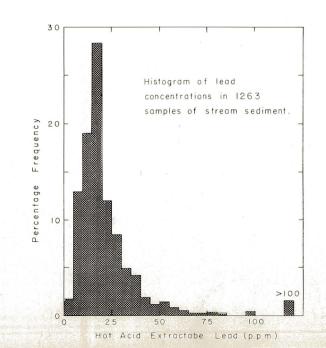


MINES DIVISION DEPARTMENT OF NATURAL RESOURCES

ATLANTIC DEVELOPMENT BOARD



The data recorded on this map are based on the analyses of 1,253 samples of fine-grained ment collected from the channels of rivers and streams, and from rivulets flowing from springs and sediment collected from the channels of Irves and setting, where possible the active channels were sampled, but in a few cases bank material or residual sediment of dried-up streams was used. Sediment samples from poorly drained areas of muskeg and beased in the sediment of dried-up streams was used. er workings contained abundant decomposed organic matter. All samples were collected during the 1967 field season. An attempt was made to maintain a uniform sample density, but this was frequently not achieved because of irregularities in the drainage network and the absence of an actively deposited silt-sized fraction in streams draining areas underlain by granitic rocks. All streams and rivers were traversed onfoot, and samples were collected, where possible, at intervals of 1,000 to 1,500 feet.

Sediment samples were air dried prior to shipment to Bondar-Clegg & Company Limited, Ottawa, Ontario for laboratory analysis. Lead was determined by atomic absorption analysis after extraction from the -80 mesh sievefraction by hot HNO₃-HCl digestion. Values shown on this map are expressed in parts per million. The subdivisions used on the map are arbitrary, and the lowest subdivision can be

The lead content of the stream sediments ranges from 5 ppm to 460 ppm. The frequency distribution of lead data shows that 38.1 per cent of all analyses exceed the normal background value of 20 ppm, and 9.7 per cent of the analyses exceed 40 ppm. Many of the lead anomalies in the Loch Alva-Nerepis ppm, and 9.7 per cent of the analyses exceed 40 ppm. Many of the lead anomalies in the Loch Alva-Nerepis River region appear to be associated with manganese concentrations in excess of 10,000 ppm. Manganese oxides and hydroxides adsorb and/or coprecipitate lead, so that the presence of large concentrations of manganese (Map 5) may be a factor in the localization of lead in some of the anomalous streams. This feature should be carefully considered when evaluating all anomalies on the map. Unusually low copper, zinc and low pH values in the surface waters of the Musquash, Lepreau and New River drainage basins. The coincides per lost relative to the drainage basins. dence of low metal values with acid stream water pHis less apparent on the lead map, and may reflect relatively lower lead mobility in the 4.0 - 6.0 pH range.

Sediments in several streams that drain the southeastern margins of the Charlotte batholith Sediments in several streams that drain the solutions at the solution of the hove produced anomalous lead values (40 ppm to 460 ppm) that are unrelated to known deposits or contaminating agencies. Higher than average lead values occur in the upper reaches of the Pocologan and New River systems, the northwest tributary of the Nerepis River, streams northwest of Long Reach, and a number of brooks draining into the northeast end of Loch Alva. Many of the lead anomalies in these streams

can be correlated with above normal concentrations of zinc, molybdenum and manganese.

The lead contents of stream and spring sediments shown on this map should be interpreted with respect to the geological environment (Map 1) and compared with the contents of individual elements in stream sediments on Maps 2 to 6 inclusive.

Metal Symbols

Analyses by Bondar-Clegg & Company, Limited, Ottawa, Ontario

taken to represent the regional background.

Field work by W.J. Wolfe, N. Szabo, J.S. Estabrooks, D.K.J. MacKinnon, A. Ashaolu and B.J. Sullivan

Map 1 should be consulted for further details on the geology and economic geology of the

Geological Notes