

# GM 57729

QUARTERLY REPORT - JUNE 1978, REPORT 7185-13, OTISH MOUNTAINS WEST

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Énergie et Ressources  
naturelles

Québec 

OTISH MOUNTAINS WEST

PROJECT NO. 71-85

Report No. 7185-13

QUARTERLY REPORT - JUNE 1978

MRN-GÉOINFORMATION 2000

GM 57729

Prepared by:

Charles Jenkins  
Wolf Gehrish

## SUMMARY

To date four diamond drill holes have been completed on the Beaver Lake Area and 269 meters drilled. A 60 cm weakly radioactive zone was encountered on BL 24. In the Twenty-Mile Area, one diamond drillhole has been completed and 85 meters drilled. A brecciated and hematized mineralized zone with a width of 0.75m was encountered at a depth 35 meters along the axis of the I.P. anomalies.

A total of 81 airborne spectrometer anomalies were detected and 3097 line km flown during the helicopter (GAM II system) survey.

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TABLE A - Personnel Distribution

Diamond Drilling Summary - Beaver Lake  
Diamond Drilling Summary - Lorenz Gully

Illustrations enclosed in Report:

Map No. 1 - Location Map

Map No. 2 - Land Status Map - Lorenz Gully

Figure 1 - PROFILE 1 (BL 22 & BL 23)

Figure 2 - PROFILE 2 (BL 24 & BL 25)

APPENDIX A - Geophysical Report - Twenty-Mile Area

APPENDIX B - Drilling Program - Beaver Lake and Twenty-Mile Area

1. INTRODUCTION

1.1 AREA OF INVESTIGATION

The Beaver-Zoran /Otish West Area is located in the western section of the Otish basin along the Archean/Aphebian unconformity (Map No.1).

1.2 PURPOSE OF INVESTIGATION

The objective of the summer program is to investigate the tectonically controlled uranium mineralization in the Beaver Lake and Twenty-Mile Area and to evaluate the area between the two known mineral occurrences.

1.3 TIME OF INVESTIGATION

June 10 to June 30, 1978

1.4 PERSONNEL

R. Lambert	Chief Geologist
C. Jenkins	Acting Project Geologist
W. Gehrisch	Project Geologist
M. Leppin	Geophysicist
K. Hopewell	Field Foreman
S. Winter	Geologist
Y. Gariepy	Senior Assistant
J. Hardy	" "
P. Stewart	" "
F. Sivilla	Technician
B. Leppin	"
R. Fortin	"
G. Brameld	Senior Assistant
S. Brameld	Jr. Assistant
D. Sidaway	Jr. Assistant
C. Hébrard	Jr. Assistant
A. Loon	Prospector
S. Matoush	Prospector
J. Coon	Prospector
T. Rabbitskin	Prospector
K. Aikin	Cook
D. Hopewell	Camp Handyman

See also TABLE A.

TABLE A

PROJECT: 71-85

PERSONNEL DISTRIBUTION

MONTH: JUNE 1978

NAME	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
C. Jenkins	---Administration, Supervision, Logistics, Mapping-----																													
W. Gehrisch	-----Drilling Beaver Lake, Lorenz Gully-----																													
M. Leppin	-----Airborne Surv.--																													
K. Hopewell	-----Camp Mob.-----																													
S. Winter	-----Geological Mapping-----																													
Y. Gariepy	-----Anomaly follow-up-----																													
J. Hardy	-----Geochemistry-----																													
P. Stewart	-----Drilling Lorenz Gully-----																													
B. Leppin	-----Geophysics-----																													
F. Sivilla	-----Drilling Lorenz Gully-----																													
R. Fortin	-----Drilling Beaver Lake-----																													
G. Brameld	-----Prospecting-----																													
J. Kaylor	-----Airborne Survey.--																													
D. Sidaway	-----Geological mapping-----																													
C. Hébrard	-----Geochemistry-----																													
S. Brameld	-----Prospecting-----																													
A. Loon	-----Prospecting-----																													



1.5 INSTRUMENTS, VEHICLES USED

1.5.1 Instruments

1 Apex max/min II EM Unit  
1 Scintrex MP-2 Proton Magnetometer  
15 Alphameters  
15 SPP-2 Scintillometers  
2 Mount Sopris Downhole Probes  
1 Sokkisha Automatic B-4 Level  
1 Scintrex GAM I Spectrometers

1.5.2 Vehicles

1.5.2.1 Trucks

UEM: Two GM Surburbans

The vehicles were used to transport personnel and equipment from Montreal to Chibougamau and groceries from Chibougamau to Rivière Temiscamie.

1.5.2.2 Aircraft

1. Fixed wing aircrafts were used for the mobilization of the main campsite at Simon Lake.
2. Rotary wing aircrafts were used to transport D.D. equipment from Simon Lake to Beaver Lake and to transport UEM personnel into the field area.

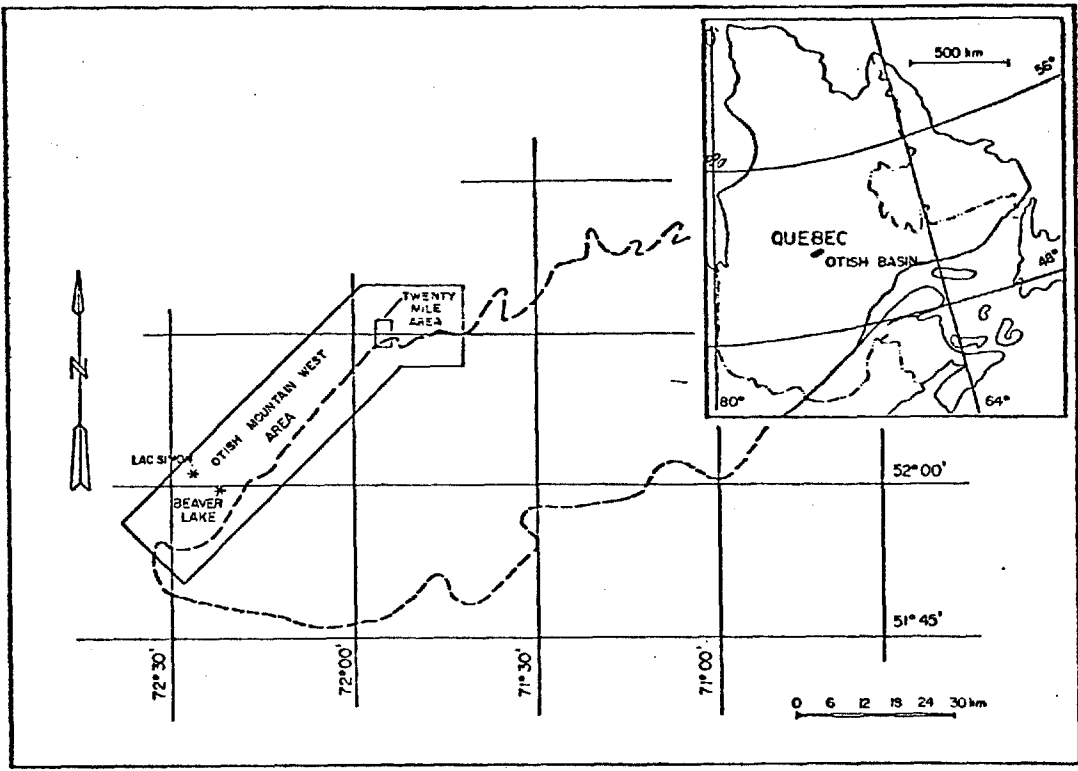
1.5.2.3 Other Vehicles

1 Mirage 14-foot rubber boat with 15 HP Johnson motor plus 3 canoes are used in the field areas.

2. GENERAL INFORMATION

2.1 LOCALITY

Beaver-Zoran/Otish Mountains West Area is located along Archean/Aphebian unconformity along the northwestern rim of the Otish Basin.  
(See Map No. 1)



URANERZ EXPLORATION AND MINING LIMITED

OTISH MOUNTAINS WEST 71-85

LOCATION MAP  
 QUARTERLY REPORT, JUNE 1978

COMP.: C.J.	DATE: JUNE/78	REP./RAP. No.: 71-85-13	MAP/CARTE No.: 1
DRAWN/DESS: J.B.H.	DATE: JUNE/78		REPORT No.:
REVISION:		SCALE: ECH.:	PROJ. No.: 71-85
T.C. TO BONN:	REF.:		FILE DOSS: M05-113

2.2 COMMUNICATIONS AND ACCESS

2.2.1 Communications

Radio - CH-25 single side band radio transceivers, frequencies 4050 kc/s, 5391 kc/s, 5057 kc/s, 7418 kc/s, 4797 kc/s, 4982 kc/s.

Radio communications are maintained with Fecteau Air Services on 4050 kc/s and Direct Air on 5057 kc/s. With UEM Montreal office via Bell Canada radio-telephone network on 5391 and 7419 kc/s. Communication between projects are maintained on 4797 and 4982 kc/s.

2.2.2 Access

During the summer months, the area is accessible by float-equipped aircraft from Temiscamie River airbase.

2.3 TOPOGRAPHY

The Tichegami River area is dominated by the Tichegami Mountains which form a plateau-like block of rounded hills. The elevation varies between 700 to 900 meters above sea level.

2.4 CLIMATE

The climate in the region is classified as subarctic.

2.5 VEGETATION

Black spruce (*Picea mariana*) and Jack Pine (*Pinus banksiana*) with a few groves of white Birch (*Betula papyrifera*) are the dominant tree types.

2.6 POPULATION AND LAND USE

No settlements or commercial land exploitation occur within the area of investigation.

2.7 WATER RESOURCES

The numerous lakes and rivers provide an abundant supply of water. The Tichegami River area is part of the James Bay drainage system.

2.8 MAGNETIC DEVIATION

The magnetic deviation is in the order of 23°30'W.

3. PREVIOUS SURVEYS AND ACTIVITIES

3.1 TOPOGRAPHIC MAPPING

Area	N.T.S.	Name	Scale	Photo No.	Scale
Tiche- gami River	32P/16	Lac Hippocampe	1:50,000	A15475	1:60,000
	32P/15	Lac de la Recherche	1:50,000	29-33	
	33A/1	Lac Barou	1:50,000	A15654 21-27	1:58,000
				A15678 25-31 9-11	1:52,000
			A15588 7-13	1:58,000	

3.2 GEOLOGICAL MAPPING

Otish Basin has been mapped by the Ministère des Richesses Naturelles. The geological maps have proven to be fairly reliable.

Area	Geological Report	Map Scale	Author
Tichegami River	Tichegami Area	1:63,360	E. Chown
	Region du Lac Cadieux	1:100,000	M. HOCQ

3.3 GEOPHYSICAL SURVEYS AND ACTIVITIES

The area is covered by the following aeromagnetic maps at a scale of 1:250,000: 7111G, 7112G.

The following competitor companies have been exploring for uranium

in the Otish Basin this summer.

- 1) Soquem/Hydro-Québec/Gulf Minerals
- 2) Pancontinental and James Bay J.V.

4. TENURE POSSIBILITIES

For tenure possibilities reference is made to "The Mining Act of Quebec".

- 1. A Prospector's licence must be obtained before staking (Section 13, 14).
- 2. Size of Claim: 40 acres or 16 ha. (Section 33).
- 3. Validity of Claims: South of lat. 52nd: 1 year, north of lat. 52nd: 2 years (Section 46).
- 4. Assessment Work: (Section 76)  
 South of 52nd lat: \$2 for first year per acre, \$4 for each subsequent year per acre. North of 52nd lat: \$6 for the first 2 years per acre, \$4 for each subsequent year per acre.

The staking fee is \$2 per claim(\$0.05 per acre) and annual rent fees are \$0.25/acre.

4.1 MINERAL CLAIMS

Twenty-Mile Area Claim Block:

In a decision dated May 11, 1978, the Minister of Natural Resources of Quebec has decided to annul the 48 claims staked by Ernest Schmidt in July and August 1978 in township 2335, numbered 367748 to 367756 claims 1 to 5 and 367757 claims 1 to 3.

The Minister has also decided to accept the staking out of 60 claims by Paul Martin and Gilles Perrier for the account of Uranerz, which cover the area of 48 claims annulled. These new claims now in effect are numbered 368703 to 368714 incl. claims 1 to 5. (See Map No. 2).

The above is in accord with our request to the Minister dated March 16, 1978 and we now have better protection for our rights and interest in this area.

Name:	20-Mile Area
Number of Claims:	60
Longitude:	71°55'W (Approx.)
Latitude:	52°13'30"N (Approx.)
N.T.S.:	23D
Area:	2400 Acres

Mining District: Abitibi Est (Territoire de Mistassini)  
 Staked by: Paul Martin & Gilles Perrier  
 Staked on: 23 February 1978 to 3 March 1978  
 Date of Transfer: 13 March 1978  
 UEM Interest: 33%  
 Partners: J.B.D.C. 44 2/3%  
           CANICO 22 1/3%  
 Operator: UEM  
 Assessment Work Required: 1978/79 \$14,400  
 Rent: 1980 \$ 600  
 Application for Development licence due on: To be determined.

20-Mile Area

<u>Claim No.</u>	<u>Township</u>	<u>Staked on</u>
368703 (1-4)	2335	23-02-78
(5)	2335	27-02-78
368704 (1-4)	2335	24-02-78
(5)	2335	26-02-78
368705 (1-3)	2335	25-02-78
(4-5)	2335	26-02-78
368706 (1-3)	2335	27-02-78
(4-5)	2335	28-02-78
368707 (1-2)	2335	28-02-78
(3-5)	2335	01-03-78
368708 (1-3)	2335	02-03-78
(4-5)	2335	03-03-78
368709 (1-2)	2335	27-02-78
(3-4)	2335	28-02-78
(5)	2335	01-03-78
368710 (1-2)	2335	27-02-78
(3-4)	2335	28-02-78
(5)	2335	01-03-78
368711 (1-2)	2335	01-03-78
(3)	2335	26-02-78
(4)	2335	25-02-78
(5)	2335	24-02-78
368712 (1-2)	2335	02-03-78
(3)	2335	26-02-78
(4)	2335	25-02-78
(5)	2335	24-02-78
368713 (1-2)	2335	02-03-78
(3)	2335	26-02-78
(4)	2335	25-02-78
(5)	2335	24-02-78
368714 (1)	2335	24-02-78
(2-5)	2335	23-02-78

2334

32  
85m 31  
30  
84m 29  
28  
83m 27  
26  
82m

--- CLAIMS SURRENDERED  
— CLAIMS IN FORCE

**URANERZ EXPLORATION & MINING LTD.**  
  
OTISH MOUNTAINS WEST 71-85  
LAND STATUS MAP NO. 2  
QUARTERLY REPORT - JUNE 1973  
LORENZ GUILY

367756	367755	367754	367754	367753	367753
-1-	-5-	-5-	-4-	-4-	-3-
367756	367755	367755	367754	367753	367753
-2-	-1-	-1-	-3-	-5-	-2-
367756	367755	367755	367754	367753	367753
-3-	-3-	-2-	-2-	-1-	-1-
367756	367751	367750	367749	367748	367752
-4-	-1-	-1-	-1-	-1-	-5-
367756	367751	367750	367749	367748	367752
-5-	-2-	-2-	-2-	-2-	-4-
367757	367751	367750	367749	367748	367752
-1-	-3-	-5-	-3-	-3-	-3-
367757	367751	367750	367749	367748	367752
-2-	-4-	-4-	-4-	-4-	-2-
367757	367751	367750	367749	367748	367752
-3-	-5-	-5-	-5-	-5-	-1-

T4.12W

BL 140 35

2335

Beaver-Zoran Lake Claims:

The 429 claims in the Beaver-Zoran Lake area are held in good standing

No. of Claims	S 52°N:	197
	N 52°N:	<u>232</u>
	Total	429

Longitude: Approx. 72°23'W  
 Latitude: Approx. 51°59'N  
 N.T.S.: 33 A/1 32 P/16  
 Area: 69.44 km  
 Mining District: Abitibi East  
 Staked by: Jean Alix  
 Staked on: August 25-September 16, 1976  
 Date of Transfer: October 26, 1976  
 UEM Interest: 33%  
 Partners: J.B.D.C.: 44 2/3%  
           INCO: 22 1/3%  
 Operator: UEM  
 Assessment Work Required: 1977: \$15,760  
                                   1978: \$87,200  
                                   1979: \$68,640  
 Assessment Work Filed: 22.IX.77: \$77,722  
 Rent: 1977: \$ 1,970  
           1978: \$ 4,290  
           1979: \$ 4,290

Application for development licence due on: see list of claims (latest date for claims S 52°N: September 6, 1977).

<u>Claim No.</u>	<u>Township</u>	<u>Staked on</u>	<u>Application for Develop.</u>
355515 (1-2)	2233	26-8-76	4-9-78
(3-5)	2233	27-8-76	5-9-78
361469 (1)	2233	25-8-76	3-9-78
(2-5)	2233	26-8-76	4-9-78
361470 (1-5)	2233	25-8-76	3-9-78
361622 (1-4)	2233	28-8-76	6-9-78
(5)	2233	27-8-76	5-9-78
361623 (1-2)	2233	27-8-76	5-9-78
(3-5)	2233	29-8-76	7-9-78
361624 (1-2)	2233	29-8-76	7-9-78
(3-4)	2233	28-8-76	6-9-78
(5)	2233	31-8-76	9-9-78
361625 (1-5)	2233	30-8-76	8-9-78
361626 (1)	2233	30-8-76	8-9-78
(2-3)	2233	29-8-76	7-9-78
(4-5)	2233	1-9-76	10-9-78
361627 (1-2)	2233	1-9-76	10-9-78
(3-5)	2233	31-8-76	9-9-78
361628 (1-2)	2233	31-8-76	9-9-78
(3-5)	2233	2-9-76	11-9-78
361629 (1-4)	2233	2-9-76	11-9-78
(5)	2233	1-9-76	10-9-78
361630 (1)	2233	1-9-76	10-9-78
(2-5)	2133	3-9-76	12-9-77
361631 (1-2)	2133	3-9-76	12-9-77
(3-5)	2133	4-9-76	13-9-77
361632 (1-5)	2233	25-8-76	3-9-78

<u>Claim No.</u>	<u>Township</u>	<u>Staked on</u>	<u>Application for Develop.</u>
361633 (1-4)	2233	25-8-76	3-9-78
(5)	2233	26-8	4-9-78
361634 (1-2)	2233	26-8	4-9-78
(3-5)	2233	27-8	5-9-78
361635 (1-3)	2233	27-8	5-9-78
(4-5)	2233	28-8	6-9-78
361636 (1-4)	2233	28-8	6-9-78
(5)	2233	29-8	7-9-78
361637 (1-5)	2233	29-8	7-9-78
361638 (1-5)	2233	30-8	8-9-78
361639 (1)	2233	30-8	8-9-78
(2-5)	2233	31-8	9-9-78
361640 (1)	2233	31-8	9-9-78
(2-5)	2233	1-9	10-9-78
361641 (1)	2233	1-9	10-9-78
(2-5)	2233	2-9	11-9-78
361642 (1-5)	2233	25-8	3-9-78
361643 (1)	2233	25-8	3-9-78
(2-5)	2233	26-8	4-9-78
361644 (1-2)	2233	26-8	4-9-78
(3-5)	2233	27-8	5-9-78
361645 (1-3)	2233	27-8	5-9-78
(4-5)	2233	28-8	6-9-78
361646 (1-4)	2233	28-8	6-9-78
(5)	2233	29-8	7-9-78
361647 (1-5)	2233	29-8	7-9-78
361648 (1-5)	2233	30-8	8-9-78
361649 (1)	2233	30-8	8-9-78
(2-5)	2233	31-8	9-9-78
361650 (1-2)	2233	31-8	9-9-78
(3-5)	2233	1-9	10-9-78
361651 (1-2)	2233	1-9	10-9-78
(3-5)	2233	2-9	11-9-78
361652 (15)	2233	25-8	3-9-78
361653 (1)	2233	25-8	3-9-78
(2-5)	2233	26-8	4-9-78
361654 (1)	2233	26-8	4-9-78
(2-5)	2233	27-8	5-9-78
361655 (1-2)	2233	27-8	5-9-78
(3-4)	2233	28-8	6-9-78
(5)	2133	28-8	6-9-77
361656 (1-3)	2133	28-8	6-9-77
(4-5)	2133	29-8	7-9-77
361657 (1-4)	2133	29-8	7-9-77
(5)	2133	30-8	8-9-77
361658 (1-5)	2133	30-8	8-9-77
361659 (1-5)	2133	31-8	9-9-77
361660 (1)	2133	31-8	9-9-77
(2-5)	2133	1-9	10-9-77
361661 (1)	2133	1-9	10-9-77
(2-5)	2133	2-9	11-9-77
361734 (1-4)	2233	2-9	11-9-78

<u>Claim No.</u>	<u>Township</u>	<u>Staked on</u>	<u>Application for Develop.</u>
361735 (5)	2133	2-9-76	11-9-77
361735 (1)	2133	2-9	11-9-77
361736 (2-5)	2133	3-9	12-9-77
361736 (1-2)	2133	3-9	12-9-77
361737 (3-5)	2133	4-9	13-9-77
361737 (1-3)	2133	4-9	13-9-77
361738 (4-5)	2133	5-9	14-9-77
361738 (1-4)	2133	6-9	15-9-77
361739 (5)	2233	6-9	15-9-78
361739 (1)	2233	6-9	15-9-78
361740 (2-3)	2233	7-9	16-9-78
361740 (4-5)	2133	7-9	16-9-77
361740 (1-2)	2133	7-9	16-9-77
361741 (3-5)	2133	8-9	17-9-77
361741 (1-3)	2133	8-9	17-9-77
361742 (4-5)	2133	9-9	18-9-77
361742 (1-4)	2133	9-9	18-9-77
361743 (5)	2133	10-9	19-9-77
361743 (1-5)	2133	10-9	19-9-77
361744 (1-2)	2133	11-9	20-9-77
361753 (1-5)	2133	3-9	12-9-77
361754 (1)	2133	3-9	12-9-77
361755 (2-5)	2133	4-9	13-9-77
361755 (1-2)	2133	4-9	13-9-77
361756 (3-5)	2133	5-9	14-9-77
361756 (1-3)	2133	5-9	14-9-77
361757 (4-5)	2133	6-9	15-9-77
361757 (1-4)	2133	6-9	15-9-77
361758 (5)	2133	7-9	16-9-77
361758 (1-5)	2133	7-9	16-9-77
361759 (1-5)	2133	8-9	17-9-77
361760 (1-2)	2133	8-9	17-9-77
361768 (3-5)	not existent		
361768 (1-5)	2233	3-9	12-9-78
361769 (1)	2233	3-9	12-9-78
361770 (2-5)	2233	4-9	13-9-78
361770 (1-2)	2233	4-9	13-9-78
361771 (3-5)	2233	5-9	14-9-78
361771 (1-5)	2233	5-9	14-9-78
361772 (4-5)	2133	6-9	15-9-77
361772 (1-4)	2133	6-9	15-9-77
361773 (5)	2133	7-9	16-9-77
361773 (1-5)	2133	7-9	16-9-77
361774 (1-5)	2133	8-9	17-9-77
361775 (1)	2133	8-9	17-9-77
361779 (2-5)	9-9	9-9	18-9-77
361779 (1-5)	2133	11-9	20-9-77
361777 (1-4)	2133	12-9	21-9-77
361778 (5)	2133	11-9	20-9-77
361778 (1-2)	2133	12-9	21-9-77
361779 (3-5)	2133	13-9	22-9-77
361779 (1-2)	2133	14-9	23-9-77

<u>Claim No.</u>	<u>Township</u>	<u>Staked on</u>	<u>Application for Develop.</u>
361779 (3-5)	2133	13-9	22-9-77
361780 (1-4)	2133	14-9	23-9-77
(5)	2133	15-9	24-9-77
361781 (1-5)	2133	15-9	24-9-77
361782 (1-5)	2133	16-9	25-9-77
361809 (1-5)	2233	9-9	18-9-78
361810 (1)	2233	9-9	18-9-78
(2-5)	2233	10-9	19-9-78
361811 (1-2)	2233	10-9	19-9-78
(3-5)	2233	11-9	20-9-78
361812 (1-3)	2233	11-9	20-9-78
(4-5)	2233	12-9	21-9-78
361813 (1-4)	2233	12-9	21-9-78
(5)	2233	13-9	22-9-78
362557 (1-3)	2133	4-9	13-9-77
(4-5)	2133	5-9	14-9-77
362558 (1-4)	2133	5-9	14-9-77
(5)	2133	6-9	15-9-77
362559 (1-5)	2133	6-9	15-9-77
362560 (1)	2133	6-9	15-9-77
(2-4)	2133	7-9	16-9-77
(5)	2233	7-9	16-9-78
362561 (1-5)	2233	8-9	17-9-78

4.2

LARGER CONCESSIONS

Exploration permits are granted only in New Quebec (north of 52nd lat.). The area of the permit shall not be less than 25 square miles, but not exceed 150 square miles. The maximum duration of the permit is 3 years. The annual rent is \$150 per square mile. (Chapter 34, Section 270, Mining Act).

5.

GENERAL GEOLOGY

The Otish Basin lies along the edge of the Superior Province unconformably overlying an Archean basement. The Archean complex is composed of a quartzo-feldspathic-biotite gneiss, metavolcanics, metasediments and granite complex.

The Archean units are overlain by an Aphebian succession of fluviatile conglomerates and coarse arkoses alternating with well sorted subarkoses and orthoquartzites (Indicator Formation), followed by mature arkoses, dolomites and argillaceous conglomerates (Peribonca Formation). The Archean and Aphebian rocks have been intruded by dikes and sills of gabbroic composition.

Table of Formation

Cenozoic		Recent & Pleistocene	Sand - Glacial Till
unconformity			
Precambrian	Proterozoic	Otish Gabbro	Gabbro, Diabase
		Otish Group	Peribonca Formation
			Indicator Formation
unconformity			
	Archean	Granitic Complex	Granite, granodiorite to tonalite, pegmatite massive to gneiss
		Metasedimentary & Metavolcanic rocks	Biotite gneiss, quartzite metaconglomerate, amphibolite, basalt
		Gneiss Complex	Quartzo-feldspathic biotite gneiss

6. PROSPECTIVE TARGETS AND AREA

Beaver-Zoran Lake Area:

- 1) The lateral extension of the tectonically controlled mineralized lense.
- 2) The various geochemical, radon, mercury, and magnetometer anomalies on the Beaver Lake grid.
- 3) Questor Anomalies.

Twenty-Mile Area:

- 1) The tectonically controlled mineralization represented by uraniferous boulders at Lorenz Gully and the vein-type veins at the Twenty-Mile Showings.
- 2) The I.P. anomalies associated with the head uraniferous boulder fan.

Regional Area:

- 1) The airborne spectrometric anomalies in the region.
- 2) Favourable geological area, with east-west trending structures.

7. INVESTIGATION

Beaver-Zoran Lake Area

- 1) 3,000 ft of exploration diamond drilling
- 2) limited  $\alpha$ -meter survey
- 3) limited scintillometer survey
- 4) soil sampling in selected areas.
- 5) boulder prospecting

Twenty-Mile Area

- 1) 3,000 feet diamond drilling
- 2) detailed prospecting
- 3) detailed geological mapping
- 4) ground geophysics (mag, Scintillometer, Radon)
- 5) saturation stream sediment sampling

Regional Area

- 1) helicopter spectrometer survey
- 2) geochemical survey i) limited lake sediment  
ii) regional stream sediment
- 3) geological mapping
- 4) boulder prospecting
- 5) ground follow-up of the airborne anomalies

7.1 AIRBORNE SURVEYS

Number of Line km: 3097  
Number of anomalies: 81  
Hours: 39.48

7.2 CARBORNE SURVEY

Nothing to report

7.3 GROUND SURVEYS

7.3.1 Ground Radiometric Survey

A total of 8 airborne spectrometer anomalies were investigated. A ground crew consisting of a geologist and a prospector/student employing SRAT-SPP-2 scintillometer, conducted a grid survey within a 300 by 300 meter area of anomaly center. All outcrops were plotted and mapped on aerial photographs. Above background radioactivity was noted and rock samples were collected.

A total of 45 km<sup>2</sup> (15 by 3) have been prospected by foot.

Three prospecting crews have covered a 45 km<sup>2</sup> area along the Archean/Aphebian unconformity northeast of the Twenty-Mile claim block, approximately 0.75 sq. km are prospected per day. Any radioactive boulder or outcrop are plotted on airphotos and flagged in the field, samples are collected for a geologist to ascertain the significance of the radiation.

7.3.2 Radon Survey

An extension to the 1977 alphameter survey has been completed between 4400+50E to 4600+00 and 3000N to 3250N and a total of 120 readings collected.

7.3.3 Geological Mapping

Regional geological mapping (1:50,000) is being completed along the northwestern rim of the Otish Basin; to date an area of 175 km<sup>2</sup> has been mapped.

Prior to the field season, an airphoto study was carried to outline the glacial deposits in the area.

7.3.4 Geochemical Survey

A lake bottom sediment, lake water and stream sediment surveys are currently in progress. To date

Lake bottom sediment	60 samples,
Lake waters	73 samples,
Stream sediment	99 samples were taken

7.4 GROUND GEOPHYSICS

7.4.1 Twenty-Mile Area

A geophysical report and map by M. Leppin on the geophysical surveys conducted in March 1978 in the Twenty-Mile Area is available in Appendix A.

7.4.2 Beaver-Zoran Lake Area

A scintillometer was carried between lines 3600N/4450E and 3850N/4900E at a total of 330 reading which was taken at 12.5 meter spacing.

7.5 DIAMOND DRILLING

7.5.1 Beaver-Zoran Lake Area

Exploration diamond drilling to test various anomalies located from surface surveys in 1977 is currently underway. To date a total of 4 diamond drill holes have been completed and 269 meters drilled. The drilling contract was awarded to Bradley Bros. Ltd. (See Diamond Drilling Summary)

7.5.2 Twenty-Mile Area

Exploration diamond drilling to locate source of uraniferous boulders, and to test favourable I.P. anomalies is in progress. To date one hole has been completed and 85 meters drilled. The drilling contract was awarded to Canadian Nickel Company Ltd. (See Diamond Drilling Summary)

7.6 MINERALOGICAL INVESTIGATION

Nothing to report.

8. RESULTS

UEM MONTREAL

## DIAMOND DRILLING SUMMARY

PROJECT: 71-85

LOCATION: Beaver Lake

1	2	3	4	5	6	7	8	9	10	11	12	13
D.D.H. No.	Location	Started/ Completed	DIP/ AZIM.	ELEV. (m)	Total Depth (m)	GEOLOGY: THICKNESS (m)			MINERALIZATION		CHEMICAL ASSAY	
						OB	Amphibolite	Granite	From-To (m)	GAMMA Log IC-Peak (cps)	From-To (m)	U <sub>3</sub>
BL - 22	<del>2800N</del> 5472E	18/06/78 - 19/06/78	45° <del>180°</del>		67.3	4m	4-43.6m 64.5-67.3	43.6-64.5	at 54m	400		
BL - 23	<del>2755N</del> 5472E	20/06/78 - 21/06/78	45° <del>180°</del>		67.3	4m	22-64 66-67.3	4-22 64-66	at 17m	300		
BL - 24	<del>3175N</del> 5054E	23/06/78 - 24/06/78	45° <del>180°</del>		67.3	3.3	3.3-12 (gneiss) 59-67.3	12-59	59.3 - 60	450		
BL - 25	<del>5054E</del> 3130N	25/06/78- 26/06/78	45° <del>180°</del>		67.3	6.1	6.1-17.8	17.8-67.3	25-25.6	550		

UEM MONTREAL

DIAMOND DRILLING SUMMARY

PROJECT: 71-85  
LOCATION LORENZ GULLY

1	2	3	4	5	6	7	8	9	10	11	12	13
D.D.H. No.	Location	Started/ Completed.	DIP/ AZIM.	ELEV (m)	Total Depth (m)	GEOLOGY: THICKNESS (m)			MINERALIZATION		CHEMICAL ASSAY	
						OB	Volcanic		From-To (m)	GAMMA Log IC-Peak (cps)	From-To (m)	U <sub>30</sub>
LG - 1	2209E 705N	22/06/78- 27/06/78	45° 341°		85.7	2.89	2.89- 85.7		34.5 52.43-53.47	6400 1000		

8.1.1 Anomalies

A total of 81 has been located during the helicopter spectrometer survey. To date only 8 of the anomalies have been checked on the ground. The cause of the anomalies checked were slightly radioactive granite and pegmatite rocks.

Prospection along the unconformity has located,

- i ) slight radioactive fractures in gabbros
- ii) thorium rich conglomerate in contact with intrusive gabbros in a limited area.

8.1.2 Geochemical Anomalies

Nothing to report.

8.2 MINERALIZATION

To date no new uranium mineralization has been located.

8.3 DRILLING

8.3.1 Beaver-Zoran Lake Area

The two drill holes (Bl 22 & 23) in the southeastern corner of the area encountered volcanic-amphibolitic-chloritic strata and high background granitic rocks. Rock samples have been taken from the core in the granite, where the gamma log reading yielded 400 c/s (Mt. Sopris) for  $U_{38}O_8$  analysis. It is believed that the geochemical U-anomalies in stream sediments from that area stem from granite with high U background (see also Profile No. 1, Fig. 1). The remaining two drillholes, just south of the known zone of U-mineralization encountered the following sequence (from N to S):

Gneiss

"Granite:

A fractured contact zone of 60 cm in amphibolite.

This zone, at a depth of 58 m in Bl 24, is weakly mineralized.

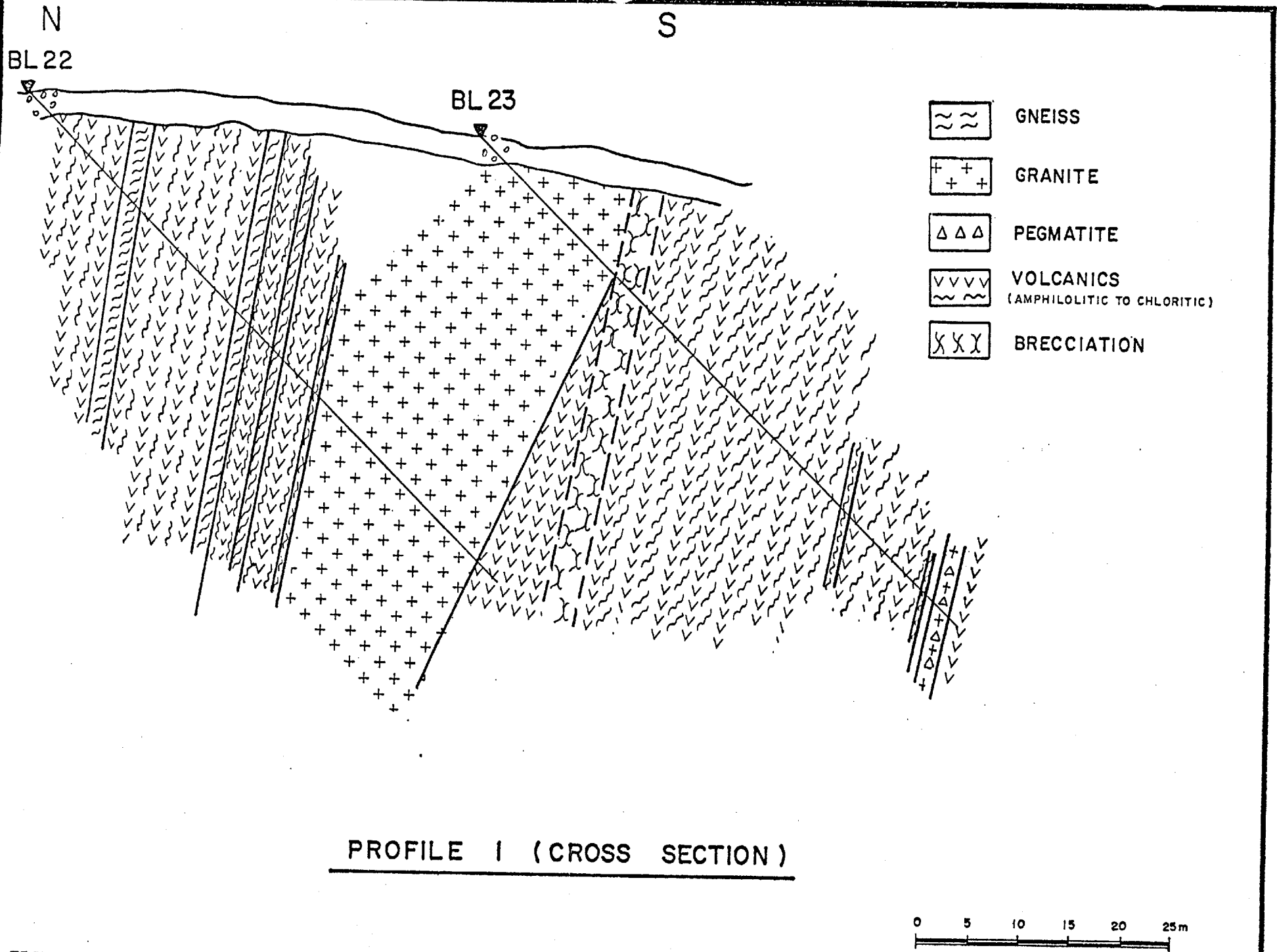
Volcanic - amphibolitic - chloritic strata

"Granite"

(See also Profile 2, Figure 2)

Three samples have been taken from the zone of weak mineralization.

A new interpretation of drilling and surface exploration results from 1977 season by W. Gehrisch is available in Appendix B.



PROFILE I (CROSS SECTION)

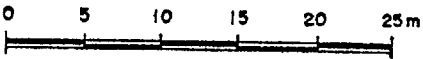
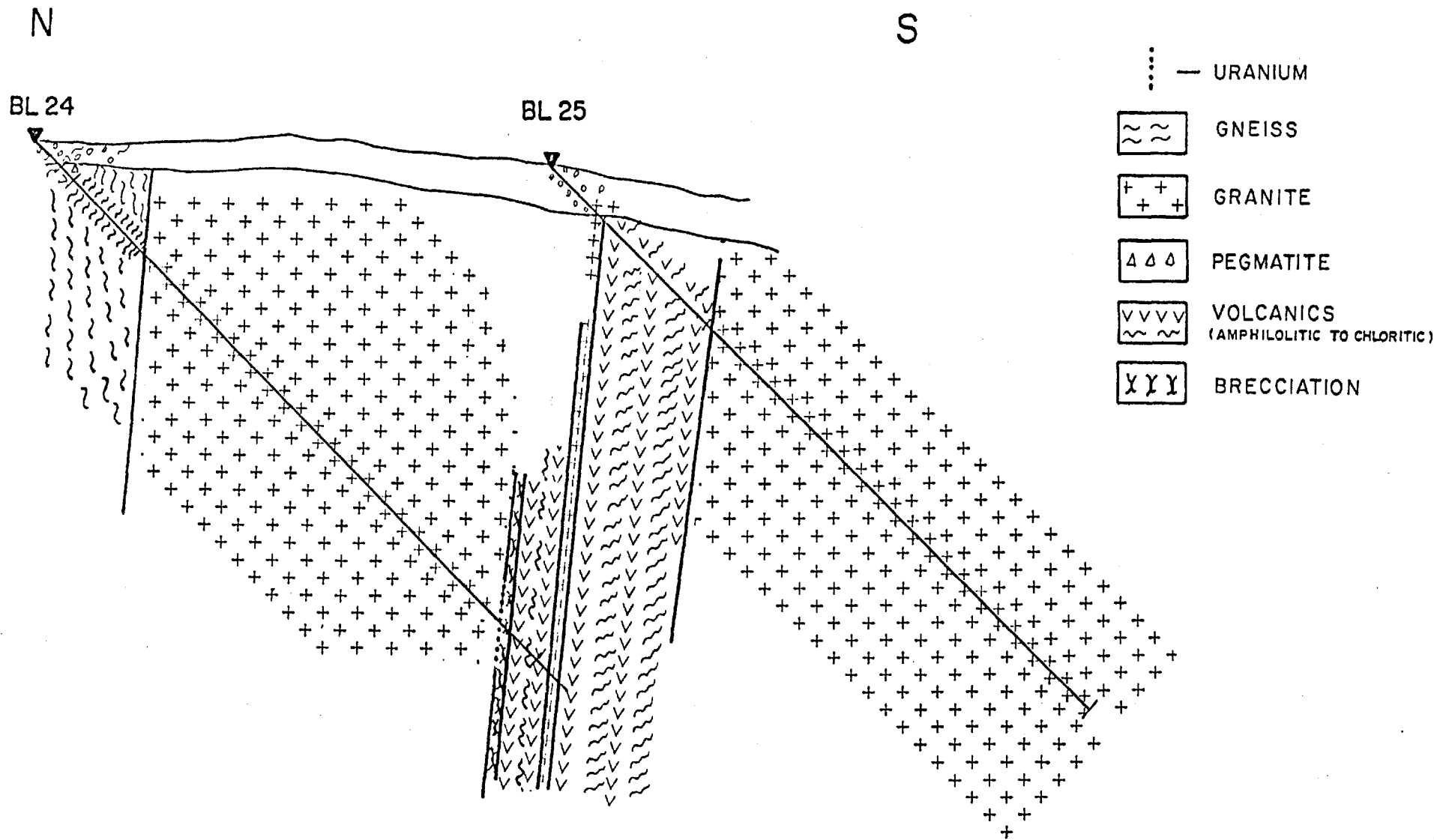


FIGURE 1



PROFILE 2 (CROSS SECTION)

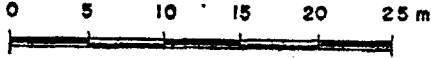


FIGURE 2

8.3.2 Twenty-Mile Area

Lorenz Gully:

At Lorenz Gully, only one drill hole (LG 1) of 85 m has been completed. The drillhole intersected the U-mineralization exactly at the axis of the I.P. anomalies, at a depth of 35 m. The well mineralized zone is only a foot large and is characterized by strong brecciation and hematization, extending far beyond the mineralized section. Also Barite veins are found far off the U-mineralization.

9. ASSESSMENT AND RECOMMENDATION

The exploration program had just commenced. No assessment or recommendation shall be considered on the limited data available.

APPENDIX A  
PROJECT 71-85  
BEAVER ZORAN / OTISH WEST  
TWENTY MILE AREA  
GEOPHYSICAL REPORT 1978  
QUARTERLY REPORT JUNE 1978

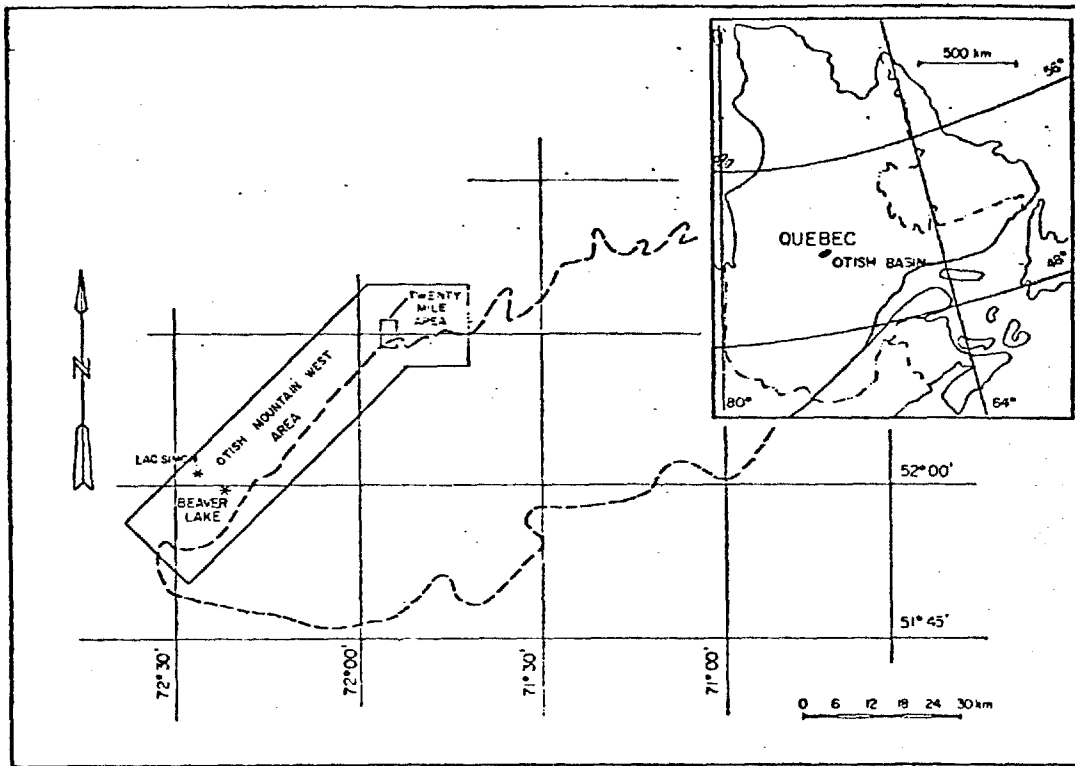
Prepared by:  
M. Leppin, U.E.M. Montreal

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### MAPS

MAP 1:	LOCATION MAP
MAP 2:	INDUCED POLARISATION AND RESISTIVITY SURVEY
MAP 3:	CHARGEABILITY CONTOURS
MAP 4:	MAGNETOMETER SURVEY
MAP 5:	MAGNETIC CONTOURS
MAP 6:	E.M.-16 SURVEY (NLK)
MAP 7:	E.M.-16 SURVEY (NAA)



## APPENDIX A

URANERZ EXPLORATION AND MINING LIMITED

OTISH MOUNTAINS WEST 71-85  
20 MILE AREA  
LOCATION MAP

QUARTERLY REPORT, JUNE 1978

COMP. M. L.	DATE JUNE/78	REP. RAP. NO. 71-85-13	MAP. CARTE NO. 1
GRAN. DESS. J.B.H.	DATE JUNE/78		REPORT NO.
REVISION		SCALE ECH.	PROJ. NO. 71-85
T.C. TO BORN	REF.		FILE DESS. MQ5-106

1. INTRODUCTION

During March 1978, geophysical investigations were made in the Twenty Mile Area, (see Map 1) to locate the source of mineralized (sulphides, uranium) boulders mapped in the vicinity of Lorenz Gully. In the area between lines 1 + 00N to 52 + 00N from 1 + 00W to 15 + 00W a total field magnetometer ground survey was carried out (39.1 line-km) whereas in the area of main interest between lines 14 + 00N to 28 + 00N from 1 + 00W to 10 + 00W, including Lorenz Gully, an induced polarisation/resistivity survey (11.2 line-km) and a VLF (E.M.-16) survey (12.3 line-km) were conducted.

2. INDUCED POLARISATION AND RESISTIVITY RESULTS

The survey was carried out with a portable Soquem I.P.-system (receiver, SWPI, transmitter: Model 2, Serie 3), applying the pulse-transient method. Using the double-dipole array the separation between the electrodes in general was 25 m ( $a = 25$  m,  $n = 1$ ). For detail work on lines 21 + 00N and 22 + 00N the separations  $n = 2$  and  $n = 3$  were used. Readings of the apparent chargeability  $M_a$  and of the apparent resistivity  $\rho_a$  were taken at a 25m station interval.

During March 1978, the area of investigation was covered by an approximately 1.5 m thick layer of snow requiring the use of four steel electrodes. The precision of the chargeability readings was about 1 ms. The survey results are shown on Map 2.

a) Apparent Chargeability

West of 3 + 00W the chargeability background is about 3 ms., east of 3 + 00W and north of line 19 + 00N the background is about 5 ms. In the area of interest there are several chargeability anomalies (up to 44 ms.), nevertheless because of the large separation (100 m) between the survey lines the direction of the anomalies is difficult to establish. However, taking the magnetometer results (see Map 4) into account, six zones (A,B, C,D,E,F) of high chargeability can be outlined. The interpretation is shown on Map 3.

A: The zone is stretching from SSW to NNE. The amplitudes of the anomalies increase to the north (highest reading 35 ms at 27 + 00N, 9 + 12.5W). The area is overlain by overburden with a low resistivity which probably masks the anomalies. The zones is not magnetic.

- B: The zone is stretching from SSW to NNE. The amplitudes of the anomalies increase to the north (highest reading 17.9 ms at 22 + 00N, 7 + 62.5W). According to the chargeability pseudo-depth contours of line 21 + 00N (see Map 2) the anomalies are caused by a dyke-like structure with some depth extent dipping to the east. The anomaly on line 22 + 00N at 7 + 75W coincides with the location of the Lorenz Gully boulders (felsensmeer). The zone correlates with a NNE stretching weak magnetic anomaly (300  $\gamma$ ) and could be the continuation of zone A, displaced by the Lorenz Gully fault.
- C: Two almost parallel zones seem to stretch from SWS to ENE. The highest reading 44 ms is located at 23 + 00N, 5 + 87.5W. The zone does not correlate with magnetic anomalies.
- D: The zone is stretching from W to E. The amplitudes of the anomalies increase to the W (highest reading 22.0 ms at 15 + 00N, 5 + 62.5W). The zone does not correlate with magnetic anomalies.
- E: Broad area of high chargeability background (highest reading 25 ms at 26 + 00N, 8 + 87.5W). The zone correlates with high magnetic anomalies (up to 2000  $\gamma$ ). Both chargeability and magnetic anomalies probably are caused by material with an increased content of magnetite.
- F: This area of high chargeability background (up to 10 ms) correlates with the Otish Sediment region (quartzites).

b) Apparent Resistivity

Resistivities were measured in the range between 200  $\Omega$  m and 168.10<sup>3</sup>  $\Omega$  m. The Otish Sediment region east of 3 + 00W, north of L 19 + 00N in general shows high resistivities (> 50.10<sup>3</sup>  $\Omega$  m). The geological unit north of line 25 + 00N shows resistivities between 20.10<sup>3</sup>  $\Omega$  m of 40.10<sup>3</sup>  $\Omega$  m whereas south of line 25 + 00N resistivities of about 10.10<sup>3</sup>  $\Omega$  m dominate. The low resistivities (10<sup>3</sup>  $\Omega$  m) measured in the river valleys probably indicate an increase of the overburden thickness. According to the resistivity pseudo-depth contours (see Map 2) between line 20 + 00N and 22 + 00N (Lorenz Gully) the apparent resistivities seem to be low up to a depth of several ten meters, indicating a thick overburden or a fault zone. On line 23 + 00N a resistivity low (10<sup>3</sup>  $\Omega$  m) correlates with the chargeability high (44 ms) at 5 + 87.5W.

3. TOTAL FIELD MAGNETOMETER RESULTS

The magnetometer survey was carried out between March 3rd and March 22nd. The earth's total magnetic field was measured with a proton free precession magnetometer (Scintrex MP-2) at a 25m (12.5 m) station interval. Besides corrections for diurnal variations, no other corrections were made. All readings are related to the total magnetic field at 1 + 00W, 28 + 00N (March 3rd, 1978 - 3.30 p.m.). The magnetic profiles are shown on Map 4, contours are shown on Map 5. South of line 25 + 00N the magnetic contours in general stretch from SSW to NNE, north of line 25 + 00N, west of 3 + 00W the contours indicate structures stretching from ESE to WNW. The area between lines 15 + 00N and 28 + 00N is of main interest. Over the basement west of 3 + 00W the magnetic field is rather turbulent, however over the Otish Sediment region in general it is smooth. The unconformity (point-dashed line on Map 5) is indicated by a decrease of the magnetic field east of the contact. According to the magnetic data the unconformity probably is displaced by two faults. The high magnetic anomalies (up to 2000  $\gamma$ ) north of line 25 + 00N (dashed line on Map 5) seem to be caused by material with an increased content of magnetite west of 8 + 00W the magnetic field in general decreases. A weak magnetic anomaly of about 300  $\gamma$  (continuous line on Map 5) which probably is due to a small dyke-shaped body, stretches SSW from line 22 + 00N, 7 + 50 W to line 16 + 00N, 6 + 00W.

4. E.M.-16 RESULTS

The transmitting stations used for the VLF survey were NLK, Seattle (Washington),  $f = 18.6$  kHz and NAA, Cutler (Maine),  $f = 17.8$  kHz. In the Twenty Mile Area the inducing magnetic field of station NAA almost points SW whereas the field of station NLK points NNE. According to the location of the stations the angle between the field directions should be about  $90^\circ$ , however in the area of interest the two fields are almost parallel and perpendicular to the survey lines. All lines were surveyed with a Geonics VLF receiver, taking inphase and quadrature readings at a 25m station interval. During the survey station NAA was temporarily off the air. The E.M.-16 profiles are shown on Map 6 (NLK) respectively on Map 7 (NAA). The only structure which causes significant E.M.-16 anomalies is Lorenz Gully between line 19 + 00N and line 24 + 00N (see Map 6). A crossover of the inphase readings stretches NNW from 20 + 00N, 2 + 00W to 23 + 00N, 7 + 25W outlining the north flank of Lorenz Gully. Nevertheless because of the alignment of the survey lines almost parallel to the structure in detail very little can be said. The E.M.-16 anomalies do not correlate with any of the chargeability or magnetic anomalies.

5. CONCLUSIONS

Three geophysical ground surveys (I.P., E.M.-16, Mag.) were carried out to locate the source of mineralized (sulphides, uranium) boulders mapped in Lorenz Gully. Six zones of increasing chargeability can be outlined, two of them are correlated with magnetic anomalies. The location of the Lorenz Gully boulders correlates with a chargeability anomaly. The magnetometer data indicates the unconformity between the basement and the Otish Sediments which in the area of interest probably is displaced by two faults. The overburden respectively fault of Lorenz Gully causes E.M.-16 anomalies. Nevertheless, the E.M.-16 data does not correlate with any of the magnetic or chargeability anomalies.

APPENDIX B  
OTISH MOUNTAINS WEST  
PROJECT 71-85  
QUARTERLY REPORT - June 1978

DRILLING PROGRAM 1978  
BEAVER LAKE  
20 MILE AREA

Prepared by: Wolf Gehrisch

Compilation of drilling results in the form of drill logs (see Appendix C, Quarterly Report March 1978, Otish Mountains West) and on a map at the scale of 1:1000 (map 1) suggest a twofold structural control of the U-mineralizations: the most obvious control is represented by east-west striking breccia zones with subordinate east-west faulting and jointing within cordierite quartz biotite gneisses. The mineralizations (U - Ba) are following these structures. Furthermore these east-west features are accompanied by "layers" of unmetamorphosed "sandstone", tectonically (?) intercalated within the gneisses.

The second control seems to be of a more subtle nature: mineralized structures to the north and to the south of the main structure are lying on NW-SE axes. This direction is parallel to photolineaments which may either present a faulting system or a lithological trend. Confirmation of this trend and its importance for Uranium is delivered by a track etch survey (map 2). The track etch anomalies clearly follow a NW-SE direction. A simultaneously effected  $\alpha$ -meter survey produced less unequivocal results. Only by superimposing the  $\alpha$ -meter anomalies on the track etch anomaly map, the two surveys seem to be complementary, and some NW-SE trending zones of greater density of both track etch and  $\alpha$ -meter anomalies appear (map 2). These zones coincide with those deduced from the drilling results of map 1. Besides this, some groups of  $\alpha$ -meter anomalies also reflect the east-west trend, which has first been recognized to be the most important and most obvious control for the known mineralization at Beaver Lake.

A curiosity of uncertain significance may be shown by the results of the mercury survey: by plotting only the strongest anomalies, the already demonstrated NW-SE trend shows up again (map 3).

For locating further drilling sites, the geochemical stream sediment survey has been of prime importance, and the following model is applied:

Further mineralizations are thought to be bound to east-west structures, which themselves must lie within a favourable environment. This favourable environment is possibly indicated by the NW-SE trending zones described above. The actual targets are then defined

where geochemical stream sediment anomalies coincide with track etch and  $\alpha$ -meter trends (map 2).

1.2 20 mile AREA (Lorenz Gully)

At Lorenz Gully three possible structures for U-mineralization exist: Two of these structures have been interpreted from an I.P. Survey and one has been interpreted from air photographs and is also seen on the ground. The I.P. structures are thought to be sulfide bearing zones, whereas the photolineament - the "Lorenz Gully" itself is thought to be a major fault.

As numerous U-mineralized boulders also contain sulfides, it is only logical to assume, that some of the detected I.P. structures may be in close association with U-mineralizations. The "Lorenz Gully" fault could contain some remobilized mineralizations.

The drilling program will be concentrated in an area, where the association of I.P. structures and U-mineralizations is most obvious: In the vicinity of a frost-heaved sub-outcrop of U-bearing rock (Felsenmeer), two I.P. structures possibly merge just where the fault intersects these structures (see map 4). Three drill-holes will be sunk in the location and in the order as indicated on the enclosed map, irrespective of the results of each borehole. Each hole is aimed to intersect a different structure.

At the time of completion of these three holes, it should be clear which one of the structures is responsible for the mineralized boulders encountered in the vicinity of the drilling area. At this stage a follow-up of the mineralized structure is planned. Two possibilities of such a follow-up drilling program are represented schematically on the enclosed map. The spacing will be 50 meters and the length of each borehole will be less than 300'.

It is understood, that at a later stage, parallel structures may be the target for further drilling.