

## **A. CANADA'S CONTINENTAL MARGINS AND OFFSHORE PETROLEUM EXPLORATION**

### **MAGNETIC ANOMALY MAP OF THE ATLANTIC PROVINCES**

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A magnetic anomaly map of the Atlantic Provinces has been compiled from the existing aeromagnetic and shipborne magnetic data which cover most of the land and adjacent continental shelf areas. The magnetic anomaly map has been obtained by removing the earth's main magnetic field, which has its origin in the earth's core, using the 1965.0 International Geomagnetic Reference Field corrected for the secular variation in order to emphasize those magnetic anomalies which are related to crustal geology. The resultant 1:1,000,000 map, the first such map for Canada, has been compiled using six (6) colours each representing a 200-gamma interval with intermediate 100-gamma contours. The paper is presented to illustrate the value of residual magnetic anomaly maps and to make the case that such maps should be a standard end product of aeromagnetic and shipborne magnetic surveys. The magnetic anomaly map of the Atlantic provinces contains anomalies mostly having two distinct wavelengths. The longer wavelength in the order of 200 km is due to deep-seated crustal effects, whereas the shorter wavelength anomalies, usually less than 10 km wide, are due to individual rock formations which outcrop or are overlain by sediments. Many well-known geological features are apparent on the map together with some features which were previously unknown. For instance, the southern part of the Gulf of St. Lawrence which is underlain by a considerable thickness of sediments is paradoxically a regional magnetic high area.