

GM 51230

GEOPHYSICAL SURVEYS

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Québec 

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GEOPHYSICAL SURVEYS

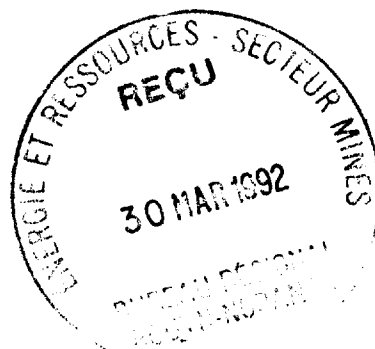
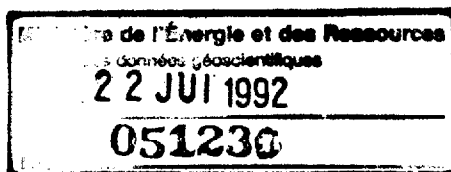
Dufay & Montbeillard Twps.

Québec

January 1992

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MER-SYSTÈMES
DE GESTION DES LOIS
QUÉBEC



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I - INTRODUCTION: At the request of CAMECO CORPORATION, Geophysical Surveys were undertaken, by EXPLORATION SERVICES REG'D, during the month of December, 1991, on the Lake Opasatica Property (Montbeillard Twp. project).

The magnetometer survey was carried out to be used as a guide to the geological and structural interpretation of the area, and, the electromagnetic survey was undertaken to evaluate the nature of the airborne INPUT anomalies located on the property.

II - PROPERTY: The property consists of a group of 45 contiguous claims of various shapes and sizes; these are numbered as follows:

Dufay Twp. (claims within surveyed areas)

<u>Claim Number</u>	<u>Lot</u>	<u>Range</u>	<u>Hectares</u>
5069575	62	VIII	35
5069576	57	VII	40
5071812	58	VII	40
5071811	59	VII	40
5071810	60	VII	40
5071809	61	VII	80

Dufay Twp.: (Unsurveyed area - 16 hectare claims)

5071802, 5071803, 5071804, 5071805, 5071806, 5071807

Montbeillard Twp.: (Surveyed area)

<u>Claim Number</u>	<u>Lot</u>	<u>Range</u>	<u>Hectares</u>
5071813	A	VIII	16
5071814	B	VIII	40
5071815	1	VIII	40
5071816	2	VIII	40
5069616	3	VIII	40
5069617	4	VIII	40
5069618	5	VIII	40
5071823	A	VII	80

Montbeillard Twp.: (Unsurveyed area - 16 hectare Cls)

5071820, 5071821, 5071822, 5071824, 5071825, 5071826,
 5071827, 5071828, 5071829, 5071830, 5071831, 5071832,
 5071833, 5071870, 5071871, 5071872, 5071873, 5071874,
 5071875, 5071876, 5071877, 5071878, 5071879, 5071880
 and 5071881

III - LOCATION & ACCESSIBILITY:

The claim group is located at an approximate distance of 25 Km southwest of the city of Rouyn-Noranda, Qc. The property straddles the north-south common boundary of Montbeillard and Dufay townships.

The area is readily accessible from Rouyn-Noranda by driving westwards along highway 117 for a distance of 18 Km; highway 101 is then followed for an additional distance of 8 to 10 Km - the claim group lies immediately to the west of highway 101. At least one half of the claim group is underlain by the waters of Lake Opasatica.

IV - GEOPHYSICAL SURVEYS:

Extent of Surveys:

The surveys were carried out along a previously cut grid whose 1.6 Km long base line trends east-west; cross lines occur at every 200 meter intervals and extend to the north 800 meters and to the south, for a maximum distance of 3.2 Km. Thus a total of 72 line kilometers have been cut and surveyed, of which 45 line kilometers extend on the iced surface of Lake Opasatica.

A) Magnetometer Survey:

- Instrumentation:

The magnetometer survey was carried out using an E.D.A. nuclear precession magnetometer with an accompanying base station for diurnal correctins.

- Data presentation:

Readings of the total magnetic field were taken at every 12.5 meter intervals and plotted on a map at the scale of 1:5 000. Magnetic contours were drawn at every 100 gamma intervals.

- Observations:

The surveyed area contains numerous magnetic anomalies of various sizes, shapes and patterns of random distribution and orientation.

The magnetic anomalies outlined on the land portion of the grid are more numerous and more punctuated than those observed on the ice of Lake Opasatica.

- Interpretation:

The irregularity of the magnetic patterns is caused by the folding and faulting of the ultra-mafic sills within the biotite schists, by the intrusions of mafic dykes (pyroxenite) and also by the intrusion of a large diabase dyke in the northern part of the grid.

B) Electromagnetic Survey:

- Instrumentation:

The electromagnetic survey was carried out using an APEX PARAMETRICS Maxmin II horizontal loop unit with a coil separation of 150 meters.

For a comprehensive interpretation, in-phase and out-of-phase readings were taken at every 25 meter intervals on three frequencies, 444, 1777 and 3555 Hz.

- Data presentation:

The readings obtained were plotted on a map at the scale of 1:5 000. Profiles of the in-phase and out-of-phase data were drawn along

each line at the scale of 1 cm = 10% for the 444 Hz frequency and at the scale of 1 cm = 20% for the 1777 and 3555 Hz frequencies.

- Observations:

Numerous conductors have been outlined by the electromagnetic survey; these are briefly outlined as follows:

CONDUCTOR "A":

Located in the northern part of the grid, this 1.2 kilometer long anomaly trends northeast from cross line 2 E to cross line 16 E; it lies south and at close proximity to the large diabase dyke of the area and trends in a direction more or less parallel to it.

This conductor is relatively weak along most of its strike length - its strongest response has been observed on cross line 4 E. On this line the conductor axis is located at 3+25 N.

CONDUCTOR "B":

The northern limb of this folded conductor extends from line 0 to cross line 16 E and

trends northeastwards, parallel to conductor "A"; the southern limb of this anomaly strikes southeasterly from line 0 to line 8 E.

The anomaly's conductivity varies from line to line - however its optimum responses have been observed on line 2 E - the northern limb intersects this line at 1+75 N and the southern limb at 0+75 N.

CONDUCTOR "C":

This segmented anomaly has been observed north of the base line, between cross lines 4 E and 14 E. Segment C-1 of this conductor trends east-west; the other segments trend east, north-east.

The strongest of the three segments is C-1; segments C-2 and C-3 are relatively weak.

Optimum responses have been observed on lines 6 E and 8 E. The conductor axis intercepts these lines at 1+00 N.

CONDUCTOR "D":

Folded conductor "D" is located mostly on land on the southwestern part of the surveyed area.

The southern limb of this folded conductor trends in a southeasterly direction from cross line 6 W to cross line 2 E. The strongest response occurs near the shoreline on line 6 W; the conductor axis intercepts this line at 0+75 N. The conductor gets weaker as it trends southeastwards. The northern limb of this anomaly is short and folded.

CONDUCTOR "E":

A 500 meter long, weakly folded E.M. anomaly parallels the shoreline east of line 6 W between 15 S and 20 S. This anomaly has been observed on 2 lines only, i.e. cross line 15 S and cross line 19 S (east-west lines).

CONDUCTOR "F":

This 700 meter long weak anomaly intercepts line 6 W at 5+00 S and lines 4 W and 2 W at 4+00 S. Its strongest response occurs on line 4 W.

CONDUCTOR "G":

This short and weak anomaly has been observed on line 4 E only - the conductor axis crosses this line at 23+50 S

CONDUCTOR "H":

This conductor has also been observed on one line only - it intercepts line 6 E at 21+00 S. This anomaly is relatively weak.

CONDUCTOR "I":

A strong, folded E.M. anomaly has been located in the vicinity of line 6 E between 15 S and 19 S. The northern limb of this anomaly extends from east-west cross line 15 S at 3+75 E, intercepting line 4 E at 15+50 S, then line 6 E at 16 +50 S - the conductor appears to fold immediately east of line 6 E to re-intersect cross line 6 E at 18+00 S to extend southwards for a distance of approximately 100 meters.

The optimum response of this relatively short E.M. anomaly occurs on line 6 E.

CONDUCTORS "J" & "K":

Two strong, folded and parallel conductors have been identified in the vicinity of cross line 14 E between 14+00S and 20+00S. Conductor "J"

intercepts cross line 15 S at 13+00 E, cross line 14 E at 16+50 S and 16+75 S, and cross line 19 S at 12+50 E. Conductor "K" intercepts cross line 14 E at 13+50 S and 19+00 S; it also intercepts cross line 15 S at 14+50 E and cross line 19 S at 14+00 E.

These 900 meter long anomalies are under the waters of Lake Opasatica but at close proximity to two small islands.

A detailed Maxmin II survey has also been carried out using a 100 meter coil separation; this survey covered the following lines:

L 13 S	from 7+00 E to 18+00 E
L 17 S	from 4+00 E to 18+00 E
L 21 S	from 7+00 E to 18+00 E
L 5 E	from 13+00 S to 24+00 S
L 7 E	from 13+00 S to 24+00 S

IV - CONCLUSIONS & RECOMMENDATIONS:

The magnetometer survey has outlined numerous anomalies of various sizes, shapes and orientations. These anomalies are caused by folded and faulted ultramafic sills within biotite schists and by numerous mafic intrusives, including a large northeast trending diabase dyke located in the northern part of the grid.

The horizontal loop electromagnetic survey has outlined numerous conductors, most of which, have been folded. The conductors are probably caused by concentrations of sulfides.

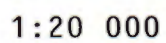
Detailed surveys should be undertaken to further evaluate the conductors.

Respectfully submitted:

E. Chartré



January 15, 1992



CLAIM SKETCH

R IX

R VIII



Lac Opasatica

R VIII

R VII

5069575

5069576

5071812

5071811

5071810

5071809

5071807

5071806

5071805

5071802

5071803

5071804

5071813

5071814

5071815

5071816

5069616

5069617

5069618

62

A

B

1

2

3

4

5

57

58

59

60

61

5071823

lot A

5071822

5071821

5071820

5071870

5071824

5071825

5071872

5071871

5071827

5071826

5071873

5071874

5071875

5071828

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Lac Opasatica

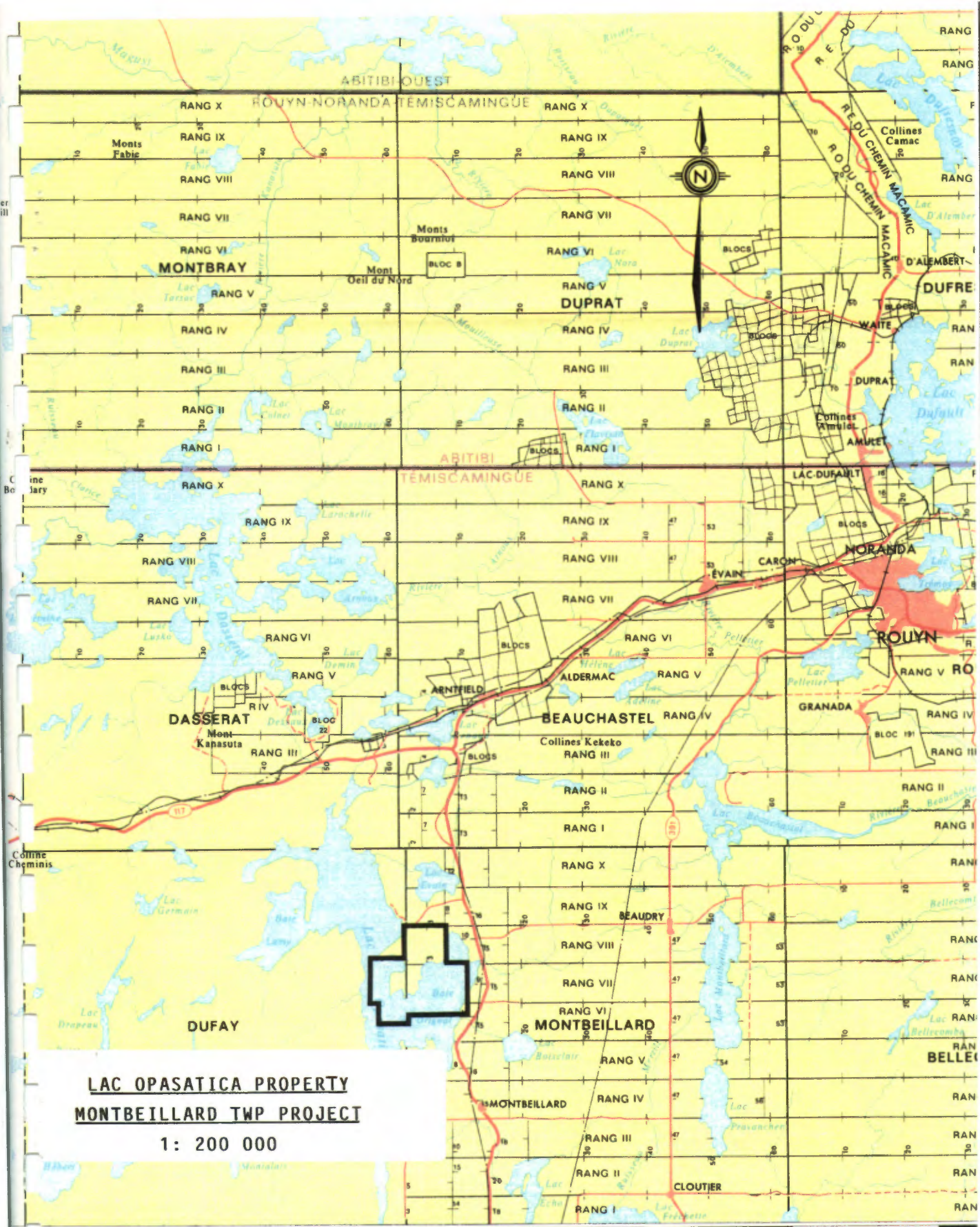
1:25 000

CAMECO CORPORATION

MONTBEILLARD PROJECT

CANTON DUFAY

CANTON MONTBEILLARD



LAC OPASATICA PROPERTY
MONTBEILLARD TWP PROJECT
1: 200 000



 **Cameco CORPORATION**

LAC OPASATICA PROJECT

LOCATION MAP

0 50 100 150
KILOMETRES

January 1992