LAKE SEDIMENT SURVEY, MEELPAEG LAKE AREA, CENTRAL NEWFOUNDLAND

by A. J. Butler

A helicopter supported profundal lake sediment sampling program was conducted over 17,400 km² in Central Newfoundland during the 1977 field season. The program was funded under the Canada Newfoundland - Mineral Development Subsidiary Agreement and the Canada Newfoundland - Uranium Reconnaissance Programme (U.R.P.).

Samples were collected from 3,806 sites within the area for a total of 4,048 samples including replicate and 2-layered samples. A sample density of 1 sample per 4.6 km² and a sample rate of 13 samples per hour for the total flying time of the contract were achieved.

The area (Figure 1), bounded on the east and west by longitudes 55° 30′ W and 57° W, respectively, in the north by latitude 49° N, and in the south by the coast, covers 18 complete 1:50,000 N.T.S. map sheets and parts of 2 others. Parts of four of the tectonic-stratigraphic zones, as defined by Williams *et al.* (1974), are located within the area. The bulk of the area is made up of the Botwood Zone consisting of volcanic and sedimentary rock units of Silurian age. Other zones are: the Exploits Zone of volcanic and sedimentary sequences of Silurian and Ordovician age and intrusives such as the Topsail Granite and the Feeder Granodiorite, with minor Carboniferous sedimentary rocks to the west of Red Indian Lake; the Gander Zone within the survey area is mainly sedimentary and metamorphic sequences of the Baie d'Espoir Group; the Avalon Zone within the area consists of basic and felsic volcanic rocks and tuffaceous and argillaceous sedimentary rocks of probable Hadrynian age (Greene and O'Driscoll, 1976).

The major known mineralization within the area is in the Buchans Group which hosts the zinc, lead, copper, silver and gold ores of the Buchans Mine (1). Other known occurrences are the Victoria mine (2) of copper and zinc in andesite and pyroclastics; the copper and lead in the Great Burnt Lake area (3 and 4); chromite occurrences near Pipestone Pond (5) and Burnt Hill (6) areas; several lead, zinc and copper showings in the Bay d'Espoir area (7-9, 12, 14, 17, 18, 20-25, 27, 31, 33-38); and several molybdenite showings (10, 11, 12, 15, 16, 19, 30, 32) and a number of copper showings (28, 29) on the Hermitage Peninsula.

The samples are presently being analysed for Cu, Pb, Zn, Co, Ni, Ag, Mo, F, Mn, Fe, U, and L.O.I. (Loss on Ignition). It is anticipated that the results of this work will be available on open file in the first quarter of 1978. The map will be on a scale of 1:250,000, and will be plotted on a geological base compiled from maps by Anderson (1965), Anderson and Williams (1970), and Williams (1970, 1971).

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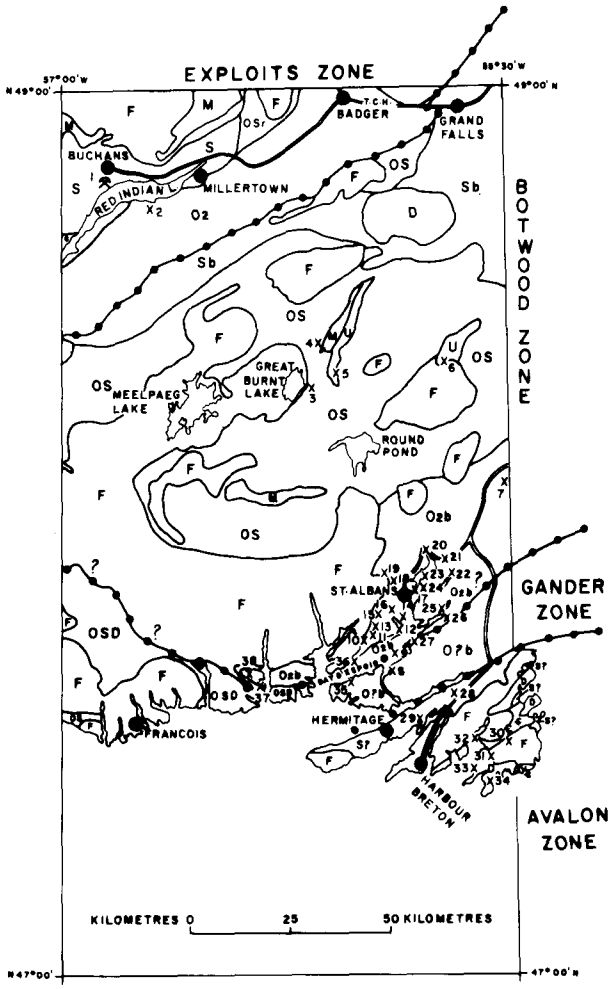
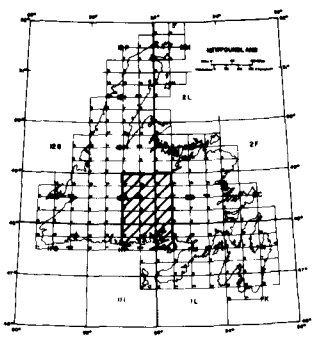


LEGEND

C	Carboniferous sedimentary rocks.
D	Devonian sedimentary and acidic volcanic rocks.
S	Silurian sedimentary and acidic to mafic volcanic rocks; Sb, Botwood Group; S?, Possibly Ordovician or in part late Hadrynian.
OS	Ordovician, Silurian, Devonian (and earlier) sedimentary and acidic to mafic volcanic rocks with metamorphosed equivalents.
O_2	Ordovician intermediate to mafic volcanic rocks and sedimentary rocks; O_2b Baie d' Espoir Group.
O?	Ordovician (or earlier) sedimentary rocks and metamorphosed equivalents; O?b, Bay d'Espoir Group.
C	Cambrian sedimentary rocks with minor volcanic rocks.
F	Felsic intrusive rocks.
M	Mafic intrusive rocks.
U	Ultramafic intrusive rocks.

MINERAL OCCURRENCES

Cu - Pb - Zn	Cu		Pb		Mo		Cr
1 (Buchans Mine)	2 (+Zn)	21	9	34	10	32	5
22 (+Sb)	3	23	12	36	11		6
26 (+As, Sb)	4	25	14		13		
29	7	28	20(+Zn, Ag)		15		
37	8	31(+Pb)	24(+Zn)		16(+B)		
38	17(+Au)	35	27(+Zn)		19		
	18		33(+Zn, F)		30		



INDEX MAP

Figure1: Generalized geology and mineral index of the area included in the 1977 regional lake sediment geochemical survey in the Meelpaeg Lake area of the Central Mobile Belt of Newfoundland.