HARBOUR BRETON MISCELLANEA

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INTRODUCTION

The 1976 field season was devoted to visiting field parties and reconnaissance visits to proposed project areas. Two weeks, however, were spent rechecking critical areas in the Harbour Breton and Gaultois map areas, which were essentially completed in 1975 (Greene, 1975; Greene and O'Driscoll, 1976).

URANIUM POTENTIAL-HARBOUR BRETON MAP SHEET

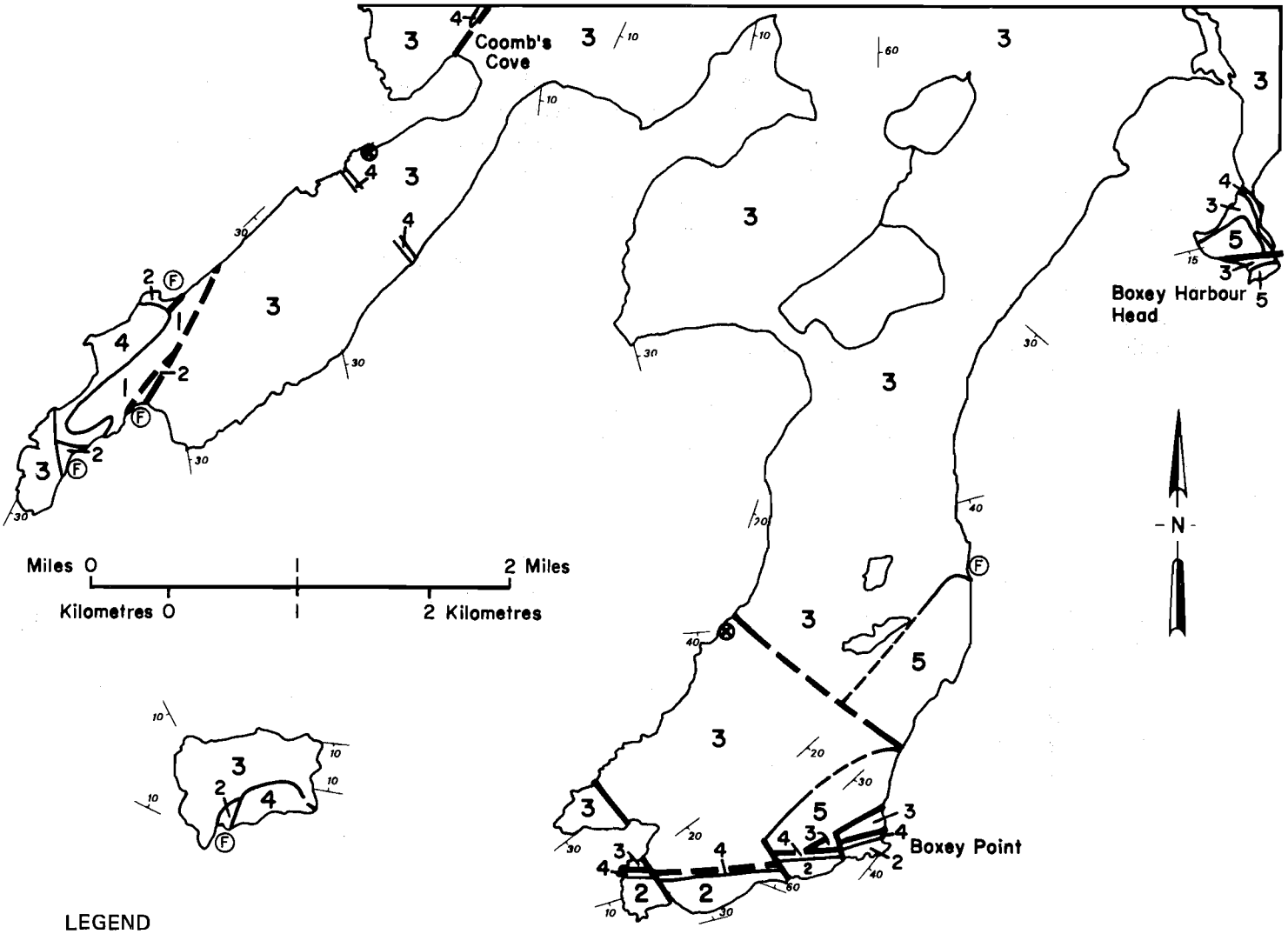
Much of the Harbour Breton map area and part of the Gaultois area is underlain by conglomerate, sandstone, shale and minor limestone of the Devonian and probable Devonian Cinq Isles, Pool's Cove and Great Bay de l'Eau Formations (Calcutt, 1973; Greene, 1975; Greene and O'Driscoll, 1976; Widmer, 1950; Williams, 1971). These rocks are among the youngest stratigraphic units in southeast Newfoundland. They appear to have the highest potential in the northern Fortune Bay area for sandstone-type uranium deposits.

Limited scintillometer surveys during the past field season led to the discovery of two radioactive zones in the Great Bay de l'Eau Formation. The first, in conglomerates on the west side of Boxey Point (Fig. 1), gave readings up to 10 times background (1500 cps as compared with 150 cps background) over a stratigraphic thickness of about four meters. The zone extends parallel to bedding for the extent of the outcrop, from the base to the top of a 20-meter cliff. Rock samples analysed by Atomic Energy of Canada Limited indicate uranium at 312 ppm. The second anomalous zone occurs in black shale of the Great Bay de l'Eau Formation immediately south of Coomb's Cove. The shale contains abundant Upper Devonian plant debris (Fig. 1). It gives scintillometer readings up to 2000 cps compared with a 100-150 cps background. The anomalous readings are confined to the upper three to five meters of the shale horizon, which has a total thickness of about sixty meters. The anomalous zone is traceable parallel to bedding for the extent of the outcrop, up a 10-meter cliff face. Analyses of rock samples from the black shale indicate uranium at 10 ppm.

BOXEY POINT BASALTS

Basaltic rocks outcrop within Harbour Breton map area on Boxey Point and Boxey Harbour Head. These rocks were previously interpreted as sills intruding the Great Bay de l'Eau Formation (Taylor, 1940; Widner, 1950; Greene, 1975). Re-examination of the sequence in 1976 was prompted by examination of thin sections and by Smith's (1975) suggestion that the Boxey Harbour Head body was a lava flow.

The basaltic rocks are best exposed on the east side of Boxey Point. At this locality four layers of fine to medium grained, dark grey and purplish grey basalt, ranging in thickness from 10 to 30 meters, are separated by thin (1 to 5 meters) intervals of red sandstone and shale. The upper and lower portions of the basaltic layers are highly amygdaloidal, with amygdules, filled with calcite and zeolites, ranging up to 2 cm in diameter at the top of the layers.



LEGEND

POST DEVONIAN (?)

5 BOXEY POINT BASALT: Grey amygdaloidal basalt with minor red sandstone, shale and pebble conglomerate.

UPPER DEVONIAN(?)

4 Pink to orange quartz-feldspar porphyry in dykes and plugs

UPPER DEVONIAN

3 GREAT BAY DE L'EAU FORMATION: Red to buff pebble to boulder conglomerate, minor green conglomerate, black shale

CAMBRIAN AND EARLIER

2 Green shale and siltstone, quartzite, red sandstone and shale, black shale.

PRECAMBRIAN

1 LONG HARBOUR GROUP: mafic agglomerates and breccias

SYMBOLS

Geological boundary (defined, approximate) .....

Bedding, tops known (inclined, vertical) .....

Fault (defined, approximate) .....

Fossil locality ..... Ⓕ

Radioactive occurrence ..... ⊗

Figure 1.

The upper portions of the basaltic layers are locally replete with sedimentary material, usually in the form of thin bands of shale apparently hanging down into the basalts from overlying shale beds. These shale bands were previously interpreted as roof pendants, and the basaltic bodies on this basis were considered to be sills. Closer examination indicates that although the lower parts of the shale bands are thermally metamorphosed, their upper parts and the sedimentary rocks overlying the basalts are not affected. The pendant shale bands can therefore also be interpreted as crevasse fillings in the upper parts of flows with still molten interiors. This interpretation is supported by the highly amygdaloidal nature of the basalts, the presence of regular lower contacts and irregular, rubbly upper contacts in some of the bodies, and by the total lack of cross-cutting relationships. The rocks on Boxey Point are therefore re-interpreted as basaltic flows.

A single basalt layer outcrops on Boxey Harbour Head, its top being covered by the sea (Smith, 1975); this body presumably represents the lower part of the basal flow in the Boxey Point sequence.

The basaltic sequence is conformably underlain by about 10 meters of coarse red sandstone and shale, with minor pebble conglomerate. Contacts between this sandstone and shale sequence and the underlying pebble to boulder conglomerates of the Great Bay de l'Eau Formation are covered or faulted; the contact is believed to be disconformable because quartz-feldspar porphyry dykes, abundant in the Great Bay de l'Eau conglomerate, have not been found cutting the basalts.

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