

OM84-2-I-217

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52G15NE0003 52J02SE0089A1 QUEST LAKE

010

Geological and Prospectin Report
on the Sturgeon Lake Area
Properties, Patricia Mining Division
for
Copconda York Resources, Inc.

December 31, 1984
Toronto, Ontario

R. T. Chataway, Fellow, G.A.C.

R. T. Chataway



52G15NE0003 52J02SE0089A1 QUEST LAKE

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- Assay Certificates, Assayers (Ontario) limited.
- Geology map - Lake-of-Bays River Group
- Geology - VLF - Magnetics Compilation St. Anthony Group
- Geological Compilation - Princess Lake Group (in pocket)

FIGURE

- Location Map - Sturgeon Lake Area Properties 1a

INTRODUCTION

The writer evaluated three properties in the Sturgeon Lake area of North-western Ontario. Prospecting and rock-chip sampling were the methods of evaluation in determining the gold potential of each property. The work was completed in September and October prior to freeze-up.

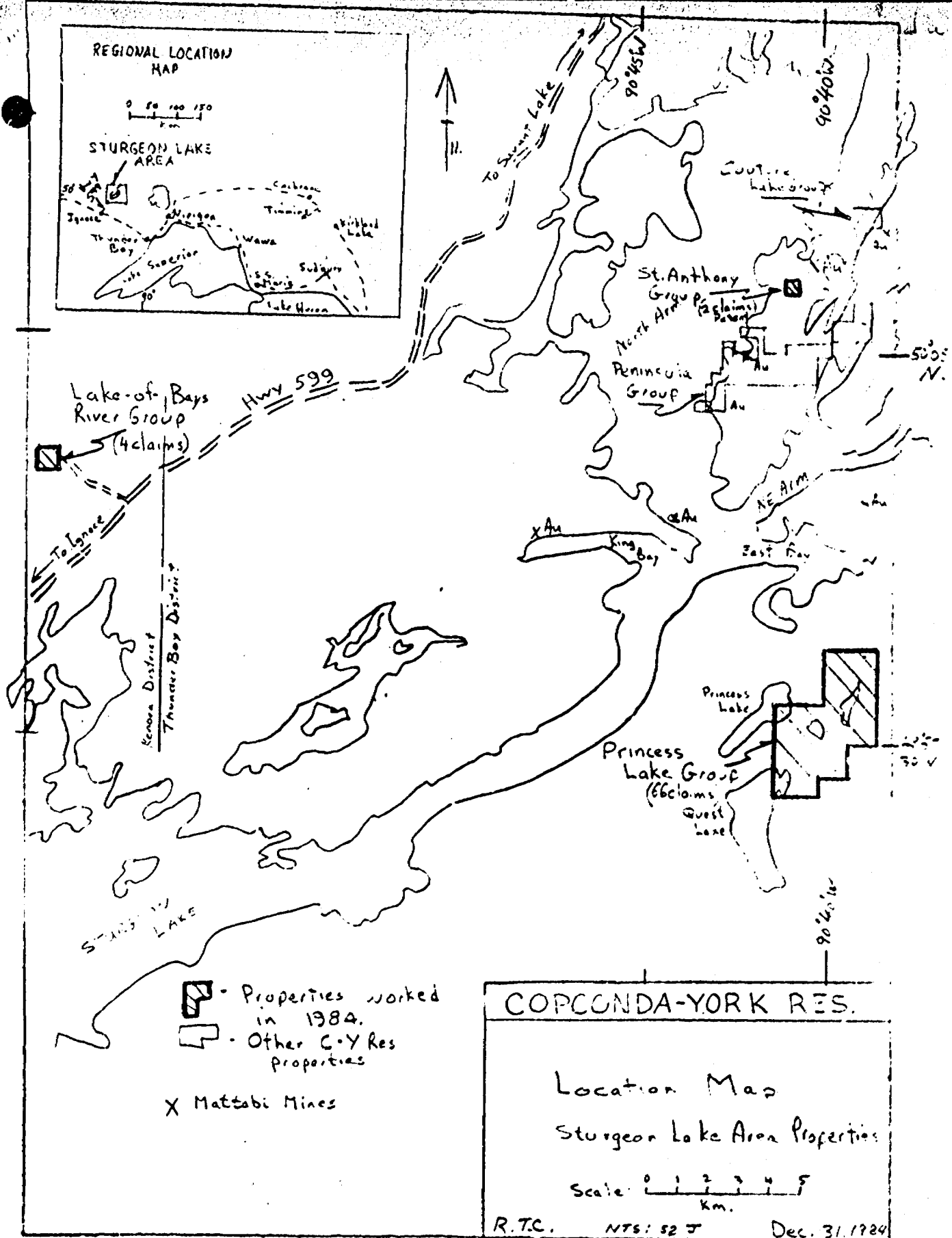
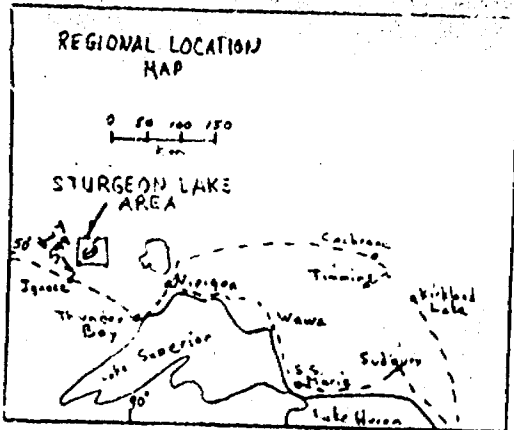
LOCATION AND ACCESS

All groups are situated in the Patricia Mining Division and are approximately 90 kilometers northeast of Ignace, and 200 kilometers northwest of Thunder Bay. Access to the general area is north on Highway 599 from the junction with the Trans-Canada Highway in Ignace.

The Lake-of-Bays River group is shown on the OMNR claim plan G-2061, area of Handcuff Lake. The claims are situated west of Rome Lake and can be reached via a bush road which leaves Highway 599 south of the Thunder Bay - Kenora District highway sign.

The St. Anthony Group is patent ground one kilometer southwest of the St. Anthony Gold Mines property. Access by boat is from wharves on the west side of the North Arm of Sturgeon Lake near Highway 599. The property lies 400 meters inland from Marie's Bay, located on the east side of the North Arm. The patent ground is shown on claim plan G-3140, Area of Squaw Lake.

The Princess Lake Group is shown on claim plan G-2556, Area of Quest Lake. The claims are approximately 20 kilometers northeast of Mattabi Mines. Access is best by float plane to Princess, Quest or the long narrow lake in the northeast part of the group.



OWNERSHIP AND STATUS

The Lake-of-Bays River group is owned 100% by Copconda-York Resources. On October 25, 1984 the 24 claims were allowed to lapse and have since been restaked in part as claims Pa770105 , Pa 770106, Pa 770107, Pa 816311.

The St. Anthony Group is optioned from A. Best of Savant Lake, Ontario. Annual tax and option payments are current as of December, 1984. The group consists of 2 contiguous patent claims, TB 10627 and TB 20189.

The Princess Lake Group consists of 66 contiguous unpatented mineral claims numbered:

Pa 440465 - Pa 440472, inclusive
Pa 640088 - Pa 640095, inclusive
Pa 640100 - Pa 640103, inclusive
Pa 640184 - Pa 640199, inclusive
Pa 649306 - Pa 649335, inclusive

The group is under option from A. Best and J. Hodge. Option payments and assessment requirements are current as of December, 1984. Claims Pa 440465 - Pa 440472, inclusive, will come due on March 18, 1986 and the remaining 58 claims on February 9, 1986.

GENERAL GEOLOGY

The Copconda - York properties lie within the Sturgeon Lake greenstone belt, an early Precambrian metavolcanic-metasedimentary assemblage. The rocks consist of a folded series of felsic, intermediate and mafic metavolcanics, pyroclastics and metasediments that have been regionally metamorphosed to the greenschist facies. Bodies of metagabbro-metadiorite locally intrude the metavolcanics and metasediments. The entire belt is surrounded by large,

granitic batholithic masses. Younger stocks or plutons of granite intrude the metavolcanic-metasedimentary belt of rocks and the enclosing granitic batholithic masses.

DETAILED GEOLOGY

The Lake-of-Bays River Group is underlain by mafic metavolcanics which trend east-west to southeast-northwest. The granite-volcanic contact associated with the King Bay, Sturgeon Lake area deposits lies to the north of the property. However, on the southern part of the claims is a coarse grained quartz-feldspar porphyry(?) intruding the volcanics. It is possible that this porphyry (?) is a crystallized residual of a magmatic liquid. The crystalline phenocrysts (?) range in size from several centimeters to 10 centimeters, with an average of 7 centimeters. They are subrounded to subangular in shape and make up 80-90% by volume. Their general appearance is of flattened ovoids with a common direction of their long axis. Some of the phenocrysts exhibit micro-scale fracturing. The matrix of this rock is fine to medium grained crystalline quartz and feldspar that varies in colour from greyish-white to greyish-green.

The mafic metavolcanics are mainly porphyritic or pillow basalts. The porphyritic metavolcanics have 10% hornblende and/or feldspar phenocrysts, are dark green and medium grained. Calcite-filled vugs and strong epidote mineralization are common. The pillow basalts exhibit amygdaloidal textures. Top determinations indicate the unit is overturned, with dips to the north and pillow tops to the south.

Interflow sediments have been altered to limonite and hematite shear zones with quartz-carbonate boundinages. Minor pyrite occurs in the sediments. A minor fold structure with a "Z" sense and a 50° plunge to the northwest parallels other shear zones

and possibly the local strike of the rocks. A hornblende-rich medium grained amphibolite strikes across the claim group from southeast of the large lake to the northwest.

The St. Anthony group has limited rock exposures along the east boundary. The main rock type is a intermediate to mafic metavolcanic flow which outcrops as a north-south trending ridge. The foliation in the rock is enhanced by the sericitic alteration. Felsic intrusive bodies cut the mafic volcanics and are probably related to the batholith which lies to the west (North Arm Pluton).

The Princess Lake group is underlain mainly by a metavolcanic-metasedimentary sequence which includes a very wide iron formation. Metagabbro and granite intrusives are less abundant in outcrop but geological coverage of the claim group is incomplete. The emphasis of the recent work was centred around the sulphide-rich iron formation. The mafic metavolcanics include chloritized andesites, pillowed basalts and amphibolites. The intermediate to felsic metavolcanics range from intermediate to mafic-rich tuffaceous units to a rhyodacite fragmental to a siliceous finely laminated rhyolite tuff.

The metasedimentary unit includes fine grained argillite, argillite with a tuffaceous component and a metagreywacke. The sediments are often chloritic or pyritic.

The iron formation occurs in two separate bands within the intermediate volcanics. However, due to the lack of outcrop to fully define the iron formation unit, it is thought by the writer that metasediments are the host rock of the iron formations not the metavolcanics. Numerous facies were identified in the field including sulphide, oxide, chert and silicate. The sulphide facies is pyrite and pyrrhotite in disseminated to massive form. Generally the oxide or magnetite-rich facies is near the east boundary of each unit and contains fine disseminated magnetite and some pyrite and

pyrrhotite and chlorite and/or biotite. Cherty sediments and banded cherty rhyolite were best seen at the south end of the unit. The silicate-rich facies are chloritic argillaceous sediments with minor pyrite content.

The granite intrusive lies to the east of the claim block and intrudes the metavolcanic-metasedimentary sequence as syenite dykes and pink granodiorite intrusives. The metagabbro intrusive ranges from gabbro to ultramafic composition based on initial field studies. This intrusive is located in the southwest part of the claim group.

DISCUSSION OF RESULTS

A program of rock sampling was carried out on each property. The samples were assayed by Assayers (Ontario) Limited, Toronto, Ontario. Certificates of analysis are appended and the results have been plotted on the property maps.

From the Lake-of-Bays River group, two rock types returned anomalous values in gold. Shear zones associated with interflow sediments has values from 11 to 185 ppb with an average of 85 ppb Au for 6 samples. The porphyry (?) unit had a range of values from 5 to 1509 ppb Au with a average of 402 ppb for 7 samples. One very encouraging result was sample B-9, a 5.0 foot chip with a value of 1009 ppb Au. Four other samples had an average of 15 ppb Au, these were taken as geological representative samples.

The porphyry unit can be traced from the east claim boundary for 500 feet west, and it has a width of up to 100 feet. The zone is open in all directions.

The shear zones associated with interflow sediments are more difficult to trace as they are narrow.

Two samples of five taken from the St. Anthony group were chemically anomalous. Sample 4-1-1 is a feldspar-quartz porphyry

intrusive in sericitic mafic metavolcanics, it assayed 31 ppb Au. Sample 4-1-2 was from the same outcrop, it had a value of 113 ppb Au. These samples are located near the projected favourable granite-metavolcanic contact which hosts the St. Anthony Gold Mines deposit located one kilometer to the northeast.

An old pit near Line 20+00 S should be cleaned out in order to get fresh samples. Sample 4-1-5 from the pit was assayed and gave a value of less than 5 ppb Au.

The Princess Lake group has the potential to host a significant gold deposit. At least 2 miles of iron formation was prospected and sampled at irregular intervals. Lack of sufficient outcrop prevented sampling the width of the zone at any one location.

The preliminary Geological Compilation map appended to this report represents an interpretation by the writer based on field mapping and a new interpretation of the previous magnetometer and VLF surveys. At least 2 bands of iron formation within a zone 1500 feet wide exists. The actual widths cannot be defined further until systematic trenching and mapping is complete. To date, four general areas along the 2 mile strike length have been partially sampled, these are Line 36-40 N @ 42 E, Line 20-24 N @ 24 E, Line 28-32 S @ 22-26 E and Line 40 S @ 14-18 E.

Rock sampling of these areas gave gold values of up to 196 ppb Au, silver values of less than 0.1 to 1.8 ppm, copper values to 203 ppm, lead to 71 ppm and zinc to 455 ppm. Outcrops were generally small and fresh surfaces were difficult to assay.

The mapping has indicated there is more volcanic rocks than was recorded on the published map by N. F. Trowell, 1981, Sturgeon Narrows, Ontario Geological Survey Map 2457. This is significant in evaluating the area for gold in an iron formation host or a massive sulphide, base metal deposit.

CONCLUSIONS AND RECOMMENDATIONS

The Lake-of-Bays River group has a geological unit which carries gold values up to 1509 ppb.

The limited, amount of work done to date has been very encouraging and follow-up work is definitely warranted.

A program of magnetics, mapping, trenching and sampling is required to further evaluate the potential for gold in the porphyry unit and the immediate contact area.

The St. Anthony group is well located next to the St. Anthony gold Mine property and along strike with the favourable horizon.

A drill program is recommended to test the unexposed geological contact between the volcanics and the North Arm Pluton.

The Princess Lake group has the potential for a gold in iron formation deposit. Favourable areas along the iron formation must be delineated before drilling can commence. Magnetics and VLF surveys at 200 foot centres between the existing lines is necessary and will facilitate a re-interpretation of the magnetic and E.M. anomalies. Folded or faulted areas which interrupt the linear nature of the iron formation are good targets to begin more detailed trenching and mapping.

Only in one area were follow-up ground surveys and drilling noted while prospecting the 2 mile strike of the iron formation which had been located by earlier airborne surveys. This area has a great deal of potential for gold in an iron formation host rock.

REFERENCES

- Gledhill, T. R., 1983: Report on Geophysical Surveys, Princess Lake Group; Report for Copconda-York Resources Inc.
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- " " 1984: Geochemical Humus Profiles, St. Anthony Peninsula Group, Sturgeon Lake Area, Ont.; Report for Copconda-York Resources Inc.
- " " 1984: Summary Report, Geochemistry and Drilling Review, Princess Lake Group, Sturgeon Lake, Ont.; Report for Copconda-York Resources Inc.
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- Ont. Dept. of Lands and Forests, 1961: Sturgeon Lake, Ont., Kenora and Thunder Bay Districts; Geophysics Paper 1118, Sheet 52-J-2.
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- " " 1972: Quest Lake-Sturgeon Lake Area (Eastern Part), District of Thunder Bay; Ont. Division of Mines, Preliminary Map P 762, Geological Series.
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- " " 1981: North Arm of Sturgeon Lake; Ont. Geological Survey Map 2456, Precambrian Geology Series.
- " " 1981: Sturgeon Narrows; Ont. Geological Survey Map 2457, Precambrian Geology Series.
- Trowell, N. F., Sage, R. P., Wright, W., Chamois, P., and Higgins, C., 1979: Sturgeon Narrows and Squaw Lake Alkalic Rock Complexes, District of Thunder Bay; Ont. Geological Survey, Preliminary Map P 2223, Geological Series.

QUALIFICATION

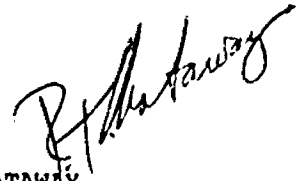
I, R.T.Chataway am a graduate of the UNIVERSITY OF BRITISH COLUMBIA with a Bachelor of Science degree in geology (1970).

I have practiced in my profession for 14 years.

I did the work as reported in this report.

I am a FELLOW of the GEOLOGICAL ASSOCIATION OF CANADA.

I reside at 2796 Quill Crescent, Mississauga, Ontario.



R.T.CHATAWAY
F.G.A.C.

APPENDIX

ASSAY CERTIFICATES, ASSAYERS ONTARIO LIMITED.

Lake-of-Bays River Group

Series 28-
Series 29-
Series B-

Princess Lake Group

Series PL-

St. Anthony Group

497 Coveney Showing

Series 4-

Lake-of-Bays River Group Geology Map

St. Anthony Group Geology-VLF-Magnetics Compilation

Princess Lake Group Geological Compilation



ASSAYERS (ONTARIO) LIMITED

33 CHAUNCEY AVENUE TORONTO, ONTARIO M8Z 2Z2 - TELEPHONE (416) 239-3527

Certificate of Analysis

Certificate No. MI-727/ #3502

Date: October 15, 1984

Received _____ 7 Samples of Rock

Submitted by Copconda-York Resources Inc. Att'n: Mr. T. Patterson
c.c. Mr. R.T. Chatway

Sample No.	Au ppb
28-1-1	164
2-1	185
28-3-2	89
29-1-1	11
1-2	43
1-4	60
29-1-5	46

ASSAYERS (ONTARIO) LIMITED

Per _____

J. van Engelen
J. van Engelen Mgr.



ASSAYERS (ONTARIO) LIMITED

33 CHAUNCEY AVENUE TORONTO, ONTARIO M8Z 2Z2 - TELEPHONE (416) 239-3527

Certificate of Analysis

Certificate No. MI-754 / H3574 Date November 6, 1984
Received 10 Samples of Rock
Submitted by Copconda-York Resources Inc. Att'n: Mr. I. Patterson

Sample No.	Au ppb
B-1	13
-2	<5
-3	10
-4	<5
-5	93
-6	69
-7	38
-8	1509
-9	1006
B-10	57

ASSAYERS (ONTARIO) LIMITED

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J. van Engelen

ANALYTICAL CHEMISTS · ASSAYING · CONSULTING · ORE DRESSING · REPRESENTATION



ASSAYERS (ONTARIO) LIMITED

33 CHAUNCEY AVENUE TORONTO, ONTARIO M8Z 2Z2 · TELEPHONE (416) 239-3527

Certificate of Analysis

Certificate No. MI-739 /#3543

Date: October 30, 1984

Received _____ 24 Samples of Rock

Submitted by Copsonda-York Resources Inc. Att'ns: Mr. Tom Patterson
Mr. Ernie Gallo
Mr. R. Chateway

Sample No.	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
PL 001	134				
002	196				
004	55				
005	31				
008	20	.2	50	25	22
009	48	.6	28	25	16
010	86	.2	24	23	15
011	93	.7	121	35	36
PL 012	62	<.1	44	33	57
013	128	1.4	31	48	31
014	82	1.0	50	71	92
015	<5	1.1	208	62	56

ASSAYERS (ONTARIO) LIMITED

Per _____

J. van Engelen
J. van Engelen



ASSAYERS (ONTARIO) LIMITED

33 CHAUNCEY AVENUE TORONTO, ONTARIO M8Z 2Z2 · TELEPHONE (416) 239-3527

Certificate of Analysis

Certificate No. MI-739 / #3543 Date October 30, 1984

Received 24 Samples of Rock

Submitted by Copeonda-York Resources Inc. Att'n: Mr. Tom Patterson
Mr. Ernie Gallo
Mr. R. Chataway

Sample No.	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
PL 016	24	.9	124	51	45
017	41	1.5	192	82	75
018	20	.4	70	33	22
019	139	1.7	85	34	25
020	37	.2	28	20	45
021	75	.6	27	26	66
022	108	<.1	65	20	80
023	117	1.6	166	43	339
024	62	1.8	70	40	43
025	137	.5	203	28	455
026	96	.5	175	30	373
PL 027	141	<.1	32	18	62

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ASSAYERS (ONTARIO) LIMITED

33 CHAUNCEY AVENUE TORONTO, ONTARIO M8Z 2Z2 TELEPHONE (416) 239-3527

Certificate of Analysis

Certificate No. MI-751 /#3591 Date: November 9, 1984
Received 21 Samples of Rocks
Submitted by Copconda-York Resources Inc. Att'n: Mr. Tom Patterson

Sample No.	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
PL 028	69	.4	65	12	84
029	76	<.1	155	15	45
030	<5	.6	51	10	18
031	7	.8	89	8	27
032	30	.1	118	10	28
033	17	.6	31	7	37
034	<5	<.1	87	12	50
036	20	.7	73	16	55
037	70	.1	52	15	41
038	130	<.1	27	12	21
041	41	.2	63	15	54
042	82	<.1	26	25	26
044	7	<.1	62	20	30
PL 045	123	<.1	41	17	32
497	27				
4-1-1	31				
4-1-2	113				
4-1-3	<5				
4-1-4	<5				
4-1-5	<5				
3-1-1	<5				

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Per


J. van Engelen Mgr.



ASSAYERS (ONTARIO) LIMITED

33 CHAUNCEY AVENUE TORONTO, ONTARIO M8Z 2Z2 · TELEPHONE (416) 239-3527

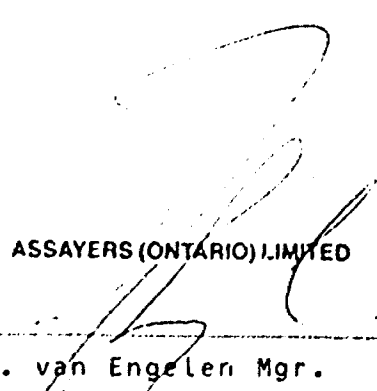
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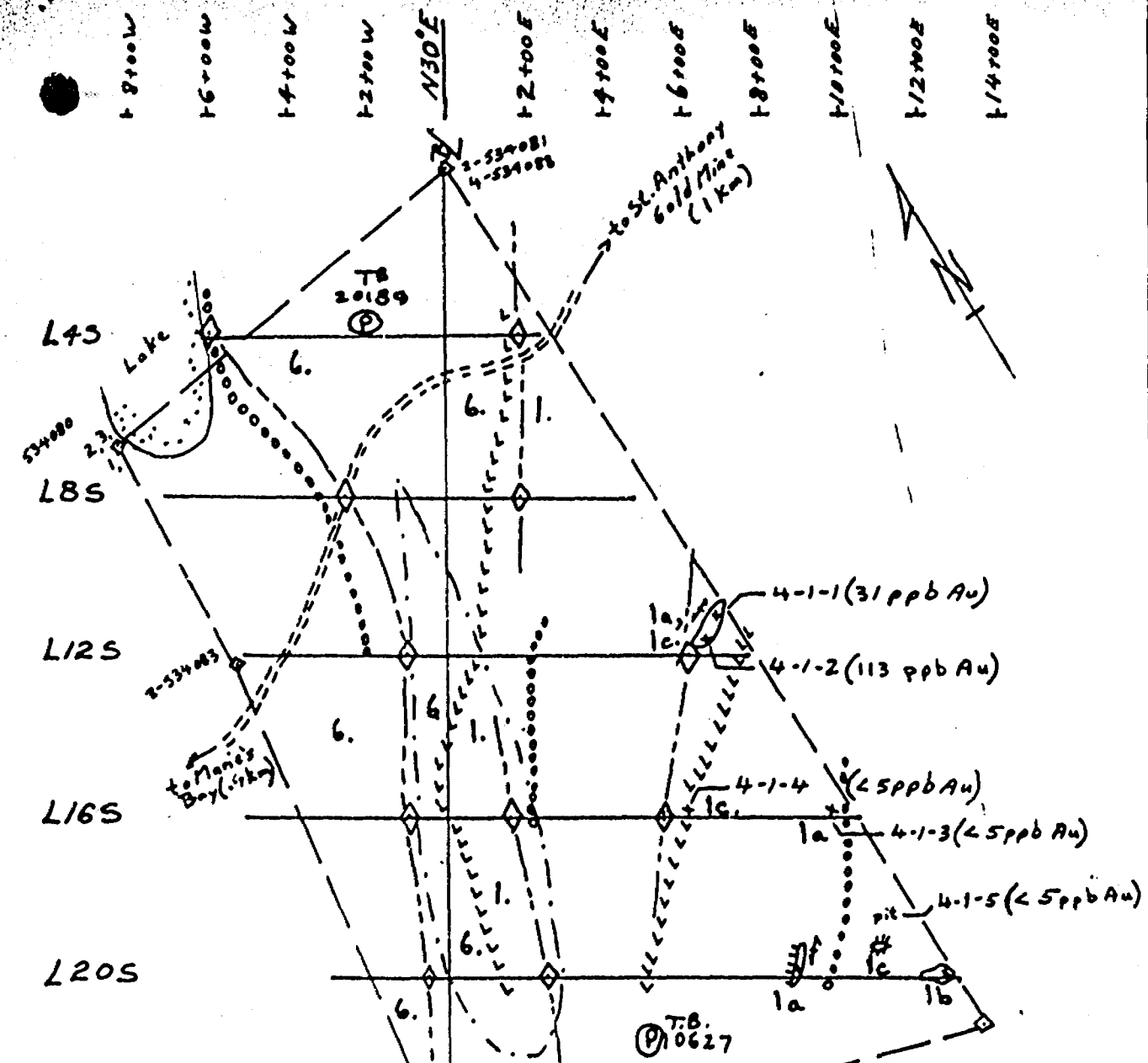
Certificate No. MI-762 /#3591 Date: November 6, 1984
Received 3 Samples of Soil & Humus
Submitted by Copconda - York Resources Inc. Att'n: Mr. R. Chataway

Sample No.	Au ppb	Cu ppm	Pb ppm	Zn ppm
PL H-001	<5			
PL S 001	11	27	36	32
PL S 002	<5	74	54	34

ASSAYERS (ONTARIO) LIMITED

Per


J. van Engelen Mgr.



LEGEND

- 1.** mafic metavolcanics
 - 1a, fine grained andesite
 - 1b, sericitic alteration
 - 1c felsic intrusive, quartz-feldspar porphyry, (with mafic inclusions).

6. granitic intrusive

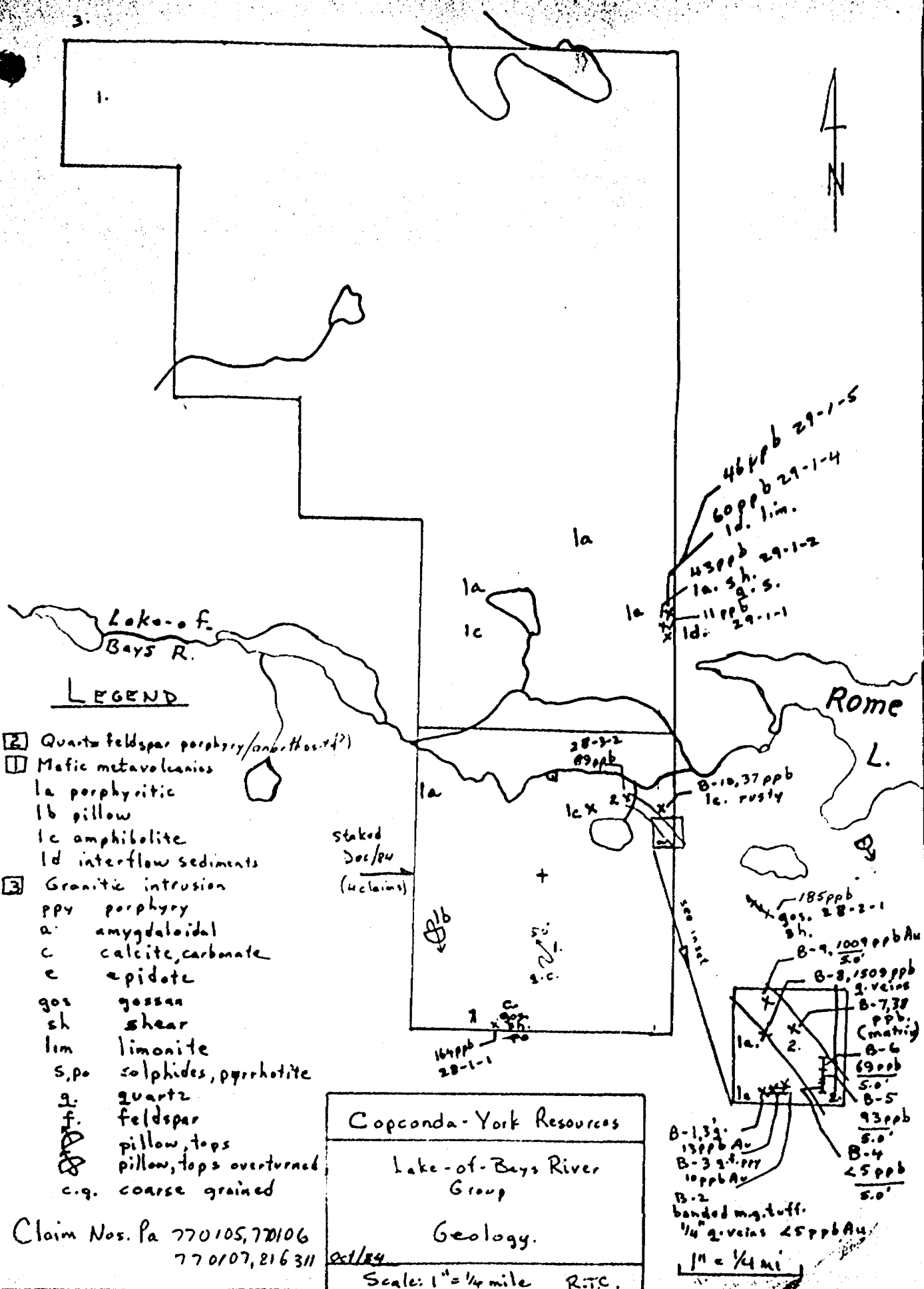
- VLF-EM trend
- magnetic high trend
- magnetic low trend
- agricultural land area
- outcrop, sample location

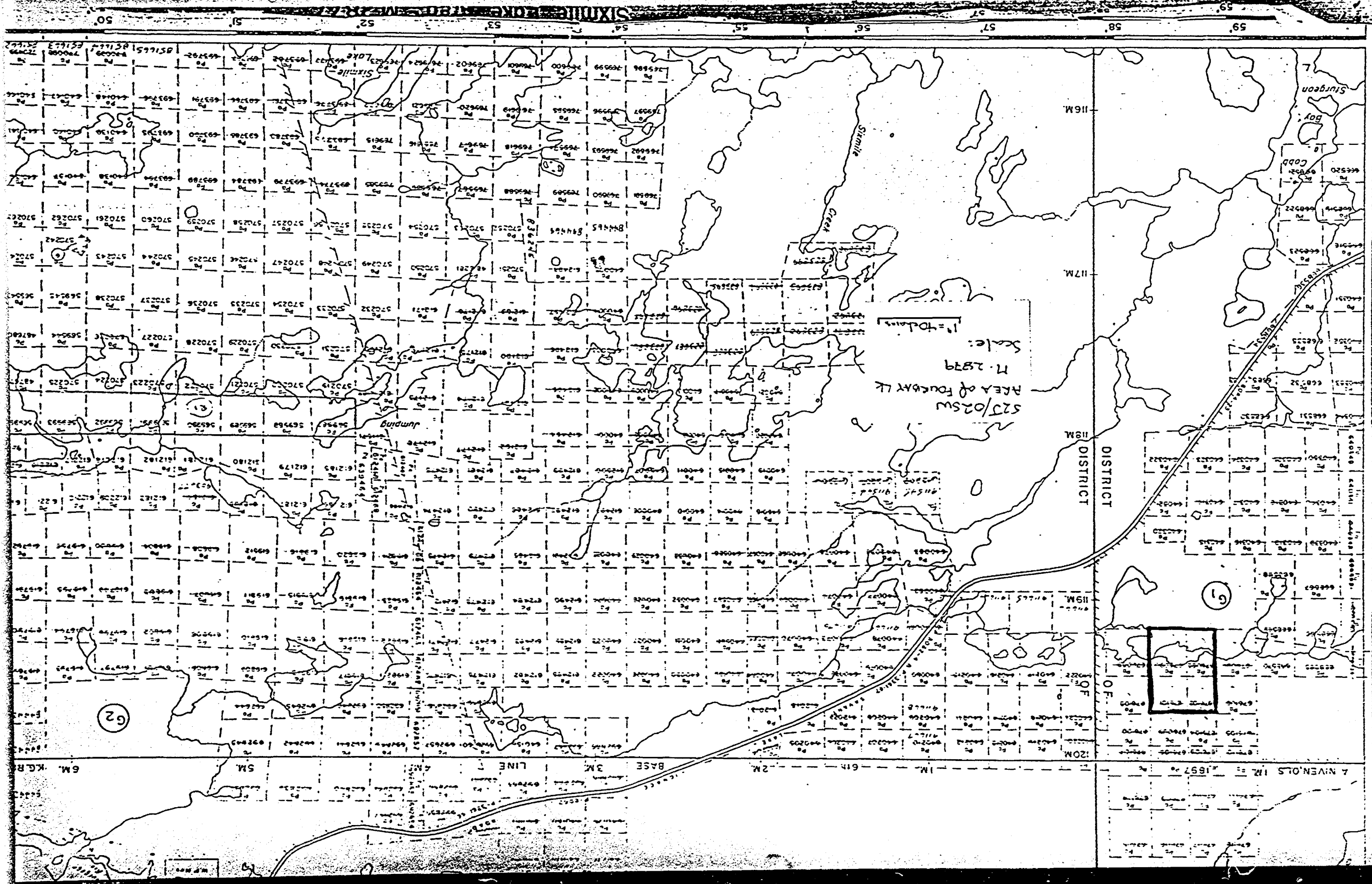
- schistosity, vertical
- pit
- cliff
- road

1" = 400'

R. Chataway

Copconda-York Resources
<u>ST. Anthony Group</u>
Geology - VLF-Mag Compilation
Scale: 1 inch to 400 feet Date: October, 1984 By: R. T. Chataway.





HANDICAP LK AREA N. 3296

Scale: 1:2879
AREA OF FOURBAY LK
525/025W

DISTRICT
DISTRICT

7 NIVENS LK IN. = 1897

6 M. K.G.R.

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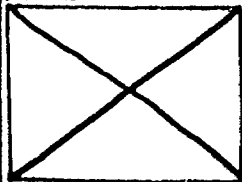
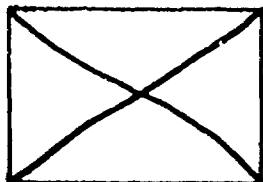
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SEE ACCOMPANYING
MAP(S) IDENTIFIED AS

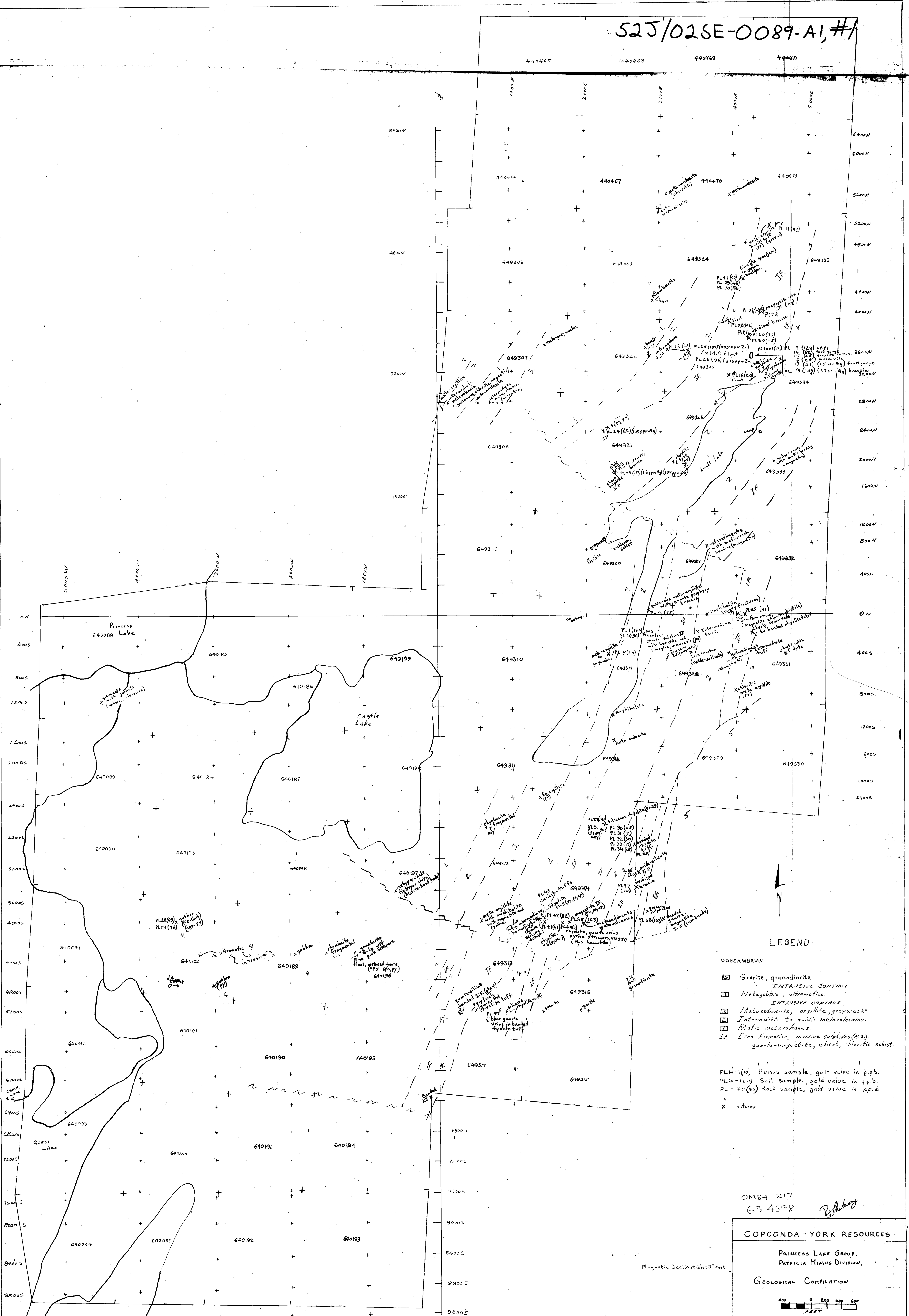
52J/02SE-0089-A## /

LOCATED IN THE MAP
CHANNEL IN THE
FOLLOWING SEQUENCE

(X)

52J/02SE-0089-A1, #1



- LEGEND**
- PRECAMBRIAN**
- ☐ Granite, granodiorite.
 - INTRUSIVE CONTACT
 - ☐ Metagabbro, ultramafics.
 - INTRUSIVE CONTACT
 - ☐ Metasediments, argillite, greywacke.
 - ☐ Intermediate to acidic metavolcanics.
 - ☐ Metic metavolcanics.
 - IF Iron formation, massive sulphides (M.S.), quartz-magnetite, chert, chloritic schist.
- PL-1(10) Humus sample, gold value in p.p.b.
 PLS-1(15) Soil sample, gold value in p.p.b.
 PL-4(35) Rock sample, gold value in p.p.b.
- X outcrop

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COPCONDA-YORK RESOURCES

PRINCESS LAKE GROUP,
PATRICIA MINING DIVISION,

GEOLOGICAL COMPILATION

Scale: 1 inch = 400 feet
 Work By: R. Chataway
 Date: October, 1984
 Claim Map: Quest Lake
 M.S. 52-6-J 6-2556

52J/02SE-0089-A1, #1