

ELEVATION _____ DIP _____ PROPOSED DEPTH _____

meters. DEPTH FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD g	SLUDGE GOLD g
33.5 - 46.9	<p><u>ANDESITE</u>: Green, chloritized with weak schistosity. Contains a series of white qtz veins 33% of section. Qtz contains minor pyrite. Rk inclusions contain ±3% pyrite.</p> <p>Qtz veins > 10 cm.</p>				
	34.15 - 34.5				
	36.6 - 36.7				
	36.9 - 37.0				
	39.9 - 40.4				
	40.8 - 43.3	17564	40.8 - 42.0		
	44.1 - 44.4	17565	42.0 - 43.3		
	44.7 - 44.8				
	45.3 - 45.4				
	46.4 - 46.9				
46.9 - 59.1	<p><u>ANDESITE</u>: Green, chloritized with moderate schistosity, fine line of fingers of Qtz/carb to schistosity < 48° to core. 1% euhedral pyrite.</p>				

DIAMOND DRILL RECORD

PROPERTY McIntyre Direct Lakes

HOLE NO. 84-4

SHEET NUMBER 012

SECTION FROM 0 TO 40.5

STARTED April 4/84

LATITUDE N 2425 North

DATUM _____

COMPLETED April 6/84

DEPARTURE L 15+20 W

BEARING S 37° W 1/2 S

ULTIMATE DEPTH _____

ELEVATION _____

DIP -60°

PROPOSED DEPTH _____

DEPTH FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD g	SLUDGE GOLD g
0 - 2.3	CASING				
2.3 - 4.8	ANDSITZ: Green, chloritized, massive, fine grained with disc euhedral pyr 1%.				
4.8 - 33.5	<p>Basalt: Dark green, chloritized, massive to weak schistosity in places, v.f.g. with occasional qtz/carb stringer with epidote, 1/2-1% pyr</p> <p>29.66 - 29.9: qtz/carb vein, white barren</p> <p>34.67 - 34.8 " " " " " "</p>				
33.5 - 38.2	<p>Basalt: Dark green, chloritized, moderate schistosity, 1% disc euhedral pyr & occasional qtz/carb veins as follows:</p> <p>34.67 - 34.8: qtz/carb, white, barren</p> <p>36.95 - 37.35: " " " "</p>				
38.2 - 40.5	ANDSITZ: Green green, fine to medium grained, mottled texture, chloritized mafic greenish porphyritic (c. 55° to core). trace of disc pyr.				

DIAMOND DRILL RECORD

PROPERTY McIntyre - Birch Lake

HOLE NO. 84-4

SHEET NUMBER Two SECTION FROM _____ TO _____ STARTED _____
 LATITUDE _____ DATUM _____ COMPLETED _____
 DEPARTURE _____ BEARING _____ ULTIMATE DEPTH _____
 ELEVATION _____ DIP _____ PROPOSED DEPTH _____

DEPTH FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD \$	SLUDGE GOLD \$
40.5-48.9	<u>Andesite</u> : Green, chloritized, malachite schistosity at angle 55° to core, fine line qtz/cub stringers to schistosity, 1 to 2% pure.				
	47.0-47.1: qtz/cub with tourmaline.				
48.9-85.7	<u>Basalt</u> : Dark green, chloritized, weakly schistose v.f. grained, occasional qtz/cub stringers with epidote.				
85.7-99.2	<u>Basalt</u> : Dark green, chloritized, moderate schistosity, fine line qtz/cub stringers to schistosity @ angle 30° to core, occasional qtz/cub stringers with epidote, 1 to 2% pure, well grained with schistosity. Thin bands of Iron formation as follows: 96.5-97.0: I.F., banded v.f.g. cherty 10% magnetic. 97.4-97.9: I.F., banded, cherty 10% mag.				
99.2-150.9	<u>Basalt</u> : Dark green, weakly schistose to massive, chloritized, occasional qtz/cub with stringers with epidote, 1 to 2% embedded pure blebs. Contains numerous bands of Iron formation as follows:				

DIAMOND DRILL RECORD

PROPERTY McIntyre Birch Lake

HOLE NO. 84-4

SHEET NUMBER Three SECTION FROM _____ TO _____ STARTED _____
 LATITUDE _____ DATUM _____ COMPLETED _____
 DEPARTURE _____ BEARING _____ ULTIMATE DEPTH _____
 ELEVATION _____ DIP _____ PROPOSED DEPTH _____

DEPTH FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD %	SLUDGE GOLD $\frac{1}{2}$
	99.6-100.2 : banded, v.f.g 15% mag, 3% pure, qb/chaille				
	102.1-102.8 : " f.g 10% mag, 4% pure qb/chaille				
	105.3-105.5 : " cherty, 5% mag, 3% pure.				
	115.4-116.1 : Chert, aphanitic				
	137.17-137.34 : banded, f.g 15% mag, 5% pure qb, 30' zone				
	137.75-138.0 : " v.f.g 5% mag, 5% pure.				
	140.5-140.8 : " v.f.g 5% mag.				
150.9-152.9	<u>Andesite</u> : Grey green, chloritized, massive, fine to medium grained, mottled texture, chloritized mafic phenos random, cut at 55° to core.				
152.9-157.7	<u>Andesite</u> : Grey green, massive, medium grained more felsic phenos have gneissic appearance. - trace of pyr END OF HOLE				
DIP TEST.	50m 100m 150m				
BIRCH LAKE	-66° -62° -59°				
CORRECTED ANGLES	-59° -54½° -51°				

DIAMOND DRILL RECORD

PROPERTY The Int'l 422 - Birch holes HOLE NO. 84-5
 SHEET NUMBER ONE SECTION FROM 0 TO 54.5 ~~4.6~~ meters
 LATITUDE Δ 2 + 30' South DATUM _____ STARTED April 6 / 84
 DEPARTURE h 16 + 20 W BEARING S 37° W COMPLETED April 7 / 84
 ELEVATION _____ DIP -50° ULTIMATE DEPTH 101.0 meters
 PROPOSED DEPTH _____

DEPTH METERS	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD g	BLUES GOLD g
0 - 4.6	Casing				
4.6 - 36.0	<u>BASALT</u> : Dark green, chloritized, weak schistosity, very fine grained, occasional qtz/carb stringers less than 1cm wide & random epidote stringers, 1% pyx.				
36.0 - 42.5	<u>BASALT</u> : Dark green, chloritized, moderate schistosity, qtz/carb fine line stringers to schistosity (5% sh RK) (see angle 35° to core ± 2% pyx)				
42.5 - 45.5	<u>Andesite</u> : Green, massive, fine grained with mottled texture, trace of disc pyx.				
45.5 - 50.4	<u>BASALT</u> : Dark green, chloritized, weak schistosity, very fine grained, occasional qtz/carb stringers with epidote, ± 2% pyx elsewhere.				
50.4 - 54.5	<u>Andesite</u> : Grey green, massive, fine to medium grained with mottled texture, gneissic appearance less than 1% disc pyx.				

DIAMOND DRILL RECORD

PROPERTY MCT Int'l - Birch Lakes

HOLE NO. 84-5

SHEET NUMBER Two SECTION FROM 54.5 TO 76.2 meters STARTED _____

LATITUDE _____ DATUM _____ COMPLETED _____

DEPARTURE _____ BEARING _____ ULTIMATE DEPTH _____

ELEVATION _____ DIP _____ PROPOSED DEPTH _____

DEPTH FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD %	SLUDGE GOLD %
54.5 - 61.1	<u>BASALT</u> : Dark green, chloritized, moderately schistose, very fine grained, qtz/crb fine line stringers to schistosity, angle 35° to core.				
61.1 - 70.6	<u>BASALT</u> : Dark green, chloritized, weak schistosity, with occasional qtz/crb stringers, average 1-2% pure pyrox. in places as follows: 65.0 - 66.0 : 30% qtz/crb random, 4% opt. 1% f.g. intrusive 66.0 - 66.9 : chlorite, 2% f.g. massive, 2% pyrox. f.g. to core				
70.6 - 71.3	<u>IRON FORMATION</u> : banded, fine grained magnetite 10%, augen, qtz and chlorite, 2% pure, bands angle 35° to core.				
71.3 - 74.7	<u>BASALT</u> : Dark green, chloritized, weak schistosity, chloritized f.g. v.f.g., 1% dis. outwashed pyroxite.				
74.7 - 76.2	<u>ANDSITES</u> : Grey green, massive, fine to medium grained with mottled texture with trace of cl. pure.				

DIAMOND DRILL RECORD

PROPERTY 16th July 1922 Birch Lake

HOLE NO. 84-5

SHEET NUMBER 11222

SECTION FROM 76.2 TO 101.0 meters STARTED _____

LATITUDE _____

DATUM _____

COMPLETED _____

DEPARTURE _____

BEARING _____

ULTIMATE DEPTH _____

ELEVATION _____

DIP _____

PROPOSED DEPTH _____

DEPTH METERS DEPTH FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD %	SLUDGE GOLD %
76.2 - 91.7	<p>BASALT: Dark green, chloritized with moderate schistosity with angle 35° to core, fine line qtz/carb stringers and occasional qtz/carb vein, with arsenic pyrite, pure & V.G. notes as follows.</p> <p>78.9 - 80.2: chlorite, 1% arsenic, 2% pure, both embedded</p> <p>80.2 - 81.4: 34cm qtz/carb vein, 3% arsenic, 2% pure, both embedded</p> <p>81.98 - 82.28: 8cm qtz/carb vein, V.G. at cut @ 82.05, 4% arsenic</p> <p>82.28 - 83.0: chlorite, 3cm stringer of pure, 1% embedded arsenic</p> <p>83.0 - 83.3: 5cm qtz/carb vein, V.G. in qtz @ 83.1, 3% arsenic in chlorite</p> <p>83.3 - 84.3: 25cm qtz/carb vein, Average 1% arsenic, 2% pure.</p> <p>84.3 - 85.8: 60% qtz/carb, 10% pure, 5% arsenic embedded, some magnetite.</p> <p>85.8 - 86.8: fine line qtz/carb, 3% pure, 1% arsenic.</p> <p>87.9 - 89.4: 10% qtz/carb veins, 7% pure, 3% arsenic.</p> <p>Also included in a thin band of I.F. as follows.</p> <p>82.55 - 82.65: 5% magnetite with 2cm of 10% pure, 2% arsenic.</p>				
91.7 - 101.0	<p>BASALT: Dark green, chloritized with weak to moderate schistosity, occasional qtz/carb stringers, contains bands of I. Formation as follows:</p> <p>94.4 - 96.5: I.F., 20% mag, with qtz & chlorite.</p>				

DIAMOND DRILL RECORD

PROPERTY 11th Int'l. Birch Lake

HOLE NO. 84-6

SHEET NUMBER 012

SECTION FROM 0 TO 35.0 meters

STARTED April 7/84

LATITUDE Δ 3400 South

DATUM _____

COMPLETED April 8/84

DEPARTURE 15+20 West

BEARING _____

ULTIMATE DEPTH 74.0 meters

ELEVATION _____

DIP -50°

PROPOSED DEPTH _____

DEPTH METERS FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD g	SLURRY GOLD g
0-11	CASING				
11-22.3	<u>BASALT</u> : Dark Green, chloritized, moderate schistosity, v.f.g, fine line qtz/carb stringers to schistosity, angle 33° to core. also pyx 1%.				
22.3-22.4	<u>Iron formation</u> : Banded, 15% magnetite, qtz & chlorite.				
22.4-28.4	<u>BASALT</u> : Dark Green, chloritized, weak schistosity, fine phenocrysts aligned with schistosity, also pyx 1%.				
28.4-29.0	<u>Iron formation</u> : Banded, 10% f.g. magnetite, qtz & chlorite, two stringers of core pyx.				
29.0-35.0	<u>BASALT</u> : Dark Green, chloritized, moderate schistosity, fine line qtz carb stringers to schistosity, with occasional qtz veins, arsenic & pyx as follows.				
29.8-30.9	10cm ± 40cm qtz/carb veins			2% pyx	2% arsenic
30.9-					
34.7-35.0	10cm qtz/carb veins			1 to 2% arsenic.	

DIAMOND DRILL RECORD

PROPERTY McIntyre Birch hole HOLE NO. 84-6

SHEET NUMBER Two SECTION FROM 35.0 TO _____ STARTED _____
 LATITUDE _____ DATUM _____ COMPLETED _____
 DEPARTURE _____ BEARING _____ ULTIMATE DEPTH _____
 ELEVATION _____ DIP _____ PROPOSED DEPTH _____

DEPTH FEET	FORMATION	SAMPLE NO.	WIDTH OF SAMPLE	GOLD \$	SLUDGE GOLD \$
35.0 - 45.8	<u>BASALT</u> : Dark green, chloritized, weakly sheared to massive with felsic phenos aligned in places. chis py ± 1%.				
45.8 - 64.5	<u>BASALT</u> : Dark green, chloritized, weakly sheared with occasional qtz/carb stringers. PyR \$ Arseno AS follows: 54.2 - 55.2: fine qtz/carb stringers, Average 3% PyR, 2% Arseno 55.7 - 56.9: 15% qtz/carb veins, Average 2% PyR, 3% Arseno Thin bands of Iron formation as follows: 51.3 - 51.5: 20% magnetite, qtz, chalc, 4% PyR. 62.1 - 62.4: 15% magnetite " " 62.7 - 63.2: 15% " " "				
64.5 - 74.0	<u>BASALT</u> : Dark Green, massive, chloritized, fine grained with epizote in places. <u>END OF HOLE</u>				
DIP TESTS	40m 70m.				
FITCH ANGLE	-57° -57°				
CORRECTED ANGLE	-49° -49°				

[Handwritten Signature]



52N08NW0041 63.4511 CASUMMIT LAKE

020

REPORT ON

MCINTYRE MINES PROPERTY
BIRCH LAKE AREA
RED LAKE MINING DIVISION, ONTARIO

for

CARMAC RESOURCES LIMITED

by

W. H. THORPE, P.ENG.
WHITE ROCK, B.C., 30 APRIL, 1983

OM 83-1-C-386



52N08NW0041 63.4511 CASUMMIT LAKE

020C

TABLE OF CONTENTS

	<u>Page</u>
Introduction	1
Summary	2
Claim and Patent Numbers	5
Location and Access	6
History	7, 8
Topography and Drainage	9
Timber	9
Geology	10, 11
Conclusions	12
Recommendations	14
References	16
Certification	17, 18

ILLUSTRATIONS

	<u>Page</u>
Location Map	3
Claim Map	4
Geology - Map	13
Vertical Section	15

REPORT ON
McINTYRE MINES PROPERTY
BIRCH LAKE AREA
ONTARIO
for
CARMAC RESOURCES LIMITED

INTRODUCTION

The following report on the McIntyre Birch Lake claims has been prepared for Carmac Resources Limited. This report indicates new possibilities for exploration which have not been pursued previously.

The report is based on the writer's knowledge of the area, previous work at producing gold properties, access to McIntyre records and limited published information.

SUMMARY

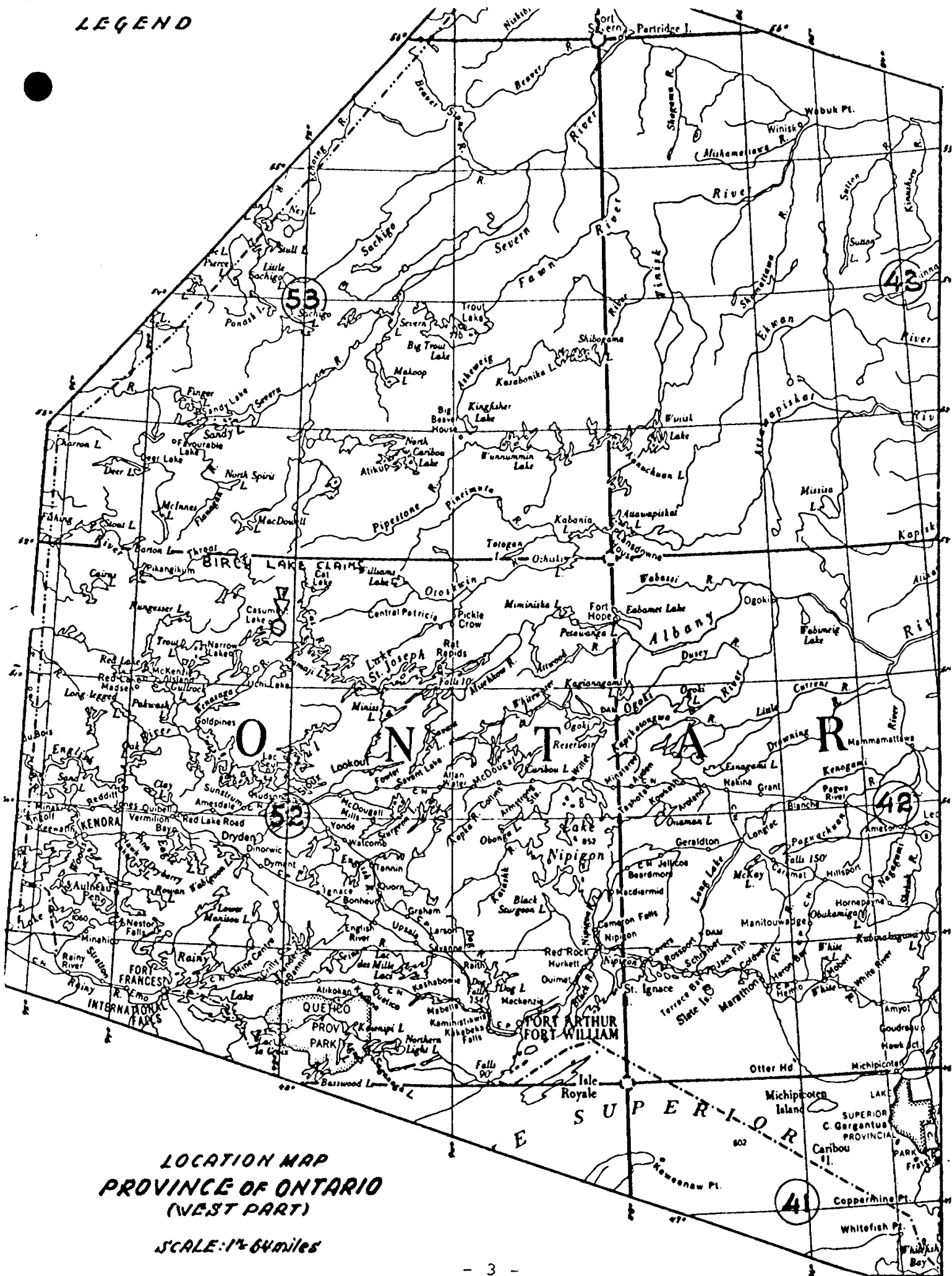
Considerable exploration work has been completed on the McIntyre Birch Lake claims since gold was discovered there in 1928. Gold occurs in quartz-carbonate-tourmaline veins accompanied by arsenopyrite, pyrite and chalcopyrite. The veins lie along shears in chloritized, carbonatized intermediate to basic volcanics.

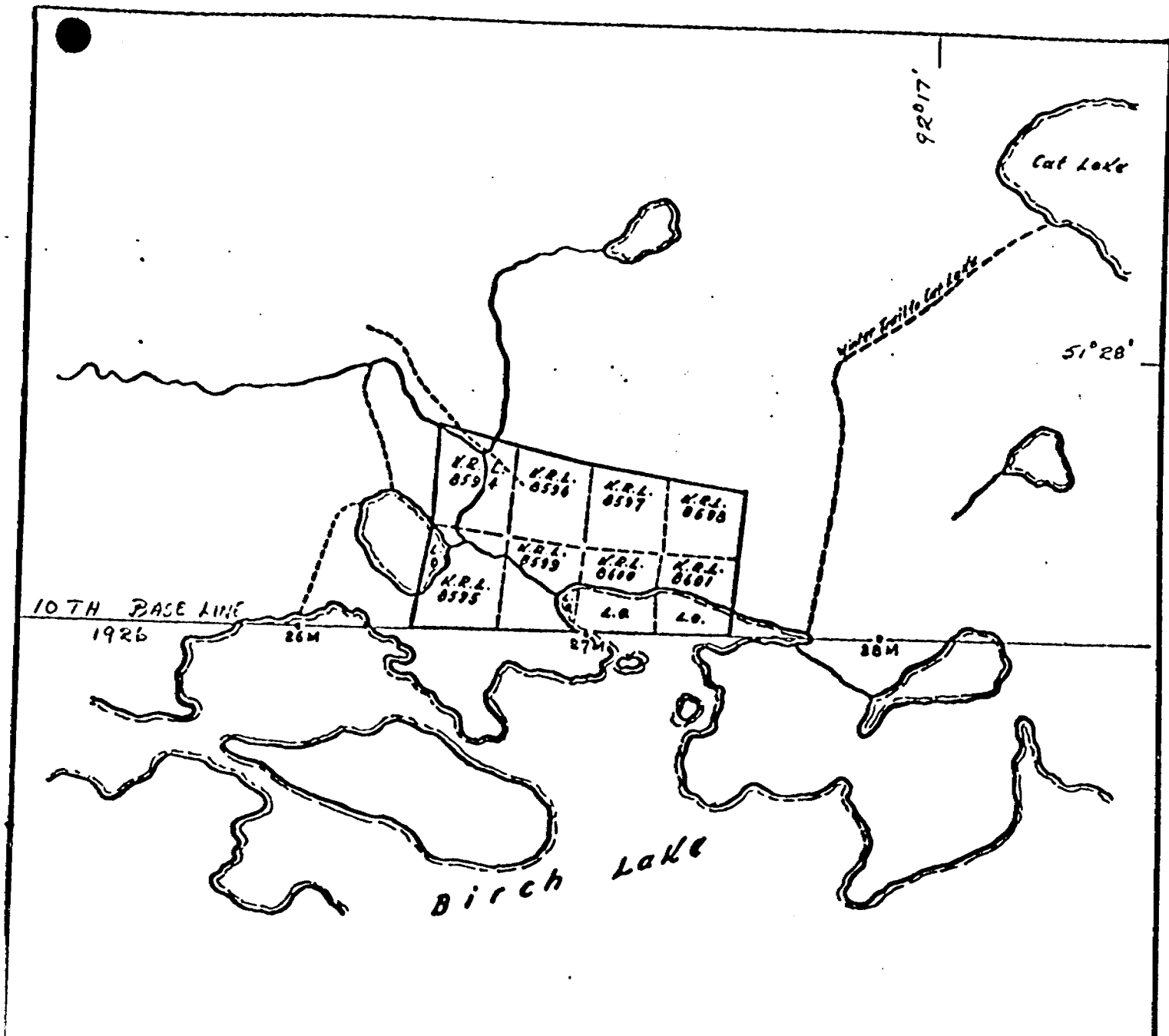
The veins are lensy in shape and usually lie en echelon along shear planes. Thus all exploration carried out to date has been discouraging because of the limited nature of individual veins. Prospecting and geological mapping by a field crew in 1975 discovered several quartz-diorite intrusives containing quartz-carbonate veins which have not been investigated previously.

The most favourable quartz-diorite along with its adjacent shears have been selected for a diamond drill investigation.

Costs of this program are estimated at \$67,000.

LEGEND





M^CINTYRE PORCUPINE MINES LTD.
BIRCH LAKE CLAIM GROUP
DISTRICT OF KENORA
ONTARIO

SCALE: 1" = 40 CHAINS

FEBR. 1960.

CLAIMS

A total of 8 claims, 398.91 acres (land and lake water) make up the Birch Lake property as follows:

<u>PARCEL NO.</u>	<u>PATENT NO.</u>	<u>CLAIM NO.</u>	<u>TOTAL ACREAGE</u>
421	8332	KRL 8594	56.83
422	8333	KRL 8595	60.68
423	8334	KRL 8596	51.40
424	8336	KRL 8597	45.58
425	8337	KRL 8598	40.50
426	8338	KRL 8599	50.40
427	8339	KRL 8600	47.95
428	8340	KRL 8601	45.57
		TOTAL:	<u>398.91</u>

Over lake waters the following Licences of Occupation are held:

<u>CLAIM NO.</u>	<u>L.O. NO.</u>	<u>WATER ACREAGE</u>
KRL 8595	3213	8.96
KRL 8599	3214	7.50
KRL 8600	3215	27.39
KRL 8601	3216	25.41
	TOTAL:	<u>69.26</u>

LOCATION AND ACCESS

The Birch Lake property, consisting of 8 contiguous patented claims and making up 398.91 acres, is located on the north end of Birch Lake, approximately 70 miles northeast of the town of Red Lake. The former gold producer known as the Casey Summit or New Jason, on Casummit Lake, is situated about 2 miles to the northwest on Casummit Lake.

There are no roads or landing fields in the area, the usual method of access being by air from Red Lake.

HISTORY OF BIRCH LAKE CLAIMS

- 1928 Discovery of gold-bearing quartz vein by Jack Miller, a McIntyre prospector. A boundary survey was completed in September and the claims brought to patent.
- 1929 Extensive prospecting and trenching by McIntyre personnel led to the discovery of other veins along the general strike.
- 1931 Five diamond drill holes were put down totalling 1,954 feet. One ore intersection, 0.38 ounces of gold over 13 feet, in hole No. 4, was obtained.
- 1934 Property leased to Cooper and Barry. A 90 foot vertical shaft was sunk and a 20 ton mill erected which produced at least 200 ounces of gold. Tailings suggest 1200 tons were processed. A drift was driven approximately 50 feet below surface from the shaft area for a horizontal distance of 155 feet, only part of which was ore grade. Evidently most of the mill feed came from surface trenches.
- 1935 Approximately 2000 feet of diamond drilling was carried out by Cooper along the main strike. The results must have been discouraging as the property was returned to McIntyre afterwards.

HISTORY (continued)

- 1940 McIntyre put down 7 holes along the general strike to test the previously known veins for continuity. Occasional erratic values were intersected but these could not be correlated from hole to hole.
- 1975 A McIntyre field crew carried out a program of soil sampling, geophysical surveying, blasting, sampling and geological mapping. An EM survey indicated some conductivity in bands of iron formation. Several quartz-diorite intrusives were located by prospecting. These had not been recorded previously.

TOPOGRAPHY AND DRAINAGE

The region is one of low relief, drainage is sluggish and muskeg is common. Some cliffs of 25 feet high are present where the initial vein was found on the McIntyre property but generally the country is flat although undulating where bedrock is shallow. Low lying areas are often covered with muskeg which is underlaid by glacial drift. Maximum relief above lake waters is approximately 60 feet.

TIMBER

Trees grow to sufficient size to be useful for finished lumber. Timber for ground support, draw points and raises is also available. However, forest growth is not heavy being restricted in swampy ground or often stunted elsewhere due to the proximity of bedrock. The largest conifers would be about 22 inches in diameter and 35 feet tall.

GEOLOGY - GENERAL

The Birch Lake property lies within a belt of Keewatin type acid to basic lavas, pyroclastics and iron formation which extends along the north shore of Birch Lake in the east to the Mink Lake area in the west. Overlying the Keewatin are some Timiskaming-type sediments. Intrusions of Algomian type include granite, syenite, quartz porphyry, quartz-feldspar porphyry, diorite and quartz veins.

Along this belt gold finds have been reported over a length of at least 12 miles from east to west. Some production of gold has come from the Richardson Lake area but the best known concentration is probably that of the Casey Summit property (1930's) or the New Jason as it was known later in the 1950's. A 150 ton mill was present on this property when the last closure took place in 1952. Mill heads were reported to be between 0.30 and 0.40 ounces of gold per ton.

GEOLOGY - BIRCH LAKE CLAIMS

The McIntyre property is located on a band of intermediate to basic volcanics which generally strike N53°W and dip vertically or steeply northward to a minimum of 65°. Within this band of volcanics is a zone of intermittent shearing approximately 600 to 700 feet in width. The shearing generally appears to be conformable to the flow contacts

GEOLOGY- BIRCH LAKE CLAIMS (continued)

but has been noted to cross them on local folds within the volcanics. All gold discoveries to date have occurred along the shears and the quartz veins appear to be controlled partly by the intensity of shearing, partly by fold structures and pillows in the volcanics and partly by the different competencies of the flows. Unfortunately, all efforts to extend the known gold-bearing veins in the past have been fruitless and further work does not appear to be warranted in this regard.

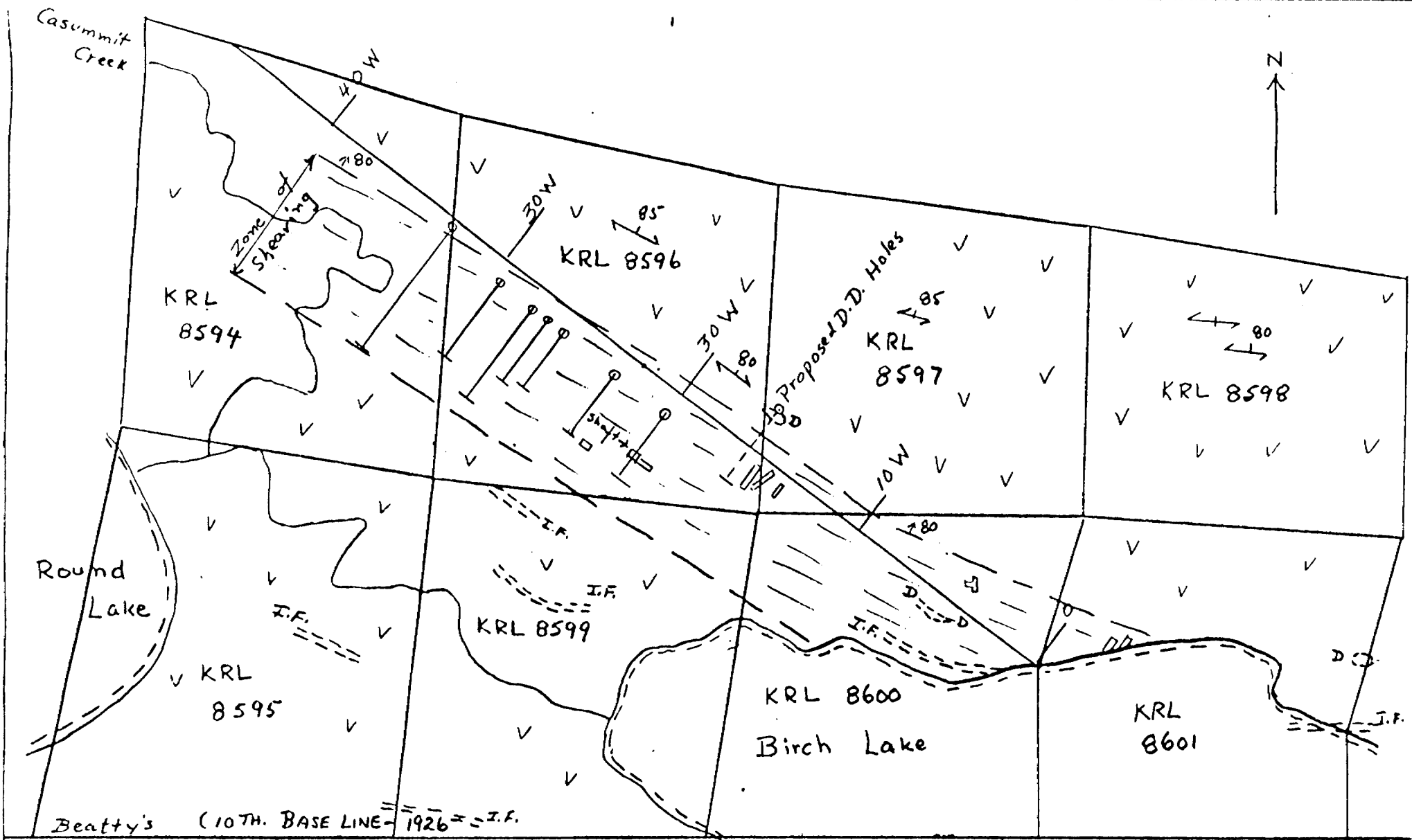
Although iron formation is present in several outcrops no gold values have been found and there is no suggestion it may be a host rock. In general the attitudes appear to conform to the enclosing volcanics.

Several outcrops of quartz-diorite were uncovered by prospecting in 1975. Although all of these show quartz-carbonate veins the most prominent veins are exposed in the outcrop at 16 + 22W, 1 + 82N where quartz-carbonate veins constitute up to 30% of the exposure in places. Some pyrite is present but surface samples have indicated negligible gold content. Exploratory diamond drilling is warranted to check the quartz-diorite for values on its own merits and to check the areas of shearing within and nearby this intrusive. For lack of exposure the contacts are assumed to be vertical but the true horizontal outline of this intrusive is unknown.

GEOLOGY - BIRCH LAKE CLAIMS (continued)

CONCLUSIONS

An interesting situation is considered to exist in which geological and structural conditions may combine to form an economic gold deposit.



Beatty's (10TH. BASE LINE - 1926 = I.F.)
Base Line

LEGEND

- D Diorite
- V Volcanics - Intermediate to Basic
- I.F. Iron Formation
- ◻ Diamond Drill Hole

CARMAC RESOURCES LTD.
BIRCH LAKE CLAIMS
GEOLOGY
Scale: 1" = 600 Feet APR 1983

RECOMMENDATIONS

Two diamond drill holes are proposed to investigate the conditions which exist in the area of the quartz-diorite outcrop at 16 + 22W, 1 +82 N. These holes should tentatively be drilled as follows:

B Q CORE

	<u>COLLAR</u>	<u>DIP</u>	<u>AZIMUTH</u>	<u>LENGTH</u>	<u>PURPOSE</u>
1.	16 + 25W 2 + 00N	-55°	143° (Grid S.)	750'	To explore quartz-veins in diorite and to check for veins within shears in vicinity.
2.	16 + 25W 2 + 00N	-80°	143° (Grid S.)	750'	To explore for quartz veins in depth within diorite and to check south contact area.

ESTIMATE COSTS OF DIAMOND DRILLING PROGRAM

Diamond drilling 1500 feet x \$25.00 per foot	=	\$37,500
Helicopter and fixed wing support 1500 x \$10.00	=	15,000
Overhead, assays, geological expenses 1500 x \$10=		15,000
		<hr/>
	TOTAL	<u>\$67,000</u>

Surface

Zone of Intermittent Shearing
with Quartz Veins
Trenches

Outcrop

DIP - 55°
LENGTH 750 Feet

DIP - 80°
LENGTH 750 Feet

Quartz
Diorite

BASE LINE

CARMAC RESOURCES LTD.
BIRCH LAKE CLAIMS
PROPOSED D.D.H.'S
VERTICAL SECTION
SCALE: 1" = 100 FEET APR. 1958

REFERENCES

1. McIntyre Mines Limited files.

2. Geology of the Shabumeni - Birch Lakes Area
by George D. Furze, Vol, XLII, Part VI, 1933,
Forty-second Annual Report of the Ontario Depart-
ment of Mines.

3. Northern Miner files.

Vancouver, B.C.
April 30, 1983

Respectfully Submitted,



W.H. Thorpe, B.Sc., P.Eng.

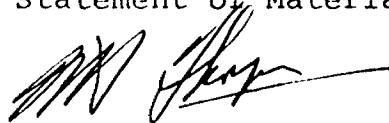


ENGINEER'S CERTIFICATE

I, WALTER H. THORPE, of 1379 Merklin Street, Suite 204, in the City of White Rock, British Columbia,

DO HEREBY CERTIFY:

1. That I am a Consulting Geologist with a business address as preceding in the City of White Rock, British Columbia.
2. That I am a graduate of the University of New Brunswick with a degree of B. Sc. in Geology.
3. That I have actively practiced my profession in mining and mineral exploration since graduation in 1951.
4. That I am a registered Professional Engineer in the Province of Ontario and am a member of the Canadian Society for Professional Engineers as well as a fellow of the Geological Association of Canada.
5. That this report is based on the writer's general and particular knowledge of the area, visits to the property and a review of available data.
6. That I have no interest either directly or indirectly in the property or securities of Carmac Resources Limited, nor do I expect to receive any.
7. That permission is hereby given to Carmac Resources Limited to reproduce this report with a Statement of Material Facts.



W.H. THORPE, B.Sc., P.Eng.

DATED at the City of White Rock,
Province of British Columbia.
This 30th day of April, 1983.

